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Freie Mitteilungen SGH Communications libres SSCM

Freie Mitteilungen / Communications libres I:

FM1 – Lessons learned: 20 MOTEC® over 4 years

Léonie Hüsler[1], Urs Hug[2], Carla Kellenberger[2], Stefanie Schmitt[2] ([1]Luzerner Kantonsspital, Chur; [2]Luzerner Kantonsspital, Luzern)

Einführung
Die Handgelenksprothetik hat über Jahrzehnte und mehrere Implantatgenerationen hinweg unzufriedenstellende Resultate geliefert und wird aufgrund der fehlenden Langzeitergebnisse der neuesten Generation weiterhin skeptisch beurteilt. Mit der Entwicklung der MOTEC® Prothese, die sich durch eine stabile Verankerung im dritten Mittelhandknochen auszeichnet, hat sich eine neue Begeisterung eingestellt, welche durch die publizierten Studienergebnisse von Reigstad et al. verstärkt wurde.
Methodik
Retrospektive Analyse von 21 MOTEC®-Prothesen, implantiert durch den Senior-Autor zwischen Oktober 2020 und März 2025. Eingeschlossen wurden 20 Patienten (15 Männer, Ø Alter zum Zeitpunkt der Operation betrug 63 Jahren) mit posttraumatischer Arthrose, vorwiegend SLAC-wrist.
Ergebnisse
PROMs und CROMs wurden erhoben und bewegen sich im publizierten Rahmen. Mit Fokus auf generelle Probleme und Komplikationen sind folgende Punkte erwähnenswert:
- Intraoperative Perforationen des dritten Mittelhandknochens (1), des Radius (1) sowie Berstungen des Capitatums (2) – ohne Einfluss auf das postoperative Management
- Limitierte intraoperative Platzverhältnisse bedingt durch vorgängige PRC erforderte einen palmaren Kapselrelease (3)
- In der ersten Fallserie zeigte sich postoperativ eine deutliche Schwellungstendenz; das postoperative Management wurde mit einer Kortisonstosstherapie ergänzt
- Wundheilungsstörung (1)
- Periprothetische Ossifikation mit Impingement (1), Revision steht an
- Periprothetische Radiusfraktur (1) nach Sturz
- Postoperativer Hochstand des Kopfes des dritten Mittelhandknochens (2)
- Beobachtete Tendenz zur Flexionsstellung und Ulnardeviation des Handgelenkes
- Schlechtere Beweglichkeit nach vorgängiger PRC im Vergleich zu Patienten ohne PRC (durchschnittlicher Bewegungsumfang Flexion-Extension von 58° vs. 105°)

Schlussfolgerung
Mit strenger Indikationsstellung, Konzentrierung der Erfahrung auf einen Operateur und einem kurzen Nachbeobachtungszeitraum von maximal 2 Jahren zeigen sich in 21 mit MOTEC® versorgten Handgelenken gute bis sehr gute Resultate. Nur in einem Fall steht eine Revision mit Erhalt des Implantates an. Gewisse Probleme wie Schwellungstendenz oder schlechtere Beweglichkeit nach früherer PRC sind in die präoperative Aufklärung und Planung miteinzubeziehen. Aufgrund der sehr hohen Patientenzufriedenheit und der bisherigen vielversprechenden Studienlage beabsichtigen wir, die Implantation der MOTEC® weiterhin selektiv einzusetzen.

FM2 – Isoelastic Resurfacing Prosthesis (Prosthelast®) for Comminuted Distal Radius Fractures

Ramon Damian Buechel[1], Alina Strohmaier[2], Joerg Hainich[3], Martina Greminger[2] ([1]Cantonal Hospital St.Gallen, Sankt Gallen; [2]Cantonal Hospital St.Gallen, St. Gallen; [3]Ostschweizer Handzentrum, St. Gallen)

Introduction:
Unicompartmental resurfacing prostheses represent a potential treatment option for elderly patients with severely comminuted distal intraarticular radius fractures and poor bone quality. While early reports have shown promising results, data on long-term outcomes remain limited. The aim of this study was to evaluate both clinical and radiological medium-term outcomes following the implantation of the unicompartmental resurfacing prosthesis (Prosthelast®) in elderly patients with severly comminuted distal intraarticular radius fractures.
Patients and Methods:
Patient-reported outcome measurements included evaluation of the Visual Analogue Scale (VAS) pain score, along with evaluation of the PRWE and QuickDASH scores. Objective outcomes included the measurement of active wrist range of motion and Jamar® grip strength. Radiological evaluations assessed implant positioning, bone remodeling and potential complications such as implant loosening, migration, or heterotopic bone growth.
Results:
Between 2018 and 2023, 23 female patients with AO type C distal intraarticular radius fractures underwent treatment with the Prosthelast® isoelastic resurfacing prosthesis. Mean follow-up was 44 months, with a minimum of 24 months. Mean age of patients was 78 years. No prosthesis removal or revision surgeries were required. All patients expressed satisfaction with their treatment decision and reported no significant functional limitations in daily life. However, a reduction in wrist mobility and grip strength was observed compared to the contralateral, healthy wrist. QuickDASH and PRWE scores indicated minor degree of functional limitation in this low-demand patient cohort, though the limitations were mostly attributed to comorbidities such as stenosing tenosynovitis, carpal tunnel syndrome, and degenerative changes unrelated to the prosthesis (e.g., rhizarthrosis). Radiological complications related to the prosthesis were minimal and included asymptomatic perforation of the radial head and impingement caused by osteophyte formation on the scaphoid.

Conclusion:
At medium-term follow-up, the isoelastic resurfacing prosthesis appears to be a viable treatment option for complex intra-articular distal radius fractures in elderly, low-demand patients.

FM3 – Recovery After Total Wrist Arthroplasty: 1-Year Pain, Function, and Satisfaction Outcomes

Maurizio Calcagni[1], Myrna Gunning[2], Sophie Brackertz[3], Olga Politikou[3], Inga Besmens[1] ([1]Hand Institut Zürich, Zürich; [2]Hand Institut Zürich, Zürich; [3]Klinik für Plastische Chirurgie und Handchirurgie, Universitätsspital Zürich, Zürich)

Introduction: Traditional wrist fusion for painful osteoarthritis presents unsatisfactory trade-offs between pain relief and functional preservation. The Motec wrist prosthesis offers a technological advancement with its cementless, modular ball-and-socket design, yet comprehensive outcome analyses combining objective measures and patient-reported outcomes remain limited.
Methods: This observational cohort study evaluated 22 patients (9 men, 13 women; mean age: 62 years) who underwent Motec wrist arthroplasty between March 2020 and March 2024. Outcomes were assessed preoperatively, at 3 months, and 12 months postoperatively using Numeric Pain Rating Scale (NPRS), Patient-Rated Wrist/Hand Evaluation (PRWHE), Total Active Motion (TAM), grip strength, and patient satisfaction measures using the outcome registry SUPEXOR.
Results: Significant pain reduction occurred at both rest and during loading ($p<0.05$). PRWHE scores improved progressively across all time intervals ($p<0.05$). TAM showed delayed improvement, with significant gains between 3 and 12 months ($p<0.05$). Grip strength significantly improved from baseline to 12 months ($p<0.05$). At 12 months, 77% of patients reported high satisfaction, and 100% would undergo the procedure again.
Discussion: Results demonstrated distinct recovery trajectories: pain improved rapidly, while motion and strength followed delayed patterns, informing rehabilitation protocols and patient counseling.
Conclusion: Motec wrist arthroplasty provides significant pain relief and functional improvement with high patient satisfaction at one-year follow-up.

FM4 – A decision-making algorithm for wrist arthroplasty in distal radius fractures in elderly patients

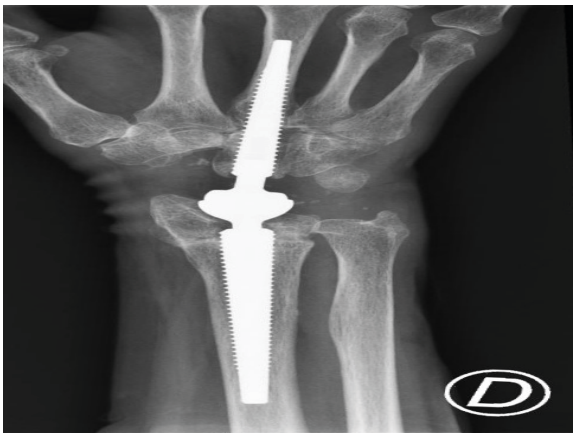
Sammons Massimo[1], Tami Ivan[1] ([1]Centro manoegomito, Gravesano)

Complex distal radius fractures (DRFs) in elderly patients are often complicated by osteoporosis and reduced bone density. This study examines the treatment of such fractures using wrist arthroplasty and presents our decision-making algorithm, which takes into account fracture morphology, patient age and needs, and associated wrist conditions.

Twenty-two patients with complex DRFs were treated between September 2020 and January 2025. The cohort included 4 males and 18 females, with a mean age of 75 years (range: 63–89 years). Fractures were classified using the AO system, and associated injuries were identified through radiographic assessments (X-rays and CT scans) in order to determine individualized treatment strategies. Patients who met the criteria of our algorithm underwent wrist arthroplasty and were followed up at 6 weeks, 3 months, and 6 months, including radiographic monitoring of implant osseointegration. Subsequently, patients completed the DASH (Disabilities of the Arm, Shoulder, and Hand) questionnaire and the PRWE (Patient-Rated Wrist Evaluation) test.

Our study reports satisfactory recovery of mobility (mean E/F 41-0-38°, P/S 64-0-66°) and grip strength (measured with the Jamar dynamometer, average of 16 kg). DASH and PRWE scores were comparable to current literature, considering the age of our study population.

Our study supports the effectiveness of Motec wrist arthroplasty as a viable treatment option for complex DRFs in a selected patient population, as determined by our decision-making algorithm. In future clinical scenarios, we aim to extend the follow-up period and increase the sample size.



MOTEC ABSTRACT_jpg0000.JPG

FM5 – Intercarpal kinematics after open surgical treatment for perilunate injuries

Mathias Häfeli[1], Julia Felsbourg[2], Janina Riederer[1], Johann Dobbe[2], Geert Streekstra[2] ([1]Kantonsspital Graubünden, Chur; [2]UMC, Amsterdam, NL)

Introduction: Perilunate dislocations (PLD) and fracture dislocations (PLFD) lead to a disruption of intrinsic and extrinsic ligaments of the wrist. The treatment includes open or arthroscopically assisted reduction, temporary transfixation of the carpal joints with or without ligament repair, and fracture fixation. Timely treatment and restoration of carpal alignment, can lead to satisfying clinical outcomes. Nonetheless, some restriction of range of motion and grip strength can be expected. While there is some literature on intercarpal kinematic changes after scapho-lunate injuries and

scaphoid non-union, only little is known about these more complex injuries.
Aim: To investigate intercarpal scaphoid and triquetrum motion in relation to the lunate and to compare this to the healthy wrist in patients after surgical treatment for PLD or trans-scaphoid PLFD.
Material & Methods: 6 patients after PLD and 7 patients after trans-scaphoid PLFD underwent 4D-CT scans of the affected and the healthy wrist. During 4D-CT scanning, they actively performed a guided E-F and R-U motion. The difference in the radio-scaphoid (RSA) and radio-lunate angles (RLA) in neutral wrist position between affected and healthy side was measured. The smallest and largest distances in the SL-and the LT-joint within the motion cycle were determined as a measure of joint stability.
Results: Mean follow-up after surgery was 94months (26-166). The difference in the RSA and RLA in neutral position between affected and healthy side was 10.1° (2.9°-26.7°) and 8.2° (0.9°-25.2°). There was no statistically significant difference between PLD and PLFD group. Scaphoid sagittal plane rotation during E-F showed a similar pattern in the affected and healthy wrist but the differences in the other planes were larger. Axial plane scaphoid translation during E-F showed small differences while they were bigger in the other planes. The motion patterns during R-U by trend showed larger differences than during E-F. The motion patterns of rotation and translation of the triquetrum were close to normal in most cases. The maximal SL-distance during E-F and R-U was larger in the affected side (p=0.033). No differences were found for the LT-distance and between PLD and PLFD groups.
Conclusions: The intercarpal motion pattern for the SL- and LT-joints was quite similar in the healthy and the affected wrists. This indicates good restoration of the intrinsic carpal ligaments even though the SL-joint showed some widening.

FM6 – Simple Excision for Managing Proximal Pole Scaphoid Nonunion

Ana Scott-Tennent[1], Alejandro Lluch Bergada[1], Mireia Esplugas Mimó[1], Maria Larrea Zabalo[1], Ignacio Esteban[2], Guillem Salvà Coll[3] ([1]Kaplan, Barcelona ES; [2]Vall Hebron, Barcelona ES; [3]IBACMA, Mallorca ES)

Purpose: Due to the biological, anatomical, and biomechanical characteristics of the scaphoid, treating proximal pole nonunion remains challenging. The location of the nonunion (proximal or distal to the dorsal apex) may influence its natural history. Based on this concept, patients with a proximal pole nonunion located proximal to the dorsal apex and maintaining an intact insertion of the dorsal scapholunate ligament (DSLL) in the distal fragment of the scaphoid may benefit from simple excision of the proximal pole. This study evaluates the clinical and functional outcomes of this treatment approach.
Methods: A retrospective review was conducted on 11 patients who underwent proximal pole simple excision for proximal pole scaphoid nonunion. Postoperative outcomes were assessed using pain (VAS), Patient-Rated Wrist Evaluation (PRWE), Patient-Specific Functional Scale (PSFS), and EQ-5D. Patient satisfaction and return to work rates were also analyzed.
Results: Postoperative pain, PRWE, PSFS, and EQ-5D scores improved after surgery. 10/11 patients were highly satisfied with the procedure. 10/11 returned to their previous occupational activities. 4 patients reported dorsoradial discomfort, but only one required surgical revision for radial styloidectomy. No radiological progression to a scaphoid nonunion advanced collapse (SNAC) pattern or other complications were observed.
Conclusions: These findings support that proximal pole simple excision is a viable and relatively simple treatment for proximal pole scaphoid nonunion when the proximal fragment is non-viable and a competent DSSL remains inserted in the distal fragment.

FM7 – 13 SEVEN YEARS EXPERIENCE OF SCAPHOCAPITATE ARTHODESIS WITHOUT JOINT PREPARATION

Stefano Lucchina[1], Agnese Ferriroli[2], Nora Huber[3] ([1]Surgical Department, Hand Unit EOC, Locarno's Regional Hospital, Locarno; [2]Healthcare Vocational center CPS-MT, Lugano; [3]Locarno Hand Center, Locarno)

PURPOSE
To assess the effect of scaphocapitate arthrodesis (SCA) on grip strength and wrist motion for patients with advanced stages of Kienbock disesase (KD) or avascular necrosis of the proximal pole of the scaphoid (AVNPPS) without joint preparation.
METHODS
A retrospective review was conducted of patients with advanced stages of KD (stage IIIB according to Lichtman classification) or avascular necrosis of the proximal pole of the scaphoid with a minimum of 1 year clinical follow-up. Outcome measures included preoperative and postoperative pain, range of motion, grip strength, complications, additional surgery, radiographic changes and the modified Mayo wrist score.
RESULTS
Twenty-two patients (21 males and 1 female) with a mean age of 34 years (range, 16-54 y) at the time of the SCA were included in the study. The mean follow-up period was 101 months (range 11-171 mo). The ave AROM of the wrist was 92.6°. The TAM ratio and Jamar ratio compared to the contralateral were 66.6% and 79.4% respectively. The Modified Mayo wrist scores were mostly fair (50%) being good and poor in 30% and 20% of cases respectively. All patients returned to regular employement. The ave time out of work was 4.6 months (range 2-15 mo.). Most patients had a marked improvement of the wrist pain that passed from 7.9 to 1.8 at the VAS-score. Neither progressive radiographic carpal collapse and ulnar traslocation of the carpus in case of KD occurred nor signs of SNAC wrist of panarthritis occurred. In 50% of cases a bone resorption in the capitate was detectable but It was not associated with the time of follow-up and with post-operative pain. One case of hardware malposition required a conversion to total wrist joint fusion.
SUMMARY
SCA resulted in clinical improvement in cases of advanced stages of KD and AVNPPS in medium-term

follow-up even without preparation of the SC joint. No hardware related complications were observed, except in one case. SCA represents a valid salvage procedure in cases of advanced KD or AVNPPS.

FM8 – Outcomes of Proximal Row Carpectomy and STT Arthrodesis in Kienböck's Disease: A Meta-Analysis

Carl Flamin Meuth[1], Mathias Häfeli[1] ([1]Kantonsspital Graubünden, Chur)

Introduction: Kienböck's being a rare disorder, studies are underpowered to compare Proximal Row Carpectomy (PRC), Scapho-Trapezio-Trapezoid Arthrodesis (STTA), and Scapho-Capitate Arthrodesis (SCA). Complementing a recent meta-analysis focused on SCA (Bouri 2023), a comparison of clinical outcomes of PRC and STTA would thus be most desirable for surgeons and patients.
Methods: We conducted a systematic review and meta-analysis in accordance with PRISMA guidelines. PubMed and previous unsystematic reviews were searched for peer-reviewed publications until April 2025. We included patients with Kienböck's who had undergone PRC or STTA, with no restrictions on date, language, or design. We excluded inseparable etiologies or therapies, and single case reports. Primary outcomes were pre- and post-operative pain on any scale, arc of motion, and dynamometric grip strength. Secondary outcomes were functional scores (DASH, Mayo Wrist) and radiographic measurements. Individual participant data were used where possible. Cochrane's Review Manager calculated effect sizes via Weighted Mean Differences (WMD) and 95% Confidence Intervals (CI).
Results: Of 42, in part poor reports on 734 wrists only 21 reports on 312 wrists could be included. PRC significantly relieved pain (WMD 3.4, 95% CI 1.7 to 5.2, n = 69 wrists), improved extension by 14° (95% CI 3 to 24, n = 66) and non-significantly combined extension/flexion by 12° (95% CI –5 to 29, n = 115). It also increased grip strength (WMD 0.8, 95% CI 0.3 to 1.4, n = 80). STTA significantly relieved pain (WMD 4.9, 95% CI 1.3 to 8.4, n = 49), diminished radial/ulnar deviation by 11° (95% CI 8 to 14, n = 66) without impact on extension/flexion. It further increased grip strength (WMD 0.8, 95% CI 0.2 to 1.4, n = 95). Functional scores improved consistently. STTA affected most of the radiographic measurements.
Conclusions: This is the first meta-analysis to investigate PRC and STTA in Kienböck's disease. Both of them are effective in alleviating pain and strengthening grip. PRC is able to obtain more active range of motion. The low-level evidence (IV) is currently due to mostly retrospective case series. Authors are encouraged to submit more usable data to corroborate our preliminary results.
Disclosures:
Grants/sponsoring: None.
Conflicts of interest: None.
Informed consent/ethical review: Not applicable.
Submission elsewhere: None.

FM9 – The inside-out Volar Midcarpal Direct Scaphoid portal: Anatomical study and technical recommendations

maria Larrea[1], Mireia Esplugas Mireia Esplugas[1], Alex Lluch Alex Lluch[1], Ana Scott-Tennentt Ana Scott-Tennent[1], Ana Carreño Ana Carreño[2] ([1]Kaplan, Barcelona ES; [2]Clinic, Barcelona ES)

Introduction / Objective:
Arthroscopic treatment of mid-proximal scaphoid nonunions can be technically challenging due to limited access and difficulty in thorough debridement. This study aims to describe a safe, inside-out, volar midcarpal portal that provides direct access to these lesions: the Volar Midcarpal Direct Scaphoid portal (VMDSc).
Material and Methods:
Ten fresh-frozen cadaveric upper limbs were used. A simulated mid-proximal scaphoid fracture was created in each specimen. The VMDSc portal was then established in an inside-out manner. Finally, the volar wrist area was dissected to identify adjacent anatomical structures and measure their distances from the portal's exit path.
Results:
In the first four specimens, the guidewire pierced the flexor carpi radialis (FCR) tendon; in the remaining six, it exited radial to it. The cutaneous exit point was located on average 8.5 mm from the radial artery and 1.0 mm from its superficial palmar branch. The median nerve was an average of 7.0 mm away, and its palmar cutaneous branch 6.0 mm. The dorsal sensory branch of the radial nerve was located 10.5 mm from the portal exit point.
Discussion and Conclusions:
To reduce the risk of neurovascular injury, we recommend that the VMDSc portal exit the joint at the radial border of the radioscaphocapitate ligament, blindly oriented toward the FCR tendon. A 1 cm skin incision between the wrist creases at the radial margin of the FCR tendon provides safe external access. In combination with the radial dorsal midcarpal portal for visualization, the VMDSc portal enables effective debridement, grafting, and anatomical reduction of mid-proximal scaphoid nonunions or fractures. We consider this portal a safe and valuable tool that facilitates 360° arthroscopic management of scaphoid pathology.

FM10 – Arthroscopic Reconstruction of Scaphoid Nonunion: Insights from 40 Cases

Dominique Nellie Merky[1], Nadja Grob[1], Lena Dietrich[1], Esther Vögelin[1] ([1]Inselspital Bern, Bern)

Introduction: Scaphoid nonunions remain a common and challenging condition in hand surgery. With the advent of arthroscopy, bone graft reconstruction can now be performed using a minimally invasive, arthroscopically assisted technique. This study presents a series of 40 arthroscopically treated scaphoid nonunions, highlighting its adventage as a minimally invasive technique with excellent outcomes and potential for ambulatory implementation.
Material and Methods: We retrospectively evaluated 40 patients (on average 30 yeras, age range: 12- 58 years)

treated with an arthroscopic reconstruction of a scaphoid nonunion at our institution. All surgeries were performed by the same surgical team. Follow-up ranged from 2 months to 2 years. The technique included arthroscopic debridement, bone grafting, and internal fixation, using one or two headless compression screws. Cases were assessed clinically and radiologically, focusing on union rates, correction of deformity, surgical time, and complications.
Results: Union was achieved in 38 of 40 cases (95%). In the two remaining cases, the proximal pole was significantly sclerotic both pre- and intraoperatively. Despite radiographic signs of persistent nonunion, both patients remained asymptomatic postoperatively. Importantly, no humpback deformities were observed in any case. Surgical time was significantly reduced compared to open techniques, and no conversions to open surgery were necessary. No infections or neurovascular injuries occurred.
Discussion and Conclusion: Arthroscopic reconstruction of scaphoid nonunions offers a safe, effective, and minimally invasive alternative to open procedures. The technique preserves soft tissues, reduces operative time, and delivers excellent anatomical and functional outcomes. Even in cases where radiologic healing is incomplete, the clinical results can be satisfying. Given its low morbidity and efficiency, this technique is ideally suited for ambulatory surgical settings—should future healthcare frameworks allow for it. Based on our results, we strongly recommend this approach as a standard option for treating scaphoid nonunions.

FM11 – Short- to mid-term results of the ANAFAB reconstruction for scapholunate instability

Katharina Richetti[1], Carl Flamin Meuth[1], Mathias Häfeli[1] ([1]Kantonsspital Graubünden, Chur)

Introduction
Delayed diagnosis of scapholunate (SL) ligament injuries limits therapeutic options and often prevents direct ligament repair, requiring ligament reconstruction. The anatomical front and back (ANAFAB) procedure for SL instability proposed by Sandow and Fisher combines the reconstruction of the scaphotrapezium (ST), dorsal scapholunate (SL), and long radiolunate (LRL) ligaments addressing several important parts of the SL complex.
Methods
We conducted a single-center, retrospective trial including all patients treated for SL instability with the ANAFAB procedure at our clinic. No exclusion criteria were applied. Procedures were performed by 3 different surgeons with level 5 expertise.
We reviewed demographic data, pre- and postoperative (latest follow-up) range of motion (ROM), grip and pinch strength. We measured SL distance, scapholunate, radiolunate, and radioscaphoid angle (SL, RL, RS), carpal height and ulnar translation on standard radiographs. Patient-reported outcome measures (PROMs) were analysed if available.
Results
Between 2019 and 2025, 8 patients underwent the ANAFAB procedure for chronic SL instability. 1 patient had prior failed ligament repair. 1 had additional adaptive carpal instability from radial malunion and underwent corrective osteotomy in the same surgery. Male:female ratio was 6:2, median age at time of surgery 42.5 years (range 34 – 56), follow-up 24 months (3 – 55).
Preoperative E/F was 60/60 (30/40 – 70/80, n = 5), R/U 15/25 (10/10 – 35/40), P/S 90/85 (60/75 – 90/95); grip strength was 27.5 kp (21 – 36, n = 4); SL distance 3.4 mm (1.8 – 4, n = 7); pain on a 10-point VAS (n = 3) was 4 at rest (1 – 4), 6 under load (6 – 8).
Postoperative E/F was 61/45 (40/20 – 80/60, n = 6), R/U 17.5/30 (5/20 – 20/35), P/S 77.5/89 (60/70 – 90/100); grip strength was 36 kp (10 – 55, n = 7); SL distance 3.5 mm (2 – 4, n = 7); pain on VAS (n = 3) 1 at rest (0 – 3), 1 under load (1 – 6). 7 out of 8 patients returned to previous work.
Conclusion
In our small cohort, the ANAFAB procedure was effective in reducing pain allowing patients to return to daily activities and work. Although radiological results were not always satisfactory and some flexion was lost, we can expect preserved extension, improved strength and high patient satisfaction. Therefore, this technique currently remains our treatment of choice in these cases.
Disclosures
Grants/sponsoring: none
Conflicts of interest: none
Informed consent: obtained
Submission elsewhere: none

Freie Mitteilungen / Communications libres II:

FM12 – Clinical Results of Motor Nerve Transfer from a Branch of the Triceps to the Axillary Nerve.

Emmanuelle Richard[1] ([1]CHU de Montpellier, Montpellier FR)

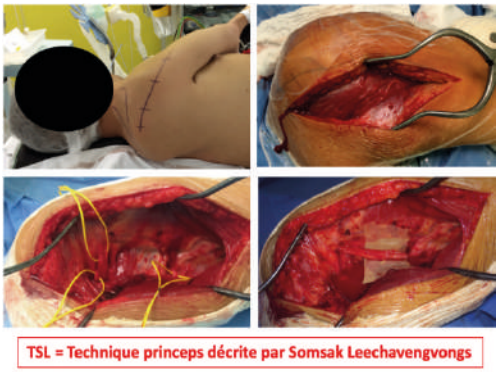
Introduction :
L'objectif de ce travail était d'évaluer les résultats cliniques et facteurs pronostiques de 12 ans d'expérience du transfert nerveux de la longue portion du triceps sur le nerf axillaire (TSL).
Matériel et Méthodes :
Cette étude rétrospective monocentrique, évaluait les patients opérés d'un TSL (2008-2019) avec un recul minimum de 18 mois. Les résultats étaient évalués globalement puis en sous-groupe soit TSL isolé (TSLi) contre TSL + autre transfert (TSL+). Les critère de jugement principal était l'échelle du test BMRC, les critères de jugement secondaies étaient la mesure des mobilités de l'épaule et un test isocinétique de l'abduction. Un deltoïde moyen (DM) DM M3 ou plus sur l'échelle BMRC témoignait d'une récupération.
Résultats :
Trente-six patients étaient inclus avec un recul moyen de 47 ±4 mois, âgés de 28 ans (15-68) et opérés à 8 mois post-traumatique (4-28). On retrouvait un Deltoïde supérieur ou égal à M3 pour 72% de deltoïdes antérieurs, 75% de moyens et postérieurs. Les mobilités augmentées étaient l'élévation antérieure et l'abduction (+35 et +55°, p=0,003). Le pic de couple était

significativement diminué en concentrique par rapport au côté sain de -30% à 60°/s, de -31% à 180°/s, et de -26% en excentrique à 30°/s (p<0,001). Les résultats en force et mobilités étaient supérieurs pour le groupe TSLi. Les facteurs pronostiques significatifs étaient : TSL + autre transfert (p=0,007), l'âge (p=0,03), un triceps et un nerf suprascapulaire (NSS) déficitaires préopératoire (p=0,005).

Conclusion :

Le TSL procure une nette amélioration de la force et de la mobilité de manière fiable et reproductible. La force procurée par ce transfert atteignait en moyenne 70% du côté sain en isocinétisme. Ces résultats étaient nettement supérieurs lors des transferts isolés chez les patients jeunes.

Mesure par test isocinétique de la force d'abduction de l'épaule après transfert nerveux moteur



Technique chirurgicale princips utilisée selon Somsak Leechavengvongs

FM13 – Clinical Evaluation of the Morbidity of Motor Nerve Transfer from the Radial Nerve to the Axillary Nerve.

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Introduction :

La morbidité du transfert de la longue portion du triceps (LPT) sur le nerf axillaire (NA) selon Somasak Leechavengvongs (TSL) est rapportée comme négligeable mais n'est pas l'objet de mesure objective dans la littérature. Nous en avons évalué la morbidité sur la force par un protocole standardisé et reproductible.

Matériel et Méthodes :

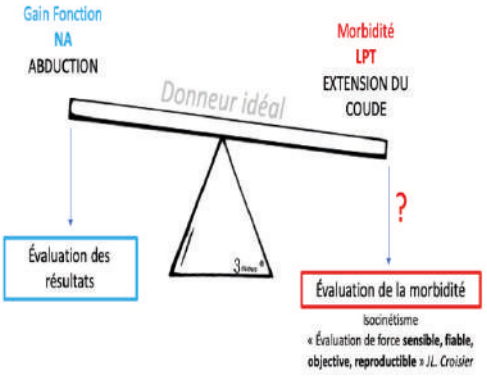
Par cette étude rétrospective monocentrique, 38 patients opérés d'un TSL entre 2008 et 2020 avec un triceps BMRC M5 préopératoire étaient éligibles. La force en extension du coude était évaluée par questionnaire, test BMRC, et isocinétisme de 90 à 0° en concentrique à 60 - 180°/s et en excentrique à 30°/s.

Résultats :

Vingt patients d'âge moyen de 25 ans (15 - 48) étaient volontaires pour une évaluation. Le recul était de 58 mois (6 -174). L'amyotrophie était visible pour 15/20 patients (75%), 7/20 (35%) avaient des contractures sur le triceps, et 12/20 (60%) une fatigabilité à l'exercice. Neuf triceps étaient M4 (11%) et 11 M5 (55%) au BMRC. La force en concentrique à 60, 180°/s et en excentrique à 30°/s était diminuée (respectivement -16,9 Nm, -14,8 Nm, et -16,3 Nm, p<0,001) soit -24%, -23% et -23% du membre sain. Les mesures objectives et subjectives étaient discordantes.

Conclusion :

La morbidité du TSL sur la force en extension du triceps se traduit par une diminution de force à M4 pour 11% des patients et -23% de force moyenne par rapport au côté sain en isocinétisme de manière homogène sur les différentes capacités du muscle. Cette morbidité, bien que non négligeable, ne semble pas avoir de conséquences à l'évaluation subjective.



Discordance entre la mesure des résultats et l'étude de la morbidité des transferts nerveux moteurs dans la littérature

Évaluation clinique **Objective de l'extension du coude par isocinétisme**

Mesure du pic de couple (Nm)
&
Coefficient variation (%)

Protocole de mesure standardisée de la force du muscle triceps par test isocinétique

FM14 – Nerve transfer of teres minor motor branch to long head of triceps in C6–T1 brachial plexus palsy

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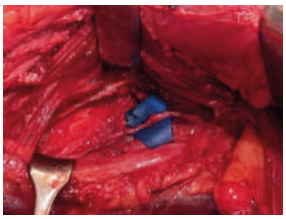
Introduction:
C6-T1 brachial plexus palsy often results in the loss of elbow extension due to triceps palsy. Traditional methods, like posterior deltoid transfer using a fascia lata graft have limitations, particularly when performed after six months after the injury. The nerve transfer of the teres minor motor branch to the long head of the triceps muscle, first described by Bertelli et al. in 2011, is an innovative and underexplored alternative. This case assesses its feasibility and effectiveness to restore elbow extension in lower brachial plexus injuries.
Method:
A 22-year-old male with a partial right brachial plexus injury (C6-T1) originating from a motorcycle accident. The clinical and radiological examination using MRI confirmed C8-T1 root avulsion and complete palsy of the hand and the elbow. Six months after injury, a nerve transfer from the teres minor muscle to the long head of the triceps muscle was performed. The diameter match between the motor branches of the teres minor and the long head of the triceps was adequate. Concomitantly, we conducted the transfer of the 3rd, 4th, and 5th intercostal nerves to the biceps branch of the musculocutaneous nerve. Rehabilitation followed with clinical evaluations at 1, 3, 6 and 12 months.
Results:
At 12 months, active elbow flexion reached 130 degrees with M3+ strength, whereas active extension was complete with M3+ strength. Elastography showed a significant increase in the shear wave of both the long head of the triceps and the biceps in active motion, correlating with functional restoration.
Conclusions:
This case demonstrates that nerve transfer from the teres minor motor branch to the motor branch of the long head of the triceps is an effective method to restore elbow extension in lower brachial plexus injuries. The technique described provides a physiological alternative, particularly if done within six months post-injury. The matching nerve diameter between the teres minor and long head of the triceps support the functional viability of this technique. This type of nerve transfer seems a promising technique to improve upper limb function after traumatic plexus injuries and offers a novel solution.



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FM15 – Limitations of the Distal AIN-to-Ulnar Motor Branch Nerve Transfer for Pinch Recovery: A Case Series

Olga Politikou[1], Bong-Sung Kim[1], Simon Roner[1], Pietro Giovanoli[1] ([1]University Hospital Zurich, Zürich)

Background:
The distal anterior interosseous nerve (AIN) to ulnar motor branch transfer, as described by McKinnon, is widely adopted for intrinsic muscle reinnervation following high ulnar nerve injury. While it offers a short regeneration distance, its effectiveness in restoring full pinch function remains under debate. This study critically evaluates functional outcomes in a series of patients who underwent this transfer.
Methods:
Eight patients with ulnar nerve injuries proximal to the upper third of the forearm underwent distal nerve transfer of the AIN branch to pronator quadratus (PQ) to the ulnar motor branch at wrist level, within a maximum of 9 months post-injury. Clinical follow-up included assessment of clawing, finger abduction/adduction strength (MRC grading), key pinch strength, and presence of Froment's sign.
Results:
At 15-month follow-up finger abduction and adduction recovered to M4 in all but one patient (M3), and mild clawing was corrected in all cases. However, subterminal key pinch strength averaged only 0.8 kg, and Froment's sign remained positive in six of eight patients. No donor site morbidity was observed.
Discussion:
Recovery of intrinsic function indicates that the nerve transfer effectively reached the correct ulnar motor fascicles. However, consistently poor reinnervation of the first dorsal interosseous suggests it may be the least likely to receive sufficient regenerating axons. This contrasts with direct nerve repairs at the wrist, which appear to deliver a higher axonal load. Our findings challenge the assumption that this transfer alone can restore functional pinch and suggest that combining it

with a more distal, selective motor transfer—such as opponens to first dorsal interosseous—may be necessary for optimal outcomes.

Conclusion:

The distal AIN-to-ulnar motor branch transfer restores intrinsic tone and basic function but falls short in reanimating the first dorsal interosseous and enabling effective pinch. Selective augmentation should be considered to improve results in high ulnar nerve injuries.

FM16 – Recurrent PIN Palsy Following Neuralgic Amyotrophy Treated with Decompression and Nerve Transfer

Sören Könneker[1], Victor Sander[1], Géraldine Lautenbach[1], Simon Roner[1], Olga Politikou[1] ([1]University Hospital Zurich, Zürich)

Background:

Isolated palsy of the distal posterior interosseous nerve (PIN) is rare and may present spontaneously without clear etiology. Recurrence after initial recovery raises suspicion of neuralgic amyotrophy (Parsonage-Turner syndrome), particularly in the context of a post-infectious event. We present a unique case of recurrent PIN palsy managed successfully with decompression and selective nerve transfer.

Case Presentation:

A young woman presented with spontaneous paralysis of thumb extension (IP joint), retroversion, and abduction. Sonography showed no compressive pathology. Electroneuromyography (ENMG) demonstrated acute denervation of EPL, EPB, and APL, with pathological neurography of the PIN distal to the supinator canal. After 8 months of conservative treatment with hand therapy and no functional improvement, surgical decompression of the PIN in the supinator tunnel was performed. First signs of reinnervation appeared at 6 weeks, with full thumb ROM at 3 months.

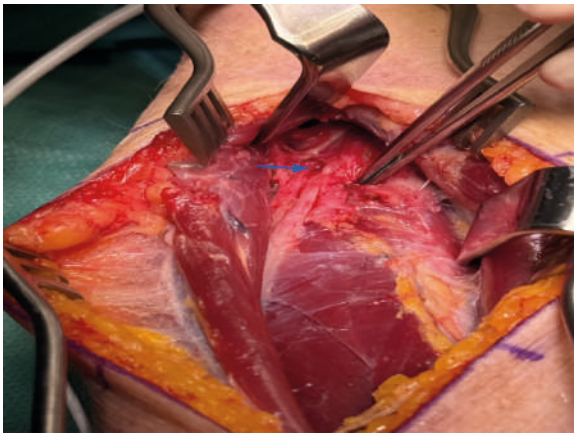
One year later, following a flu-like illness, the patient developed progressive recurrence of thumb extension and abduction weakness, leading to complete paralysis within 6 months. Hand therapy failed. Sonography suggested possible compression, prompting surgical re-exploration. Intraoperatively, an hourglass deformity of the PIN distal to the supinator canal was identified. Given the nerve's poor appearance and uncertain prognosis, a distal nerve transfer was performed: the distal anterior interosseous nerve (AIN) was coapted to the distal PIN through a dorsal approach via membrana interossea dissection, selectively reinnervating APL, EPB, and EPL.

Results:

At 9 months postoperatively, the patient achieved full extension of the thumb at the CMC, MCP, and IP joints. Strength remains at M3. No complications were observed.

Conclusion:

This case illustrates the potential for recurrence of spontaneous distal PIN palsy due to neuralgic amyotrophy, supported by post-viral onset and hourglass deformity findings. A combination of decompression and selective distal nerve transfers provided a favorable functional outcome and represents a viable surgical strategy in recurrent cases with limited regenerative potential.



Hourglass PIN.png

FM17 – Outcomes of traumatic brachial plexus injury in patients >50 years

Elalim Zen Vukovic[1], Esther Vögelin[1] ([1]Inselspital, Bern)

Introduction

Brachial plexus injuries (BPI) are associated with severe functional impairments of the affected limb, despite the availability of different treatment options. The incidence of these injuries is increasing among elderly individuals, likely due to a more active aging population; however, the underlying biology often remains unforgiving. The objective of this study was to assess which treatment strategies are most appropriate for patients aged >50 years with traumatic BPI.

Materials and Methods

In this retrospective analysis we evaluated patient data extracted from the electronical clinical records. We included consecutive patients with a traumatic BPI, aged >50 years, that were treated at our institution either operatively or conservatively. All cases exist in the period from September 2007 to January 2024. Patients with BPI other than trauma and < 50 years were excluded.

Results

The study included 10 patients, of which 9 were males. with a median age at time of injury of 63 (range 52-76 years). In 8 cases the BPI was due to polytrauma. This included 3 motorbike accidents, 2 ski injuries, 1 bike accident, 1 car accident and 1 non specified polytrauma. The remaining 2 cases were isolated traumatic BPI due to either fall or bike injury. C5-C6 segments were involved in 6 cases, 2 of which also affecting C7, 1 patient had distal BPI (C7-Th1), 3 patients a complete BPI. The right side was affected in 60% cases. Operative treatment was performed in 9 cases, median time from injury to first surgery 31.4 weeks (range 17-42.4). Of the 9 cases, 6 nerve transfers, 2 nerve reconstructions and one neurolysis were performed. Seven of these patients underwent a 2nd operation with a muscle transfer in 5 cases, neurolysis in 1 case and implantation of a pain electrode in 1 case. Two patients underwent a third

surgery - 1 tendon transfer and 1 implantation of pain electrode. 50% patients suffered from persistent pain at last follow up. Only one patient benefited from the chosen surgical treatment. Nevertheless, 70% patients were satisfied and perform daily life activities with aids and trick movements to overcome the BPI consequences.

Discussion

Traumatic BPI in the elderly population is a challenging condition and the available operative options may not be of benefit for these patients. Despite the rather moderate results, an individual decision for surgery according to the needs and not just the age should be evaluated.

FM18 – Key pinch restoration after high ulnar nerve injuries using Bertelli nerve transfer: A case series

Camilla Bo[1], Fabrizio Fiumedinisi[1], Jan Plock[1], Florian Früh[1] ([1]Kantonspital Aarau, Aarau)

Introduction

High ulnar nerve injury commonly leads to severe intrinsic hand muscle weakness and sensory deficits in the ulnar digits. In 2018, Bertelli described a novel nerve transfer technique utilizing the motor branch of the opponens pollicis (OPB) to reinnervate the terminal division of the deep branch of the ulnar nerve (TDDBUN) with the goal of restoring key pinch. In this case series we report our preliminary experience with this technique in four patients who presented with intrinsic denervation following high ulnar nerve injury.

Methods

Four patients with confirmed proximal ulnar nerve injury were treated in our center, three of them were due to iatrogenic nerve injury following upper extremity surgery. Diagnosis was made by nerve imaging, electroneuromyography, and clinical examination, demonstrating loss of intrinsic function with a positive Froment sign and claw hand deformity. All patients underwent nerve transfer surgery in which, among others, the OPB motor branch was connected to the TDDBUN in the first commissure. Mean postoperative follow-up for all patients was 6 (2-12) months.

Results

Three patients were operated in 2024 and one in early 2025. Follow-up evaluations for the first patients demonstrated early functional recovery, with increasing function of the 1st interosseus and adductor pollicis muscles. Key pinch strength reached 47% (**44**-50) compared to the contralateral side in 3 patients at a mean follow up of 8 (3-12) months. The fourth patient was recently seen for her first follow-up 6 weeks after surgery and did not yet show measurable improvement. Notably, all patients reported subjective improvement in pain symptoms. Thumb opposition was strong and reached Kappandji 10 in all patients.

Conclusion

While longer follow-up and larger case series are required to draw definitive conclusions, our initial findings support the efficacy of the OPB-to-TDDBUN nerve transfer to restore key pinch function following high ulnar nerve injuries without significant donor morbidity.

FM19 – Nerve Transfers for Radial Nerve Palsy: Clinical Results from a Prospective Case Series

Olga Politikou[1], Victor Sander[1], Christina Wanivenhaus[1], Simon Roner[1], Pietro Giovanoli[1] ([1]University Hospital Zurich, Zurich)

Background:

Tendon transfers are the traditional approach for restoring function in radial nerve palsy, but they disrupt native biomechanics and limit functional refinement. Nerve transfers provide a physiological alternative that preserves joint mechanics and enables selective muscle reinnervation. This study presents the clinical outcomes of nerve transfers in patients with radial nerve palsy.

Methods:

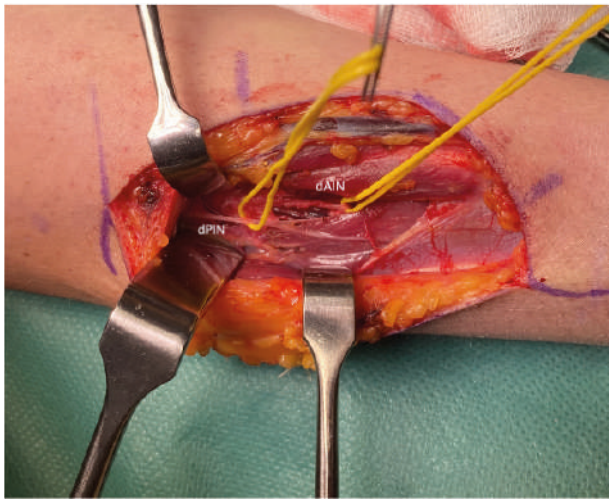
A prospective case series included six patients (aged 25–52 years) with radial nerve palsy, presenting 3 to 8 months post-injury. The following nerve transfers were performed: (1) distal branch of the pronator teres to the extensor carpi radialis brevis (ECRB), (2) branch to the flexor carpi radialis (FCR) to the posterior interosseous nerve (PIN), and (3) distal anterior interosseous nerve (AIN) branch to the pronator quadratus to the distal PIN for selective reinnervation of APL, EPB, and EPL. Patients were followed for 15 months. Outcome measures included wrist, finger and thumb extension MRC grading, range of motion (ROM), donor site morbidity, and complications.

Results:

All six patients regained active wrist extension, with a mean wrist extension of 62° and MRC grade 4 strength. Full finger extension with the wrist extended was achieved in all cases (MRC 4). Thumb extension at the CMC and IP joints was complete in all patients. At the MCP joint, three patients achieved full extension, while three showed an extension lag of 25°. No loss of donor function was observed; pronation and wrist flexion strength remained unchanged compared to preoperative status while no surgical complications occurred.

Conclusion:

Distal nerve transfers offer reliable restoration of wrist, finger, and thumb extension in radial nerve palsy, with high functional recovery and preservation of donor site strength. These preliminary results support nerve transfers as a safe and effective alternative to tendon-based reconstruction. The study is ongoing, and larger case series as well as controlled comparisons with outcomes following tendon transfers are needed to further validate these findings.



dAIN to dPIN.png

FM20 – The impact of upper limb spasticity-correcting surgery on everyday life: a mixed-methods study

Silvia Schibli[1], Karen Schmuck[1], Armin Pallaver[1]
([1]Schweizer Paraplegiker Zentrum, Nottwil)

Introduction
Spasticity has been shown to negatively influence quality of life by restricting arm function, hindering self-care, causing pain, pressure sores and arthrosis. Personal care is often difficult, time-consuming, painful and place a significant burden on caregivers.
Surgical interventions on the spastic upper limb aim to provide lasting correction of the deformities, thereby improving functional ability and facilitating activities of daily life such as hygiene and dressing.
The aim of this study was to evaluate the impact of upper limb spasticity-correcting surgery using a comprehensive mixed-methods approach to gain deeper insights into the personal experiences of both patients and caregivers.
Methods
Qualitative semi-structured interviews were conducted 2.8 years (range 1-6 years) after surgery with nine caregivers and six patients. In addition, quantitative data were collected preoperatively and at 6 and 12 months postoperatively. This included the Arm Activity Measure (ARMA) score, resting limb posture, active and passive range of motion (AROM and PROM) of shoulder, elbow, wrist, fingers, and the thumb, as well as the House Functional Classification, which assesses the level of functional use of the upper extremity.
Results
The ARMA score improved from 12 preoperatively to 4.8 at 12-months follow-up, while hand function assessed by House score increased from 0.8 (does not use) to 2.4 (faire passive assist). The resting posture improved across all assessed joints with elbow position improving from 110° to 43° flexion and wrist position from 47° flexion to 12° extension.
Qualitative data analysis corroborated these findings: both patients and caregivers reported easier personal care and dressing due to the improved limb position, as well as enhanced psychological well-being and satisfaction with the arm's appearance: the more natural and relaxed appearance of the limb helped patients feel more confident and accepted in social interactions.
Conclusion
All participants, both patients and caregivers, experienced improvements in their everyday lives after spasticity-correcting surgery. The improved posture not only influences function but also psychological factors, leading to improved quality of life.

Freie Mitteilungen / Communications libres III:

FM21 – What Can Patients Expect After Thumb CMC Arthroplasty? Personalized Predictions for Pain and Function

Michael Oyewale[1], Govert J. van der Gun[2], Ruud W. Selles[3], Elrozy R. Andrinopoulou[2], Daniel B. Herren[1], Harm Slijper[3], Miriam Marks[1] ([1]Schulthess Klinik, Zürich; [2]Erasmus MC, Rotterdam, NL; [3]Erasmus MC – University Medical Center, Rotterdam, NL)

Aim: To develop and validate two machine learning models for predicting pain and hand function one year after thumb carpometacarpal (CMC) joint implant arthroplasty.
Methods: We analyzed data from 377 patients who received a Touch® prosthesis (KeriMedical, Switzerland) between 2018 and 2024 and were prospectively documented in a clinical registry. Two models predicted pain during daily activities (Numeric Rating Scale [NRS], 0-10) and hand function (brief Michigan Hand Questionnaire [MHQ], 0-100) one year postoperatively. Extreme gradient boosting (XGBoost) was used with 23 clinical, radiographic, and patient-reported baseline variables. Models were trained with repeated cross-validation, tested on a held-out set, and evaluated using mean absolute error (MAE) and root mean squared error (RMSE). To quantify individual uncertainty, 80% prediction intervals (PI) were computed. SHAP (SHapley Additive exPlanations) values identified key predictors and their directional influence on outcomes. A dashboard was developed to visualize individual predictions along with prediction intervals and bootstrapped distributions.
Results: The pain model achieved a bootstrapped MAE of 1.49 (95% CI: 1.45-1.54) and RMSE 2.24 (95% CI: 2.15-2.32), with predictions typically within 1.5-2 points of observed pain scores on the 0-10 NRS. SHAP analysis showed that better baseline health (EQ-5D-5L and EQ-5D-VAS), greater belief in treatment success, younger age, stronger grip strength, and lower baseline pain levels predicted lower residual pain.
The function model reached a bootstrapped MAE of 12.44 (95% CI: 12.13–12.77) and RMSE of 17.27 (95% CI: 16.62–17.98). Patients with better baseline function (higher brief MHQ scores), stronger grip, better health (EQ-5D-5L), more thumb mobility, greater surgeon experience, and younger age were more likely to regain better hand function.
Conclusion: We present interpretable machine learning models for individualized one-year outcome predictions

after thumb CMC arthroplasty, including predictive uncertainty (Figure 1). These tools may support more realistic counseling and shared decision-making.
Funding: None
Conflicts of interest: Daniel B. Herren and Stephan Schindele have speaker contracts with KeriMedical. Other studies conducted at our clinic are funded by KeriMedical.

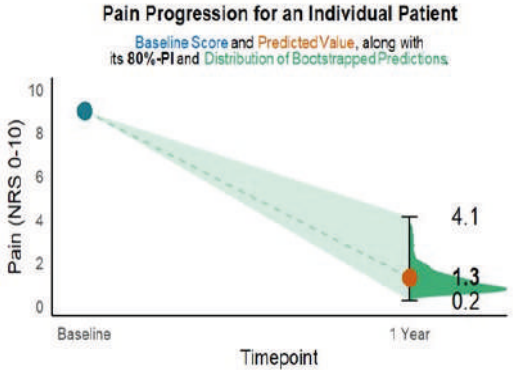


Figure. Predicted pain progression for an individual patient. The 1-year predicted pain was 1.3 (80% PI: 0.2–4.1) on a 0–10 NRS.

FM22 – Thumb CMC implant arthroplasty: Higher quality of life and lower costs than resection arthroplasty

Miriam Marks[1], Kei Mathis[1], Stephan Schindele[1], Daniel B. Herren[1] ([1]Schulthess Klinik, Zürich)

Aim: The aim was to perform a cost-utility analysis comparing thumb carpometacarpal (CMC) implant arthroplasty with resection-suspension-interposition arthroplasty (RSIA) during one year after surgery. We hypothesized that thumb CMC implant arthroplasty would be more cost-effective than RSIA, with an ICER below the Swiss threshold of CHF 100,000 per quality-adjusted life year (QALY).
Methods: In this prospective clinical trial, 80 working patients with thumb CMC osteoarthritis who underwent implant arthroplasty (Touch®) were included. Data were compared to 39 working patients from a previous study who received RSIA. Quality of life (EQ-5D-5L questionnaire), direct medical costs and productivity loss were measured for up to one year after surgery. The ICER was calculated to assess the costs per QALY. Sensitivity analyses were conducted for a 5-year extrapolation, including the higher risk of revision surgery for implant patients and outcomes for non-working patients.
Results: One year after surgery, the implant group had a significantly higher quality of life (0.89 vs. 0.85 QALYs) and lower total costs (CHF 24'372 vs. CHF 30'866) compared to RSIA. Despite CHF 2'397 higher medical costs, implant arthroplasty was associated with CHF 8'892 lower productivity costs (Figure 1). The resulting negative ICER indicates implant arthroplasty is more cost-effective, with ≥99% probability of being cost-effective, even accounting for higher revision risks and non-working patients.
Conclusion: Implant arthroplasty results in higher quality of life and lower overall costs than RSIA over one year. Despite higher direct medical costs, it is more cost-effective due to faster return to work and reduced productivity loss. Sensitivity analyses confirmed implant arthroplasty's cost-effectiveness over five years, even with higher revision risks and a larger proportion of non-working patients.

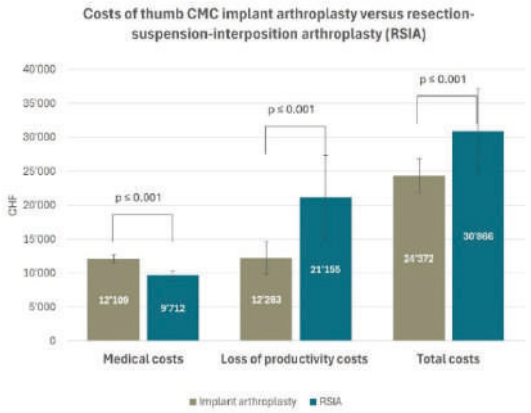


Figure 1: Direct medical, loss of productivity and total costs for implant and resection-suspension-interposition arthroplasty (RSIA). Mean values and 95% confidence intervals are shown.

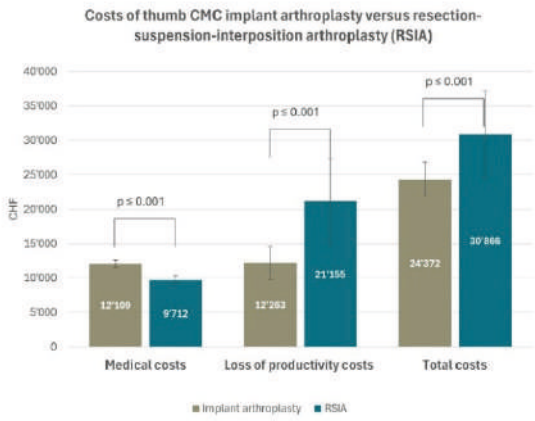


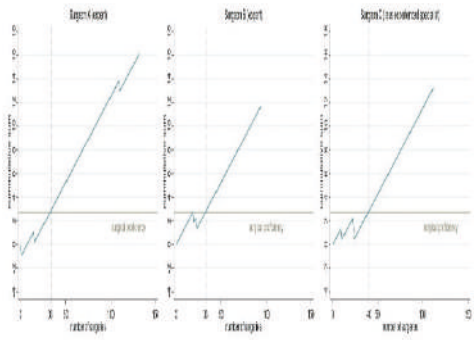
Figure 1: Direct medical, loss of productivity and total costs for implant and resection-suspension-interposition arthroplasty (RSIA). Mean values and 95% confidence intervals are shown.

FM23 – At least 33 cases are required to flatten the learning curve in thumb CMC implant arthroplasty

Vanessa Reischenböck[1], Kei Mathis[1], Miriam Marks[1], Stephan Schindele[1], Daniel B. Herren[1] ([1]Schulthess Klinik, Zürich)

Aim: The aim of this study was to (1) determine the learning curve for thumb carpometacarpal (CMC) implant arthroplasty and estimate the number of cases

required for proficiency; (2) assess whether surgical experience influences the number of cases required to reach proficiency and (3) compare 2-year outcomes and revision rates between patients treated before and after the learning curve plateau.
Methods: Data of 338 patients who received a Touch® prosthesis (KeriMedical) and who were prospectively documented in a registry were used. We included all operations performed by two highly experienced hand surgeons (A, B) and one less experienced specialist (C). The primary outcome measure was the number of surgeries required to achieve surgical proficiency, using the cumulative sum (CUSUM) method. In this method, surgery time and intraoperative radiographic exposure time are used as proxies for calculating the learning curve.
Results: Surgery and intraoperative radiographic exposure times decreased for all surgeons as the number of cases increased. The resulting learning curve showed that surgical proficiency was achieved at case 33 for surgeon A and B, and case 40 for surgeon C (Figure 1). Mean surgery times were 39±8min, 43±7min and 59±19 min, respectively, and radiographic exposure times were 25±19s, 57±25s and 97±46s. Two-year outcomes and revision rates were not worse for patients who underwent surgery before achieving proficiency. The most frequent reason for revision was cup loosening. This stems from various factors beyond the technical learning curve. With increasing experience, broader indications led to selecting more challenging cases with bone deficiency and difficult soft tissue conditions. This increases the risk of intraoperative complications and less favourable postoperative outcomes.
Conclusion: Our findings indicate a considerable learning curve for TMJ implant arthroplasty, with experienced surgeons achieving proficiency more quickly. Although outcomes before reaching the learning curve did not differ from those operated on later, we recommend comprehensive training when introducing this procedure and a high case volume to improve surgical skills.



CUSUM chart for surgeons A, B, and C. The y-axis represents the cumulative sum of successes and nonachievements for each surgeon.

FM24 – Thumb CMC implant arthroplasty: A safe and effective treatment for patients aged 80 and older

Vanessa Reischenböck[1], Miriam Marks[1], Kei Mathis[1], Stephan Schindele[1], Daniel B. Herren[1] ([1]Schulthess Klinik, Zürich)

Aim: The safety and efficacy of thumb carpometacarpal (CMC) implant arthroplasty in older patients remains uncertain, particularly due to the potential impact of osteoporosis on implant integration. The aim of this study was to investigate whether outcomes at one year post-surgery are comparable in patients over 80 years of age compared to those aged 60–70 years.
Methods: This prospective registry-based study included patients who underwent thumb CMC implant arthroplasty (Touch®, KeriMedical, Switzerland). The one-year outcomes of patients aged ≥80 years (older group) were compared to those of patients aged 60–70 years (younger group). The primary outcome was pain during daily activities, measured on a 0–10 Numeric Rating Scale. Secondary outcomes included the brief Michigan Hand Outcomes Questionnaire (brief MHQ, 0–100), key pinch strength, and complications. Differences between the two groups were analyzed using the Mann-Whitney U test.
Results: Eighteen patients aged 80–86 years and 175 patients aged 60–70 years were included. Preoperative pain scores were 6.9 (SD 2.1) for older and 7.1 (SD 1.8) for younger patients (p=0.88). At one year, pain decreased significantly to 1.3 (SD 1.8) in the older and 1.5 (SD 1.8) in the younger group, with no significant difference between the two groups (p=0.46, Figure 1). One-year brief MHQ scores were 80 (SD 20) for older patients and 86 (SD 17) for younger patients (p=0.27). Key pinch strength was 6.3kg (SD 2.2) in older and 6.7kg (SD 1.9) in younger patients (p=0.37). Intra- and postoperative complications such as trapezium fractures or implant loosening were absent in patients over 80 years.
Conclusion: No significant differences in pain, hand function, or key pinch strength were found between patients aged ≥80 and 60–70 years at one year, with no complications in the older group. Although the sample size was small, the results suggest that thumb CMC implant arthroplasty is a safe and effective treatment for patients over 80 years when surgical indications are met.

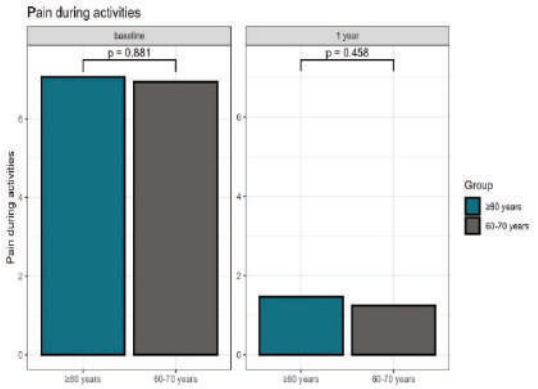


Figure 1: Pain during daily activities for patients over 80 years of age compared to those aged 60–70 years before surgery and one year after surgery. There were no significant differences between the groups.

FM25 – Comparison of Rehabilitation Time, Costs, and Sick Leave between CMC I Prosthesis and Trapeziectomy

Claudio Hebeisen[1], Urs Genewein[1] ([1]GZF Rheinfelden, Rheinfelden)

Introduction / Purpose of the Study
Trapeziectomy has long been the standard treatment for carpometacarpal I (CMC I) osteoarthritis. In recent years, joint prostheses have emerged as alternatives, potentially enabling faster recovery and earlier return to work. This study aimed to compare postoperative rehabilitation time, total treatment costs, and work absenteeism between prosthetic arthroplasty and trapeziectomy. A secondary objective was to evaluate overall cost-effectiveness, including indirect costs due to sick leave.

Materials and Methods
This retrospective single-center study included 213 patients who underwent prosthetic CMC I arthroplasty for primary osteoarthritis between January 2021 and December 2024. The mean age was 62 years, with an average follow-up of 18 months. Data collected included duration of sick leave, number of postoperative physiotherapy or occupational therapy sessions, direct treatment costs (surgery, implant, rehabilitation), and estimated indirect costs based on average daily wage. Results were compared to published data on trapeziectomy. Statistical analysis used the Mann–Whitney U test with $p < 0.05$.

Results
Patients with a prosthesis returned to work significantly earlier than those treated with trapeziectomy (Average: 48 vs. 123 days, $p < 0.001$). They also required fewer therapy sessions (Average: 9 Sessions vs. 35 Sessions, $p < 0.001$). Although direct costs were higher in the prosthesis group, the overall economic burden was lower due to shorter work absence.

Discussion and Conclusion
Prosthetic arthroplasty offers faster recovery and lower indirect costs compared to trapeziectomy, despite higher surgical expenses. These findings suggest a favorable cost-benefit profile for the prosthesis, particularly in working-age patients. Surgical decision-making should consider not only clinical but also socioeconomic factors.

Clinical Relevance
Choice of surgical technique impacts both patient outcomes and societal costs. A prosthesis may represent a valuable alternative in patients with high functional demands or early return-to-work goals.

FM26 – Scaphometacarpal impingement after trapeziectomy: is fusion the solution?

Armin Pallaver[1], Silvia Schibli[2], Urs Hug[3] ([1]Luzerner Kantonsspital; Schweizer Paraplegikerzentrum Nottwil, Luzern; [2]Kantonsspital Graubünden; Schweizer Paraplegikerzentrum Nottwil, Chur; [3]Luzerner Kantonsspital, Luzern)

Introduction
Scaphometacarpal impingement is one of the reasons for unsatisfying results after trapeziectomy. However, it remains unclear, why thumb subsidence after trapeziectomy occurs in some cases. A recent study recommended tendon-interposition and -suspension arthroplasty for revision in this situation, risking again instability and impingement. Other surgical options include implant arthroplasty and arthrodesis. We suppose that achieving stability with fusion of the first metacarpal base to the second metacarpal may be favorable in some cases.

Methods
Retrospective, multi-center case series of 8 cases undergoing fusion of the first to the second metacarpal since 2000. We reviewed surgical technique and follow-up with fusion or revision surgery. Patient satisfaction was rated as good, fair or poor according to the clinical records.

Results
Stable bony fusion was achieved in 6 cases at 3 months follow-up. Two cases needed revision arthrodesis with stable bony fusion at final follow-up. Bone graft from iliac crest was used in all cases, while fixation included k-wires, (cannulated) screws, plates or a combination of those.

Conclusion
Fusion of the base of the first to the second metacarpal bone should be considered in cases with failed revision suspension arthroplasty on either side or as initial revision surgery after failed trapeziectomy in patients with manual work. Temporary transfixation of the first to the second metacarpal shaft reduces the lever arm on the arthrodesis site, enhances stability and may promote fusion.

FM27 – Distal interosseous membrane reconstruction to treat distal radioulnar joint instability; 4 cases

Emmanuel Piguet[1], François-Gabriel Midon[2], Jean-Yves Beaulieu[1], Lionel Athlani[1] ([1]HUG, Genève; [2]Nancy, FR)

Introduction
Chronic distal radioulnar joint (DRUJ) instability impairs wrist kinematics, leading to a highly disabling condition and degenerative lesions. Numerous reconstructive techniques have been described either intra-articular, extra-articular or both. Recent literature has focused attention on the distal interosseous membrane (DIOM) and its contribution to DRUJ stability in all forearm position in addition to the TFCC.
Here, we describe a new ligament reconstruction of the

DIOM to treat chronic DRUJ instability and report the results of a series of four cases.
Material and methods
We operated four patients who had chronic post-traumatic DRUJ instability. Preoperative clinical evaluation confirmed the instability, associated with painful pronosupination and a grip strength weakness (48 to 60% compared to the contralateral side). Arthrogram excluded arthritis in the DRUJ and TFCC lesion.
We use a free palmaris longus (or extensor carpi radialis brevis slip) graft to reconstruct the DIOM and the DOB. The ligamentoplasty is located 15% of the length of the ulna from the ulnar head, midway between the radial and ulnar insertions of the DOB. The graft is passed through two tunnels, a bicortical posteroanterior ulnar tunnel and a 15° oblique transverse blind radial tunnel.
Results
All patients were reviewed one year after the surgery. DRUJ instability was systematically resolved. All patients were painless during pronosupination. Grip strength improved from 85 to 90% relative to the contralateral side. There was no difference in flexion–extension and pronation. Supination was reduced by 10 to 20°. All patients were able to resume working in the same occupation at a mean time of 4 months. Postoperative axial CT scans confirmed joint congruence restoration in pronation and supination.
Discussion
Longitudinal axis of the reconstruction mechanically provide the best possible support against posterior-anterior instability. We believe that having an exact graft length avoids overtensioning the graft and allows easier control over the tension of the reconstructed ligament. Using interference screw reinforces the strength of the ligamentoplasty.
Conclusion
This surgical reconstruction of the DOB may offer an alternative technique, allowing it to be purely extra-articular, thus reducing stiffening of the radiocarpal and ulnocarpal joints. It appears to be technically simple and effective procedure to contend posterior-anterior ulnar head instability.

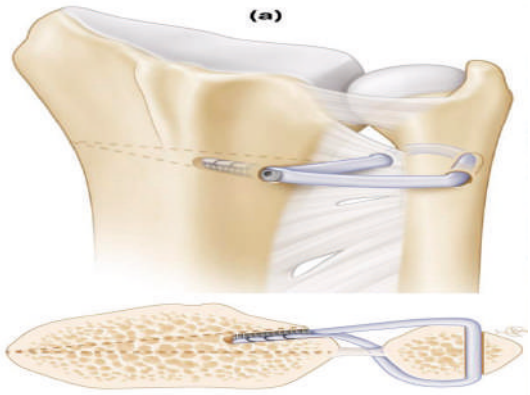


Schéma ligamento.png

schéma ligamentoplastie.jpg

FM28 – Palmar locked fracture dislocation of the distal radioulnar joint with delayed initial presentation

Giuseppe Broccoli[1] ([1]Kantonsspital Winterthur, Winterthur)

Introduction/Purpose of the study/Hypothesis
A palmar dislocation of the distal radioulnar joint (DRUJ), which is also fractured and misaligned locked, is a rare injury that can be overlooked at initial presentation. Based on current literature and a personal case, this rare injury is highlighted.

Material and method
This case report presents a 23-year-old man with a three-month-old, volar locked fracture dislocation of the DRUJ resulting from a fall down stairs, which was initially overlooked. A complex open reconstruction of the DRUJ was performed to restore the function of the injured forearm and wrist. Postoperatively, the patient was immobilized for several weeks using an upper arm cast and the patient received accompanying hand therapy.

Results
The patient's follow-up examination 12 months postoperatively showed pain at rest with a score of 0 (VAS 0–10), pain with load with a score of 1 (VAS 0–10), a relative grip strength compared to the unaffected side of 98%, a relative range of motion of the wrist compared to the uninjured side of 71%, a DASH score of 10 points, a Mayo Modified Wrist Score of 80 points as well as a Krimmer Wrist Score of 80 points. No complications occurred, and the patient was able to return to his original job and his martial arts activities.

Discussion and conclusion, clinical relevance
Persistent wrist movement limitations after trauma, even with a seemingly correct x-ray, may indicate a serious injury to the DRUJ. Careful planning of a complex reconstructive surgery and the necessary follow-up care should be undertaken to achieve a satisfactory outcome for patients with an initially overlooked DRUJ dislocation.

FM29 – 5 years of implanting Touch® CMC-I prosthesis - lessons learned

Carla Kellenberger[1], Léonie Huesler[1], Stefanie Schmitt[1], Urs Hug[1] ([1]Luzerner Kantonsspital, Luzern)

The operative treatment of thumb carpometacarpal osteoarthritis has recently undergone a paradigm shift due to excellent early results of CMC-I prosthesis. However, with limited long-term outcomes beyond 10 years and challenges faced by earlier implants generations, careful consideration of their indications remains essential. This study presents the experiences of a teaching hospital's hand surgery team over the first 5 years of implanting Touch® type CMC-I prosthesis, focusing on challenges and complications as "lessons learned".

In our clinic, all patients who received a CMC-I prosthesis from 2019 to 2025 were identified. 182 cases were reviewed, involving 134 women, 48 men (average age 62y, range: 40-80y). Indications inculuded rhizarthrosis stages 2 or 3. Procedures were mainly outpatient under axillary plexus anaesthesia. Surgical technique involved: dorsal access between EPL and EPB, dorsal capsule resection, circumferential release of the MC I base, removal of trapezial osteophytes and radiologically guided cup drilling. Most cases involved a conical cup and a 15° angled neck. Postoperative care included rigid splinting for a week, followed by standardised therapy with a Comfort Cool brace and mobilisation, and initiation of load-bearing after 6 weeks, if X-ray controls were unremarkable. Beyond strength and mobility measurements, perioperative and postoperative complications and challenges were recorded. The analysis focuses on "lessons learned" rather than classic CROMs.

Complications occurred in 25.2% (46/182) of the cases. Revision surgery was required in 9.3% (17 patients). Issues included trapezium fractures (3) and dislocations due to incorrect cup placement (5). 4 cases needed a repositioning, while 2 required conversion to RSI arthroplasty. Tendinitis was observed in 22 cases, degeneration of the STT joint in 6 and MCP joint in 3 cases, respectively. Other complications included heterotopic ossifications (3), implant failure including polyethylene fracture (1) and neuropathic pain (8). While most were managed conservatively, some required surgical revision such as a 1st extensor compartment release, MCP joint arthrodesis, reoperation or neurolysis.

Results from the first five years of implanting CMC-I prothesis align with existing literature. We highlight challenges and the surgeon's progression to guide less experienced colleagues in anticipating and avoiding issues or complications.

Freie Mitteilungen / Communications libres IV:

FM30 – Hand Reconstruction in Triphalangeal Thumb Polydactyly Syndrome

Daniel Weber[1], Marta Berchtold[2] ([1]Universität-Kinderspital Zürich, Zürich; [2]Universitäts-Kinderspital Zürich, Zürich)

Introduction
Triphalangeal thumb polydactyly syndrome (TTPS) is a rare congenital condition that is typically associated with a thumb duplication involving a triphalangeal thumb and additional anomalies. While listed under OMIM 174500, it is associated with heterozygous mutations on chromosome 7q36 and shows significant phenotypic variability. These complex deformities pose distinct surgical challenges, and treatment guidelines remain poorly defined. This study aims to propose surgical principles based on a case series.

Methods
We retrospectively reviewed eight patients (13 hands) treated between 2014 and 2024. According to the Rotterdam classification, we identified one Wassel IV C, five VI A, four VI B, and one VI C thumbs.

Results:
Seven radial and five ulnar thumbs were resected; one hand awaits surgery. In four hands, the ulnar thumb with proximal metacarpal hypoplasia but relatively well-formed phalanges was transferred onto the base of the radial metacarpal. Various techniques were included when resecting the ulnar thumb, mostly filet flaps from the radial thumb to avoid scars in the 1st web space. Additional procedures included thumb shortening (by extra phalanx resection or pollicization), intrinsic or extrinsic muscle transfers, and metacarpophalangeal (MP) collateral ligament repair as indicated. All reconstructions were performed as single-stage procedures. Mean follow-up was 4.1 years (range, 0.4–10). One early complication involved incomplete resection of a small extra phalanx. Pre-existing interphalangeal (IP) joint stiffness persisted postoperatively; MP instability occurred in two hands and IP instability in one.

Conclusions
TTPS frequently features underdevelopment of the ulnar thumb, particularly at the proximal metacarpal, with carpometacarpal (CMC) instability observed in over half of cases. A combination of surgical techniques including on-top transfer of the ulnar thumb, resection with filet flaps, and thumb shortening-enabled reconstruction of functional, aesthetically acceptable thumbs, often with scar-free first web spaces. Single-stage procedures addressing all anatomical components yielded stable, functional thumbs, though some joint instability may require secondary intervention. Tailored surgical strategies based on specific deformities are essential for optimal outcomes in TTPS.

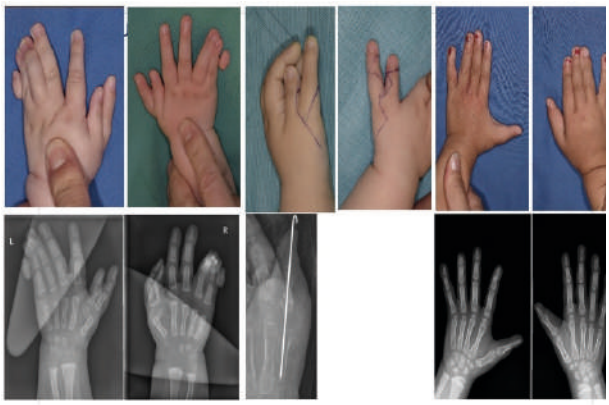


Figure: Preoperative findings, intraoperative planning and postoperative result.
Left hand: Transfer of ulnar thumb onto radial metacarpal. Right hand: Resection of ulnar thumb and reconstruction of radial thu

Fig 1 Abstract SGH 2025.jpg

FM31 – Epiphyseal fractures of the middle phalanx in adolescent climbers – clinical course and outcome

Yves Waser[1], Andreas Schweizer[1], Lisa Reissner[1]
([1]Universitätsspital Balgrist, Zürich)

Introduction
Repeated stress in sport climbing can lead to epiphyseal stress fractures of the middle phalanx in adolescents. The open growth plate represents a biomechanical weak point in this age group. High tensile forces exerted via the flexor tendons, especially when using small, crimped holds, can result in microtrauma and eventual fracture. While clinical presentation is well-described in the literature, the diagnostic reliability of imaging methods and the healing course depending on modality have been little studied. This study aims to analyze the occurrence, clinical features, and consolidation patterns of epiphyseal fractures in adolescent climbers.

Methods
A retrospective analysis was conducted on 21 adolescent climbers with epiphyseal fractures of the middle phalanx, documented between 2012 and 2024. Collected parameters included age, sex, affected digit, time from symptom onset to first presentation, consolidation duration, and imaging modality used for follow-up (X-ray, fluoroscopy, CT). All patients were treated conservatively, including reduced load and avoidance of small, crimped, or painful holds.

Results
The average age was 14 years, and 81% of the patients were male. The mean symptom duration before first presentation was 4 months. Consolidation was documented in 17 of 21 cases, with a mean duration of 7 months. Duration varied by imaging modality: X-ray showed consolidation after an average of 4 months, fluoroscopy after 6 months, and CT after 11 months. X-ray tended to suggest earlier consolidation than more sensitive imaging methods.

Discussion/Conclusion
Epiphyseal stress fractures of the middle phalanx occur specifically in growing adolescent climbers. Radiographic imaging appears limited in sensitivity due to the typically oblique fracture course, potentially explaining the shorter documented healing time. Fluoroscopy and especially CT may offer more accurate assessments of consolidation. Given the characteristic clinical pattern and the conservative treatment approach, early suspicion and adaptation of training loads are crucial to prevent growth disturbances. Further evaluations, including clinical outcomes and correlations with climbing level and fracture morphology, are currently ongoing.

FM32 – A New Technique for Brachioradialis Rerouting in Rotational Corrective Osteotomy of the Radius

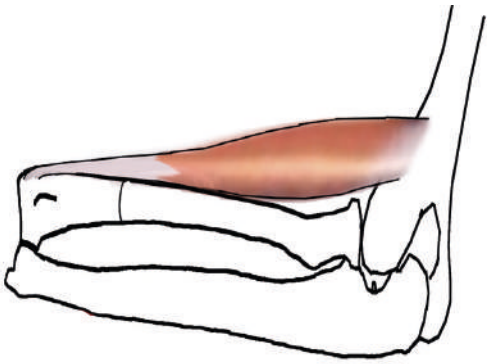
Ladislav Nagy[1], Lisa Reissner[2] ([1]Uniklinik Balgrist, Zürich; [2]Abteilung Handchirurgie Uniklinik Balgrist, Zürich)

Einleitung: Die rotatorische Fehlstellung bei Patienten mit geburtstraumatischer Plexusparese wird meist mittels derotierender Osteotomie der Radius behandelt. Häufig wird gleichzeitig eine «adjuvante» Transferanimation empfohlen. Diese erfolgt mittels Reroutierung der distalen Bizeps- oder der Brachioradialis-Sehne. Beide Methoden erfordern eine Z-förmige Tenotomie, die Sehnen-Naht und eine Immobilisation. Zudem ist die Bizepsreroutierung bei Flexionskontrakturen des Ellbogens und bei Radiusköpfchenluxationen kontraindiziert.

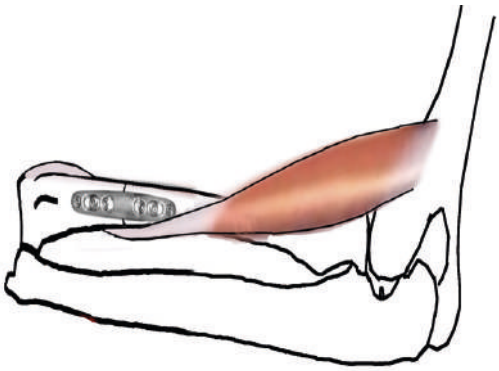
Methode: Bei unserer Technik wird die Brachioradialis-Sehne derart durch den Spalt der Radiusosteotomie gefädelt, dass sie nach Komplettierung der Osteosynthese einen spiralförmigen Verlauf um den Radius erhält; wahlweise in Richtung Pronation oder Supination (sh. Bilder). Notabene erfolgt dies unter Erhaltung der Kontinuität der Brachioradialis-Sehne, sodass die Nachbehandlung funktionell / dynamisch erfolgen kann ohne Rücksicht auf eine (inexistente) Sehnennaht.

Resultate: Wir stellen die Operationstechnik vor anhand von 4 Patienten.
Die Patienten, drei weiblich, ein Junge waren 14, 20, 25 resp. 6 Jahre alt, drei beklagten eine Supinations-Deformität des Vorderarms nach geburtstraumatischen Plexusparese, die vierte eine Pronations-Deformität nach posttraumatischer Parese. Alle vier haben einen Streckausfall im Ellbogen, zwei eine Radiusköpfchen-Luxation. Mittels Radius-Osteotomie erfolgte eine Korrektur um 60-110°, drei Reroutierungen erfolgten für Pronation, eine für Supination. Postoperativ traten keine Komplikationen auf. Bei allen Patienten konnte die gewünschte Verbesserung erreicht werden, im Mittel um 65°.

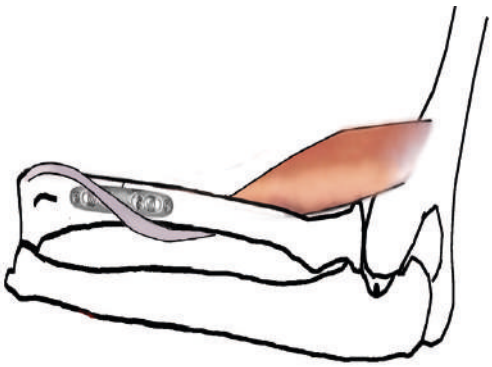
Diskussion: Aufgrund dieser Erfahrung macht es Sinn, die Osteotomie wenn immer möglich mit dieser Reroutierung zu kombinieren. Es ist zu prüfen, ob diese Technik auch andernorts angewandt werden kann: z.B. beim l'Episcopo-Transfer, der Zancolli-Reroutierung etc.



Brachioradialis & Osteotomie in situ



Brachioradialis reroutiert für Pronation & Osteotomie osteosynthetisiert



Brachioradialis reroutiert für Supination & Osteotomie osteosynthetisiert

FM33 – Wrong turn of a pediatric hand trauma: A case of iatrogenic ischemia and hand surgical salvage

Jasper-Johannes Hartung[1], Jan Plock[1], Florian Früh[1] ([1]Klinik für Plastische Chirurgie und Handchirurgie, Kantonsspital Aarau, Aarau)

Introduction
Hand injuries are among the most common cases in emergency departments. While many of these are uncomplicated, palmar transdermal cuts should be routinely seen by trained hand surgeons to not miss injury of neurovascular structures or flexor tendons.

Case Report
We herein present the case of a 10-year-old patient with an open Salter-Harris II fracture at the base of the P2 and flexor tendon laceration of the right pinky after an injury by a broken mirror. Initial treatment was provided by a trauma surgeon in a regional hospital, where the patient underwent flexor tendon repair, including A2 and A3 pulley release as well as K-wire bone fixation. The postoperative course was complicated by a dusky finger color and loss of turgor, suggestive of iatrogenic ischemia. The patient was then referred to the angiology department of our institution, where oscillographic evaluation confirmed digital ischemia. The patient was then referred to our hand trauma center by the angiologist for digital salvage. Emergent revision surgery was performed. The flexor tendon repair was found to be dehiscent. Digital nerves N9 and N10 were intact. However, the digital artery A10 revealed a segmental defect and A9 was found sutured into the FDP tendon repair, resulting in bilateral arterial compromise and critical ischemia. Hand surgical salvage included redo of the FDP repair and revascularization using a reverse vein graft for A9. For soft tissue coverage, a retrogradely arterialized free venous flap from the ipsilateral forearm was raised and connected to A10 and a subcutaneous volar vein. Six weeks postoperatively, the K-wires were removed. Due to a PIP joint flexion contracture of 90° unresponsive to occupational therapy, the patient subsequently underwent arthro-tenolysis, a double Z-plasty for soft tissue re-arrangement and placement of a distraction external fixator. After another four weeks of continuous distraction using the external fixation, the device was removed, and occupational therapy was continued. Ten months after the initial trauma, the patient demonstrated a functionally symmetric outcome with only minimal aesthetic deficits.

Conclusion
This case highlights what can happen if an initially benign digital injury of a pediatric patient takes a wrong turn. It also underscores the multi-staged process of difficult digital salvage, including microvascular revascularization and soft tissue repair as well as restoring the functional balance of a digit.

FM34 – Closed reduction internal fixation of a hook of hamate pseudoarthrosis in a 12-year-old athlete

Joo-Ri Kim[1], Moritz Scholtes[1], Sebastian Hediger[1], Dominik Spühler[1] ([1] Klinik für Hand- und Plastische Chirurgie, Spital Thurgau, Frauenfeld)

Introduction
Isolated fractures of the hamulus of the hamate (HoH) are rare in the general population. However, they occur more frequently in young athletes as stress fractures, particularly in sports that require high grip strength and result in repetitive microtrauma to the hamulus—such as golf, baseball, or tennis. Literature on this injury is limited, particularly in pediatric patients. We present a case of a 12-year-old professional floorball player treated with closed reduction internal fixation using a cannulated screw.

Case History
A 12-year-old, right-handed girl presented to our clinic after falling onto her right hand. She reported nonspecific pain in the right wrist and hand already present for 3 months. Conventional radiographs showed no abnormalities, but a subsequent computed tomography (CT) imaging revealed a fracture of the HoH. It already showed signs of non-union matching the clinical assessment including tenderness over the HoH and pain during wrist motion, particularly with ulnar deviation. No neurological symptoms were observed. Surgical intervention was therefore recommended. Excision of the hamulus, the most common method, was discussed; however, a palmar approach is required, which carries the risk of scar-related discomfort, especially during grip activities which could delay return to unrestricted play. Thus, a less commonly used minimally invasive dorsal approach was selected for screw fixation under an image intensifier to enable faster rehabilitation. The surgery was followed by immobilization in a cock-up splint for 4 weeks. At the 6-week follow-up, the patient was asymptomatic with full range of motion and full weight-bearing. The CT scan showed obliteration of > 50% of the fracture line.

Discussion
HoH fractures are rare, especially in children, but more frequently seen in athletes using equipment requiring a strong grip, such as in our patient's case. In these cases, grip strength is of critical functional importance. Biomechanical studies have shown that grip strength may be reduced by up to 15% following HoH excision. Osteosynthesis may therefore offer a significant advantage over excision. Additionally, a dorsal approach may be superior for nondisplaced fractures or delayed unions in young patients, avoiding scarring in the grip zone for an earlier return to sport.

FM35 – Surgical treatment and postoperative care in children with dystrophic epidermolysis bullosa.

Esin Rothenfluh[1], Elalim Zen Vukovic[2], Antonia Reimer-Taschenbrecker[3], Esther Vögelin[2] ([1]Inselspital Bern, Bern; [2]Plastische und Handchirurgie, Inselspital Bern, Bern; [3]Universitätsklinik für Dermatologie, Inselspital, Bern)

Introduction: Dystrophic epidermolysis bullosa is rare and a heterogeneous group of disease. In the most commonly seen form, the recessive dystrophic epidermolysis bullosa, the development of pseudodyctyly, blistering and scarring lead to adduction and flexion contractures in fingers and thumb, as well as significant functional impairment. Our objective is to present a surgical technique of finger separation and cover of skin defects with Kerecis (fish skin) in two patients.
Methods: Two children have been treated surgically for dystrophic epidermolysis bullosa affecting both hands. They underwent separation of the fingers, in which defects were covered with Kerecis Omega 3, a non-cellular, non-alive, biologically active material. It has the potential to promote wound healing in complex acute or chronic wounds.Surgical technique and preliminary results (functional outcome, satisfaction) are reported.

Results:The first child is female and was four years old at the time of surgery. All fingers showed pseudosyndactyly on both hands and were contract with MCP joints in 80° and PIP joints in 100° flexion. The first commissure showed a completely adducted thumb *(Figure 1)*. The fingers and first commissure were separated and defects covered with Kerecis on both sides. The interdigital dressing included Ialugen Cream, a silicon layer and a foam dressing an was changed on a weekly base *(Figure 2)*. The second child is a male and was 11 years at the time of the first procedure on both hands for separation of all fingers, deepening of the first web space *(Figure 3)* and covering of defects with Kerecis *(Figure 3)*. Another surgery on both hands had to be performed 20 months later due to partial recurrence of pseudosyndactyly. All defects were covered with Kerecis. A wound dressing and splint was applied *(Figure 3).* In both children the fingers and first commissure were successfully separated and wounds healed within 6 weeks without complications. Children and parents are satisfied with the functional improvement, one year since surgery.
Discussion/Conclusion: Severe disease forms of epidermolysis bullosa result in severe functional impairment of the hands given the contractures and pseudosyndactylies. Our preferred surgical treatment is separation of fingers and first commissure by covering defects with Kerecis to promote wound healing and prevent fast recurrence. Functional improvement was gained in both cases and the wounds healed without complications.

Picture 1.png

Picture 2.png

Picture 3.jpg

FM36 – DETERMINATION OF THE LINEAR GROWTH OF THE LONG BONES OF THE LOWER ARM IN CHILDREN AND ADOLESCENTS

Raffaele Buoninsegni[1] ([1]Centro Manoegomito, Manno)

Purpose
There aren't many studies that concentrate on measuring the length of the bones in extremities in children. The main one is from 1955. This study enabled physicians to estimate normal bone length according to age and gender and project remaining growth for specific individuals. This information is vital for orthopedic and hand surgeons to choose the most appropriate treatment when treating fractures, estimating correction potential during growth and when length discrepancies need adjustment to preserve function and aesthetic proportions. The aim of this study is to refresh the data as we expect earlier growth spurts and larger growth compared to the fifties.

Methods
This study is a monocentric retrospective analysis of x-rays of the upper extremities from the 01.01.2011 to the 31.12.2021 at the University Children's Hospital Basel Switzerland. All x-rays have been reviewed by an experienced board certified radiologist. Only non-pathological x-rays of standardised quality were accepted in the study. We measured radius and ulna digitally on anteroposterior or lateral views in the visible ossified length. The differences in ulna and radius length, between sexes and changes associated with age where assessed with a linear regression analysis and descriptive statistics.

Results (temporary)
For each additional year of age, there is a mean increase in length of the bones by approximately 1.06 cm. For each additional year of age, the length of the ulna increases by an additional 0.06 cm more than the radius. When calculating the difference in children with 5 or less years compared to children with >5 years, the data show a lesser yearly growth in the last group. These measurements show statistically significant differences with a P-value <0.001, except for the last two categories described. All these analyses are only true when other factors like age, type of bone and gender are held constant. So far we included 509 x-rays: 214 radiuses and 295 ulnas. The patients have been categorised according to their age: initial every 2 months, then every 6 months. From the age of 10 we categorised them annually. At the age of 10, we also included the epiphysis in the measurements. We do not yet have enough data to construct growth curves, those results will follow.

Conclusions (temporary)
This is only the tip of the iceberg of the analyses we aim to perform, including the main objective of this study: growth charts. We are still collecting data and analysing it.

FM37 – Three-dimensional motion analysis of finger in sport climbing in different age groups

Julia Leipner[1], Gabriella Fischer[1], Andreas Schweizer[1], Lisa Reissner[1] ([1]Universitätsklinik Balgrist, Zürich)

Objective: Pulley ruptures are the most common climbing injury and have been associated with more flexed proximal interphalangeal (PIP) joints. Our initial study on kinematics of finger joints during climbing revealed large inter-individual variation in PIP joint flexion, especially among older climbers, who exhibited reduced angulation across different grip positions. Consequently, the aim of this study was to compare finger joint motion between younger and older climbers.
Methods: 6 young (<45 years) and 5 old (>45 years) elite climbers (climbing level of ≥23 on the IRCRA reporting scale) executed a defined boulder problem, featuring six holds. Kinematics of the fingers and the wrist was recorded by an optical motion capture system. The boulder was climbed using four distinct grip positions: crimp, half crimp, open-hand grip (excluding the little finger) and participant-selected grip (chosen freely by the climber). Additionally, osteophytes in the PIP and DIP joints were assessed using ultrasound.
Results: During the holding phase, PIP joint angle of the old climbers was 61° (SD 16.5°), 46° (12.3°), 27° (13.4°)

and 48° (13.2°) in crimp, half-crimp, open-hand grip and self-selected position and 85° (11.1°), 76° (13.9°), 35° (22.2°) and 75° (10.9°) of the young climbers. Participant-selected grip position corresponded to the half-crimp position. Three PIP and 4 DIP joints in young climbers and 15 PIP and 19 DIP joints in old climbers had osteophytes. The presence of osteophytes correlated negatively ($p<0.0001$, $R=-0.6$) with PIP flexion and positively ($p<0.5$, $R=0.4$) with DIP flexion during the crimp, half-crimp and self-selected grip.
Conclusion: This study revealed distinct biomechanical strategies in finger flexion between older and younger climbers during gripping tasks. Older climbers demonstrated significantly ($p<0.0001$) reduced flexion at the PIP joints compared to their younger counterparts in crimp, half crimp and self-selected grip position. Similarly, overall a hyperextension of the DIP joints was observed for the young climbers whereas the older climbers showed slight flexion of the DIP in these tasks. Sonographically measured osteophytes were associated with reduced PIP flexion and possibly prevented hyperextension of the DIP joints.

FM38 – Enzymatic Debridement for Third-Degree Burns of the Upper Extremities: A Retrospective Clinical Analysis

Bong-Sung Kim[1], Tabea Breckwoldt[1], Simon Roner[1], Olga Politikou[1], Pietro Giovanoli[1] ([1]University Hospital Zurich, Zürich)

Background:
Enzymatic debridement has become an established treatment modality in modern burn surgery, with well-documented benefits for deep partial-thickness burns, including dermal preservation and frequent avoidance of skin grafting. However, its efficacy in managing third-degree burns remains uncertain. This study specifically examines the outcomes of enzymatic debridement for third-degree burns affecting the upper extremities, including hands, where this technique may offer particular advantages.
Methods:
We conducted a retrospective review of all patients with third-degree burns of the upper extremities treated with enzymatic debridement at the Burn Center of University Hospital Zurich between 2021 and 2024. Data collection included pretreatment protocols, timing and technique of enzymatic debridement, subsequent wound management strategies (both temporary and definitive coverage), clinical outcomes, and complication rates.
Results:
The study cohort comprised 26 patients with severe burns (mean ABSI score: 7.9; mean total body surface area affected: 34.9%). The average surface area treated with enzymatic debridement was 9.1% TBSA. While 96% of patients ultimately required split-thickness skin grafting (typically performed >48 hours post-debridement), 28% of these developed residual defects requiring additional grafting. Secondary reconstruction with dermal substitutes or local flaps was necessary in 15% of cases during follow-up. The rate of complications (infections, skin graft loss) was comparable to patients undergoing conventional tangential excision and split-thickness skin grafting.
Conclusion:
Our findings demonstrate that enzymatic debridement represents a viable treatment option for selected cases of third-degree burns in the upper extremities. Protocol modifications, including concentration adjustments of the enzymatic agent and preliminary tangential excision of the burn eschar, may enhance treatment efficacy. Importantly, unlike its application in deep partial thickness burns, enzymatic debridement of third-degree injuries typically still necessitates subsequent skin grafting, with early definitive coverage potentially optimizing outcomes. These results provide valuable guidance for surgical decision-making in severe upper extremity burns.

Freie Mitteilungen / Communications libres V:

FM39 – Patient-Specific 3D Osteotomy for Bennett Fracture Malunions: Accuracy and Outcomes

Arnaud Klopfenstein[1], Andreas Schweizer[2], Mauro Maniglio[2] ([1]Department of Orthopaedic, Balgrist University Hospital, University of Zurich, Zürich; [2]Department of Hand Surgery, Balgrist University Hospital, University of Zurich, Zürich)

Introduction:
Malunions of Bennett fractures can cause intraarticular step of leading to osteoarthritis and functional impairments. Intra-articular corrective osteotomy, though demanding due to the small fragment size, is the only reconstructive treatment. Three-dimensional (3D) planning and patient-specific guides can enhance accuracy and aid in such cases. This study evaluated the post-op joint congruency, and functional outcomes of first metacarpal base corrective osteotomies using 3D planning and 3D-printed patient-specific instruments (PSI).

Materials and Methods:
We report outcomes of 13 patients who underwent corrective osteotomies at the base of the first metacarpal for malunited Bennett's fractures. Computer-assisted 3D preoperative planning, using the contralateral hand as a template, facilitated the creation of 3D-printed patient-specific guides for intraoperative navigation. Articular step correction and reduction of first metacarpal subluxation were assessed on follow-up CT scans and analyzed using computer-assisted 3D evaluation based on these scans. In addition, clinical assessments, including range of motion (ROM), pain, grip and pinch strength, were performed at final follow-up (median 14 months). Postoperative complications were also documented.
Results:
13 patients (mean age 28± 11 years, range 14–56) underwent corrective osteotomy at the base of the first metacarpal, with a median follow-up of 14 months (IQR: 9.0–19.0). Follow-up CT scans in 13 patients confirmed successful corrections, good joint congruency, and

regular osseous consolidation. The mean articular step-off decreased significantly from 1.9 ± 0.4 mm preoperatively to 0.2 ± 0.1 mm postoperatively. 3D-analysis, performed in 10 patients, demonstrated a mean step-off reduction in the sagittal plane of up to −1.5 ± 0.8 mm and a gap reduction in the axial plane of up to −1.4 ± 1.2 mm between pre- and postoperative CT scans. One patient required revision surgery with a carpometacarpal (CMC) I arthrodesis due to screw cut-out. At final follow-up, ROM improved significantly, and strength returned to levels comparable to the contralateral side.

Conclusion & Perspectives:
Our results highlight the effectiveness of 3D planning and PSI in achieving precise corrections for first metacarpal base osteotomies following Bennett's fracture malunion. This approach not only ensures optimal surgical accuracy but also leads to significant clinical improvements and high patient satisfaction.

FM40 – Are early posttraumatic radiographs a need in conservative treated fifth metacarpal neck fractures?

Pascal Zimmermann[1], Torsten Pastor[2], Cédric Zubler[3], Esther Vögelin[3], Tatjana Pastor[4] ([1]Inselspital Bern, Bern; [2]Klinik für Orthopädie und Unfallchirurgie, Wolhusen; [3]Universitätsklinik für Plastische- und Handchirurgie Inselspital, Bern; [4]Bürgerspital Solothurn, Solothurn)

Purpose Follow-up radiographs are considered standard of care in non-operative management of fifth metacarpal neck fractures, for assessing secondary displacement, which may necessitate surgical correction. This study aims to investigate whether these radiographs actually have a significant impact on patient algorithm.
Methods We conducted a retrospective analysis of all cases initially treated non-operatively for fifth metacarpal neck fractures at the university hospital Berne between 2012 and 2022.
A total of 84 consecutive patients were included and evaluated, determining the frequence of conversion from initial conservative to surgical treatment, based on the follow-up X-rays taken after 7 to 10 days (SD 24 ± 23.5 days).
Results Three patients experienced a secondary dislocation 10 days after the initial presentation (3.6 %) of which only one required surgical fixation for a secondary 70° palmar dislocation, 19 days after closed reduction at a hospital (1.2 %) abroad. Two other patients received surgical treatment without showing secondary dislocation: one due to excessive callus formation and lack of consolidation 27 days post-injury, and the other at their own request 17 days later.
No patient required a change to an alternative non-operative treatment method based on radiographic findings.
Conclusion Based on our findings, performing routinely radiographs 7 till 10 days after initial conservative treatment appears unnecessary in fifth metacarpal neck fractures and should only be done in select cases with high suspicion. It increases the load on the healthcare system, costs, and radiation exposure. Since this study was conducted at a single hospital, a multicentre study with a larger patient collective could further validate the results.

FM41 – Fantastic elastic: Two-year experience with titan elastic nailing in subcapital metacarpal fractures

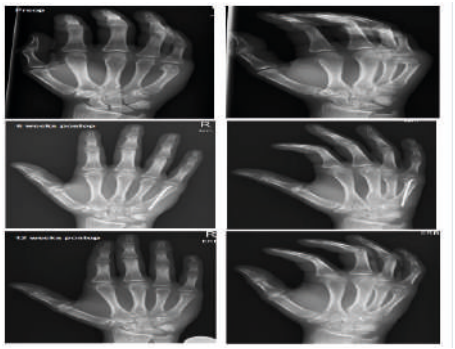
Linus Schoepke[1] ([1]Kantonsspital Olten, Luzern)

Introduction
Intramedullary splinting of displaced supcapital metacarpal fractures is a well-established treatment option. Placement of multiple pre-bent k-wires in the metacarpal medullary canal can be challenging and time-consuming due to the k-wire's inherent sharp edges and relatively low stability. We therefore implemented – inspired by pediatric surgery - the use of a single intramedullary titan elastic nail (TEN) in our treatment for displaced subcapital metacarpal fractures.

Methods
All consecutive patients at our unit with a displaced supcapital metacarpal fracture eligible for operative reposition and stabilisation between April 2022 and March 2025 were retrospectively included in the study. One patient was excluded due to multiple fracture sites of multiple metacarpals.

Results
Over the observed 2-year period, a total of 31 displaced subcapital metacarpal fractures in 29 patients were treated with a single 2mm or 2.5mm intramedullary TEN. No complications were noted except one patient with a cut-out of the TEN at the fracture site. Nevertheless, fracture union was present in all patients and hardware-removal could be performed in time.

Conclusion
The use of a single intramedullary titan elastic nail as treatment of displaced subcapital metacarpal fracture is an easy, safe and time-sparing alternative to intramedullary k-wires since the TEN doesn't need to be pre-bent and has a round and angulated tip, which allows smooth gliding in the intramedullary canal and facilitates reposition of the metacarpal head.



Two-year experience with titan elatic nailing in subcapital metacarpal fractures figure.JPG

FM42 – Distal radial condyle fracture of the first metacarpal: a case series of 10 patients

Lea Estermann[1], Leandra Ehrat[2], Andreas Schweizer[1], Nina Fuchs[1] ([1]Universitätsklinik Balgrist, Zürich; [2]Universität Zürich, Zürich)

Introduction:
Fractures of the first metacarpal are common but mostly affect the base or shaft. Distal fractures are rare, and in particular radial condyle fractures haven't previously been described. We hypothesize that this fracture type is often missed, and patients are misdiagnosed with a simple metacarpophalangeal joint sprain.
Aim: Our goal was to describe the trauma and type of fracture to create awareness and to reduce the number of missed fractures.
Material & Methods:
All patients with a condylar fracture of the distal first metacarpal were included between 2021 and 2024. A retrospective data analysis took place regarding age, cause of trauma, delay of diagnosis, imaging modality. Pain and range of motion was assessed at the last follow up.
Results:
During the 4-year time period 10 patients were found with a condylar fracture of the radiopalmar condyle. Some of them had a concomitant ulnar collateral ligament lesion. The injury happened manly during sports activities, mostly skiing. Patient often described a hyperextension trauma. The diagnosis was given on average 1.2 months after trauma (range 0-4). On conventional x-ray the fracture has been missed in all the cases. The ultrasound examination showed in all cases an irregularity of the radial condyle, in 5 cases the diagnosis was confirmed with a computer tomography. Patients complained initially about radial sides metacarpophalangeal joint pain, and 5 out of 10 patients had slight to moderate pain at the final follow up (average 4.7 months after trauma). 8 out of 10 patients received an immobilisation of the MCP joint in extension for 4-6 weeks. The data regarding range of motion is incomplete, mainly a stiffness in the metacarpophalangeal joint has been mentioned, one patient complained about reduced interphalangeal joint range of motion.
Conclusions:
Radial condylar fractures of the first metacarpal are not apparent on conventional x-rays. Further imaging is needed to confirm the diagnosis. Most of our patients received an immobilisation for 4-6 weeks. Some residual pain after 4 months was registered in 50% of our patients.

FM43 – Ultrasound free-moving ligament sign in severe ulnar collateral ligament injury of thumb MCP joint.

Emmanuelle Richard[1], Sebastien Durand[2], Yves Harder[2] ([1]CHUV, Lausanne FR; [2]CHUV, Lausanne)

Introduction
Differentiating between partial and complete tears of non-displaced ulnar collateral ligament (UCL) injuries remain a diagnostic challenge. Our main goal was to describe the "free-moving ligament" sign, which may provide a simple and painless method to detect full thickness, non-displaced UCL tears by ultrasound without risking secondary displacement.
Material and methods
This retrospective study was based on a review of the institutional database of a single department. Ultrasound examinations were performed using an Aixplorer™ ultrasound system. Ultrasound findings of all patients with clinically diagnosed ulnar instability of the thumb metacarpophalangeal joint were reviewed.
Results
Between 2023 and 2024, 12 patient records were eligible for analysis. A Stener lesion was identified in 7 patients. Among the 5 patients without any Stener lesion, a free-moving ligament was observed as a rotational movement of the ulnar collateral ligament during Bordet maneuver[A4] , both in B-mode and longitudinal views.
Discussion
Patient with severe full thickness and non-displaced UCL tears whit absent attachment of the ligament to the proximal phalanx, hypermobility of the UCL may be observed under the aponeurosis of the adductor pollicis during the Bordet maneuver. Full thickness and undisplaced UCL injuries can thus be identified using ultrasound through the visualization of the "free-moving ligament sign". Ultrasound – although investigator dependent - could therefore potentially replace MRI, which has traditionally been considered the reference imaging modality to distinguish between the two subtypes of non-displaced injuries. However, MRI is often prone to false positive results due to edema, hemarthrosis, and other confounding factors.

FM44 – Outcomes of metacarpal fractures fixed with intramedullary screws compared to dorsal plates

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Background
Metacarpal shaft fractures are commonly treated using either dorsal plating or intramedullary headless compression screws (CCS). Biomechanical studies have demonstrated comparable stability between both techniques. However, the compressive nature of CCS fixation may result in unintended shortening of the affected metacarpal. This study aims to quantify the extent of shortening and assess its clinical relevance.

Methods
We retrospectively evaluated metacarpal shaft fracture surgeries performed between 2014 and 2024. Metacarpal length preservation was assessed using the method described by Lichtig et al[1], which estimates predicted length based on contralateral measurements (e.g., the predicted length of the second metacarpal is the length of the third metacarpal plus 0.2 cm). Secondary outcomes included correlations between radiological findings and clinical measures such as range of motion, grip strength, patient satisfaction, VAS scores, and Michigan Hand Outcomes Questionnaire results. Complications were also recorded.

Results
A total of 117 patients (80 male, 37 female; mean age 39 years, SD 17) were included. Thirty patients underwent fixation with CCS (CCS group), and 87 were treated with dorsal plates (plate group). The mean difference from predicted length was 1.8 mm (SD 1.6) in the CCS group and 0.9 mm (SD 1.0) in the plate group. Additional analyses, including functional outcomes, will be presented at the SGH congress.

Conclusion
CCS fixation of metacarpal shaft fractures is associated with greater shortening relative to predicted bone length compared to dorsal plating. The clinical implications of this finding are under further investigation.

Reference
1. Lichtig A, Mejia A, Lipman M, Jacome FP, Amirouche F. Predicting Metacarpal Anatomic Lengths via Adjacent Metacarpals. J Hand Surg Glob Online. 2023 Oct 23;6(1):74-78.

FM45 – Experience matters: Predicting adverse events in 476 PIP surface replacing implants

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Aim: The aim was to analyse predictors of adverse events up to 10 years after proximal interphalangeal (PIP) joint surface replacement.
Methods: Adverse events in patients who underwent PIP surface replacement with the CapFlex-PIP prosthesis between 2010 and 2024 were analysed. We developed multivariate logistic regression models to identify predictors of the three most common adverse events: 1. Limited range of motion (ROM) [= postoperative ROM less than 30°]; 2. Implant-related problems [e.g., implant dislocation, loosening]; 3. Implant revision surgery [implant removal or exchange]. Covariates included in the models were preoperative sociodemographic data, clinical measures, patient-reported outcomes, and surgical details. Odds ratios (OR) were calculated.
Results: We analysed 431 patients with 476 implants and developed the following models:

1. Limited ROM after surgery was 1.88 times (=OR) more likely in patients who had prior surgery on the affected finger compared to those without prior surgery. In contrast, the odds of limited ROM was 0.40 times lower (a 60% reduction) if the ring finger was affected, 0.96 times lower (a 4% decrease) for each additional year of age, and 0.91 times lower (a 9% decrease) for each 1-point increase in preoperative pain ($R^2 = 0.12$).
2. The middle (OR: 5.22), ring (OR: 8.13), or small finger (OR: 27.65) had a significantly higher risk of implant-related problems compared to the index finger. The odds of implant-related problems also increased 5.92 times in cases of preoperative axis deviation greater than 15°. More experienced surgeons had 96% lower risk (OR: 0.04) of implant-related problems compared to residents ($R^2 = 0.23$).
3. A 3mm high distal implant component (size M) reduced the odds of revision surgery (OR: 0.40), and greater surgical experience was associated with a 77% reduced risk of revision (OR: 0.23; $R^2 = 0.13$).

Conclusions: Our models explained only a small proportion of the variance in adverse events, indicating the presence of additional unknown factors contributing to complications. However, the results show that ulnar fingers have a lower risk of stiffness but a higher risk of implant-related problems. Preoperative axis deviation increases the likelihood of implant-related problems, while greater surgical experience is linked to a reduced risk of adverse events.

FM46 – Treatment options of failed CapFlex PIP Joint Implants: Outcomes of Arthrodesis and Silicone Implant

Efe Akyildiz[1], Lisa Reissner[1], Mauro Maniglio[1], Andreas Schweizer[1] ([1]Universitätsklinik Balgrist, Zürich)

The CapFlex implant is a motion-preserving prosthesis for the proximal interphalangeal (PIP) joint and has seen increasing use in recent years due to its promising early functional outcomes. However, implant failure remains a clinical challenge and may necessitate revision surgery. This study evaluates the surgical outcomes of patients who underwent revision procedures following failed CapFlex PIP arthroplasties. Between January 2019 and May 2025, seven patients with a total of nine failed CapFlex PIP joint prostheses underwent revision surgery at our institution. As salvage procedures, three Swanson silicone arthroplasties and five PIP joint arthrodesis using tension band wiring and one plate arthrodesis were performed. In the arthrodesis group in three joints cancellous autograft of iliac crest, osteophytes or resected head of proximal phalanx were used. Three arthrodesis of the index finger, one of the middle finger and two of the ring finger were performed. Swanson arthroplasty has been implanted two times in the index and once in the ring finger. Preoperatively, the participants were informed about the surgical options, whereupon the majority opted for arthrodesis. Patients were followed postoperatively for functional outcomes, pain levels, and complication rates. All patients demonstrated improved stability and reduced pain postoperatively. Functional outcomes varied depending on the revision method, with arthrodesis providing reliable stability and silicone implants preserving partial range of motion. No cases of infection or implant loosening were observed during follow-up.
Revision of failed CapFlex PIP implants with either arthrodesis or Swanson silicone arthroplasty offers reliable salvage options. Arthrodesis ensures long-term joint stability, whereas silicone implants may be preferred when some range of motion is desired. As the use of CapFlex prostheses continues to grow, awareness of potential failure modes and effective revision strategies becomes increasingly important. With the

growing adoption of CapFlex PIP implants, hand surgeons should be prepared to manage implant failures. Both arthrodesis and silicone arthroplasty are viable revision options, and the choice of technique should be tailored to the patient's functional demands and joint condition.
The authors declare that there is no conflict of interest.
No funding has been allocated to this project.

FM47 – Comparison of ultrasound-guided percutaneous vs open A1 pulley release – a non-inferiority study

Alissa Gübeli[1], Michaël Papaloïzos[1], Konstantinos Vakalopoulos[1], Stéphane Kämpfen[1], Flavien Mauler[1] ([1]Clinique de la Main - Genève, Genève)

Introduction:
Trigger finger (TF) is one of the most common hand pathologies, with a lifetime prevalence of 2–3% and an incidence of 28 cases per 100'000 individuals. While open A1 pulley release remains the gold standard for surgical treatment, minimally invasive techniques have gained increasing popularity in recent years. Ultrasound-guided percutaneous A1 pulley release (USGAR) offers comparable success rates to open surgery, with the added benefits of faster recovery, reduced postoperative pain, improved patient satisfaction, superior cosmetic outcomes, and a lower complication rate.
We are conducting an ongoing non-inferiority study comparing USGAR, using a novel Sono-Instrument®, with open A1 pulley release.

Material and Methods:
In this prospective single-center comparative non-inferiority study, we included 26 patients treated with USGAR using Sono-Instrument® and 26 patients treated with open pulley release for TF. All patients of the USGAR group were operated by the same two surgeons certified in sonography of the hand and experienced in sono-guided procedures, in a day clinic operative room, under local anesthesia. Patients were assessed postoperatively primarily for trigger resolution (Quinnell grading system), and secondarily for complications, functional recovery, pain, and patient satisfaction.

Results:
The clinical outcomes of ultrasound-guided percutaneous A1 pulley release (USGAR) using the Sono-Instrument® are being evaluated and compared to those of open pulley release. As the study is ongoing and scheduled for completion in July, the results will be available for presentation at the congress.

Conclusion:
This prospective comparative non-inferiority study of USGAR with the Sono-Instrument® versus open pulley release provides valuable insights for potential future users of this technique.

FM48 – Is there an indication for Surgical Management of Palmar Plate Injuries? A new treatment concept

Nadia Atitallah[1], Andreas Schweizer[1], Mauro Maniglio[1] ([1]Balgrist, Zürich)

Introduction
Isolated ruptures of the palmar plate at the interphalangeal (IP) and metacarpophalangeal (MCP) joints are mostly treated conservatively. However, some cases fail to heal adequately, leading to joint instability and swan-neck deformities. There are currently no clear predictive criteria for such complications, which result in persistent hyperextension, pain, and functional impairment. Early recognition and surgical treatment may prevent chronic instability.
This study identifies a specific subgroup prone to instability and evaluates the outcomes of surgical palmar plate refixation.
Materials and Methods
We retrospectively reviewed 12 patients (10 male, 2 female, mean age 40 years) treated surgically between 2009 and 2024 for isolated palmar plate ruptures with confirmed proximal flipping on ultrasound. Injuries were classified as acute (<4 weeks, n=3), subacute (1–3 months, n=3), and chronic (>3 months, n=6). Swan-neck deformity was present in several patients, mostly reducible. Lesions involved the PIP joint of the fifth finger (n=7), PIP of the fourth finger (n=2), IP joint of the thumb (n=2), and MCP joint of the thumb (n=1). Surgical techniques included direct refixation with V-shaped bone tunnels (n=11) or all-suture anchors (n=1). Pain, hyperextension, and flexion mobility were assessed pre- and postoperatively.
Results
All 12 patients showed palmar plate dislocation with direct contact between flexor tendons and the phalangeal/metacarpal condyles on ultrasound. At final follow-up (mean 4 months), all patients with preoperative pain became pain-free. Flexion range improved from 20.4° to 71.25° ($p = 0.0015$). Hyperextension was reduced from 28° to 4° ($p = 0.0015$). No complications occurred.
Discussion and Conclusion
In proximally flipped palmar plate injuries, the ligament end remains non-anatomical, and the flexor tendons block spontaneous reduction. We believe conservative treatment in such cases leads to chronic instability. Surgical intervention is necessary when the plate has retracted proximally.
This series illustrates the progression from acute to chronic stages and demonstrates that surgical refixation restores joint stability, corrects hyperextension, and improves flexion. Early ultrasound diagnosis is essential, as conservative management fails once proximal retraction occurs. Our findings challenge the prevailing dogma of unconditional conservative treatment for isolated closed palmar plate injuries and provide new clinical insight into surgical indications.

FM49 – 3D-Guided vs. Traditional Reconstruction for Scaphoid Malunion and Nonunion: A Comparative Study

Mauro Maniglio[1], Sylvano Mania[2], Lisa Reissner[1], Ladislav Nagy[1], Andreas Schweizer[1] ([1]Balgrist Universitätsklinik, Zürich; [2]CHUV - Centre hospitalier universitaire vaudois, Lausanne)

Purpose: The treatment of Scaphoid malunion or malpositioned non-unions is challenging. To reconstruct the exact shape of this complex three-dimensional bone is difficult, but crucial for the wrist biomechanics. Therefore, the use of 3D planning and 3D printed guides can be an important advancement in the precision of these surgeries and therefore also for the clinical result of the affected patients. We want to present our results of patient treated with this 3D technique and compare them to a historical cohort treated with conventional Scaphoid reconstruction.
Methods: 64 patient (average age 29y, 45 male) with a scaphoid non-unions (50), delayed-union (10) or malunion (4) were treated with a 3D guided scaphoid reconstruction. The intended correction of the malposition, reduction and fixation was planned based on a bilateral wrist CT-scan with the mirrored contralateral scaphoid as a template. The scaphoid reconstruction was then performed using custom-made 3D-printed guides. The clinical results were collected for union, VAS, ROM and grip strength. We used the mirrored 3-dimensional model of the healthy scaphoid to access the achieved correction of the fragment from prereduction to postreduction. The clinical results were then compared to the results of a historical cohort of 53 conventionally treated scaphoids.
Results: We are currently collecting the outcomes and finalizing the results.
Conclusions: It would be a great pleasure to present our results of this comparative cohort study at the SGH meeting in Lugano!

Freie Mitteilungen / Communications libres VI:

FM50 – Temperature Trends in Digital Replantation: Can They Predict Failure?

Judith Döringer[1], Esther Vögelin[2] ([1]Inselspital Bern, Bern; [2]Inselspital, Bern)

Introduction
Since the 1970s, monitoring temperature in digital replantation has been a standard practice, widely believed to aid in identifying failing digits. However, there is limited evidence to substantiate the value of these time-intensive measurements. This retrospective study aims to evaluate successful and unsuccessful digital replantations by comparing both absolute temperature values and temperature differences relative to a control finger.
Methods
This retrospective, monocentric, case-control study included all patients who underwent digital replantation procedures at the University Hospital Bern between 2019 and 2023. Out of 44 patients, sufficient data was available for 36, enabling the comparison of 48 replanted fingers. Among these, 37 digits survived, while 11 failed. Absolute temperatures of the operated fingers were recorded at intervals of 6, 12, 18, 24, and 36 hours, as well as on days 3 and 4 post-surgery. Additionally, the temperature differences between the replanted finger and a control finger were analyzed at each time point.
Results
In the first 18 hours, there was no significant difference in absolute temperatures between successful and failed replantations. However, from 24 hours post-surgery until day 3, successfully replanted digits maintained a higher temperature, averaging 1.7 degrees warmer. Comparing the temperature differences between replanted and control fingers, a notable divergence was detected at 12 hours post-surgery. From this point up to day 3, failed fingers were, on average, 2.8 degrees cooler than the control, whereas successful replantations showed only a difference of minus 0.7 degrees. The lowest recorded relative temperature for surviving digits was -6.8 degrees, while it was -6.0 degrees for failed digits, with the minimum absolute temperature in both groups being 29.7 degrees.
Unfortunately, only nine cases had available temperature data immediately before and after revision surgery, which limited the ability to perform a statistically valid analysis for this subgroup.
Conclusion
Temperature monitoring remains a valuable tool in assessing the success of digital replantations. Nonetheless, this study did not identify a specific absolute temperature, temperature differential or threshold capable of reliably predicting replantation failure.

FM51 – Perfusion in Digital Replantation – Does the Number of Vascular Anastomoses Influence the Outcome?

Judith Döringer[1], Esther Vögelin[2] ([1]Inselspital Bern, Bern; [2]Inselspital, Bern)

Background:
The optimal number and configuration of vascular anastomoses in digital replantation remain controversial. While arterial inflow is essential for digit survival, the impact of reconstructing both arteries and the number of venous outflows on clinical outcomes is still a matter of debate.

Methods:
In this retrospective, single-center case-control study, all digital replantation procedures performed at the University Hospital of Bern between 2019 and 2023 were reviewed. Of 44 patients, 36 had complete data sets, allowing analysis of 48 replanted digits. The number of arterial and venous anastomoses was recorded and their relationship to digit survival evaluated. In addition, the artery-to-vein ratio was analyzed as a potential predictor of outcome.

Results:
The reconstruction of one versus both digital arteries had no significant influence on the survival rate of replanted digits. Digits that survived had a higher mean number of venous anastomoses. Despite this trend, the ratio of arterial to venous anastomoses was not a statistically significant predictor of replantation success.

Conclusion:

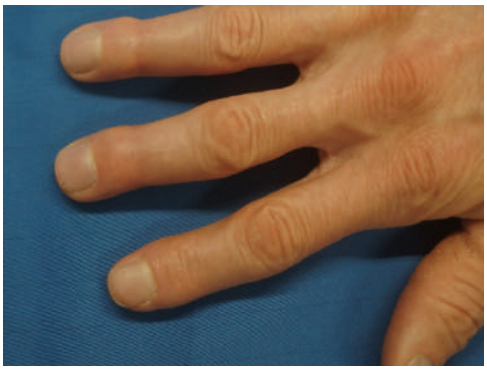
While the number of venous anastomoses appears to correlate with improved digit survival, the presence of one versus two arterial repairs does not significantly impact outcomes. Nor is the artery-to-vein ratio alone a reliable predictor of surgical success.

FM52 – Artery-only fingertip replantation with the "crater method": New gold-standard in Tamai Zone I

Elena Frey[1], Matteo Meroni[1], Stefanie Schmitt[1], Elmar Fritsche[1], Sabrina Ricca[1] ([1]Luzerner Kantonsspital, Luzern)

Introduction The literature on fingertip replantation has grown substantially, yet there remains no unified approach for managing amputations in Tamai Zone I, particularly regarding the optimal strategy for venous repair: For example, some research, such as Matsuda's, found no significant relationship between the number of veins anastomosed and the success rate of replantation. In contrast, larger series like Hahn's, involving 450 cases, report a clear association between the number of venous repairs and improved outcomes. Despite these discrepancies, it is widely accepted that veins in Tamai Zone I, with lumen diameters as small as 0.2–0.4 mm, are extremely challenging to identify and suture, necessitating advanced supermicrosurgical techniques
Method This study conducts a literature review on techniques for establishing venous outflow in artery-only fingertip replantation, evaluating the success rates of different approaches. Additionally, we present an analysis of our institutional data from the past eight years, specifically examining 21 cases of Tamai Zone I fingertip amputations.
Results All 21 cases were treated using the artery-only technique, with venous drainage accomplished via tangential dermal excision, commonly referred to as the "crater method." Of these, 15 cases resulted in successful replantation, while 5 experienced necrosis. Notably, none of the patients required blood transfusions, and the average hospital stay was 6 days.
Conclusion Fingertip amputations in Zone Tamai I should always be considered for replantation. The artery-only technique, when paired with external bleeding or "crater" method, has demonstrated satisfactory results in ensuring adequate venous outflow. Depending on the study, direct venous anastomosis or reconstruction using interposition grafts is feasible in just 20% of cases, sometimes not at all. Such techniques are typically reserved for highly skilled microsurgeons and are best performed in high-volume centers. For this reason, we recommend the "crater method" as a simple and effective approach to achieve sufficient venous outflow. We consider this technique, along with the artery-only approach, to be the gold standard for fingertip replantation in Tamai Zone I.

Crater 1 EF.png



Crater 2 EF.png

FM53 – Retrospective analysis of success rates on digital revascularization and replantation over 5 years

Jana Haller[1], Fabrizio Fiumedinisi[2], Mateusz Gladysz[1], Alain Schiffmann[1], Anna Wang[1], Jean-Daniel Lellé[1], Nadine Pedrazzi[1], Holger Klein[1], Plock Jan[1], Florian Früh[1] ([1]Kantonsspital Aarau, Aarau; [2]Kantonsspital, Aarau)

Introduction
Digital revascularization and replantation are essential to restore function after traumatic finger injury. Due to better safety measurements for manual workers and a high density of hand surgeons in Switzerland, the exposure to digital replantation/revascularization is low, precluding high-volume training of individual surgeons. From a global perspective, different surgical strategies are used to optimize outcomes. In 2023, a novel protocol based on the Buncke technique was established in our division to enhance efficiency of replantation. This retrospective study analyzes success rates of digital revascularization/replantation performed during the past five years and evaluates the effect of the novel protocol
Material and Methods
Data from 61 fingers (26 revascularizations vs. 35 replantations with 11 artery-only replantations) from 45 patients were included. The operations took place between January 2020 and December 2024 at a tertiary Swiss hand trauma center. The 36 fingers operated from 2023 onward were treated using the novel technique. We evaluated surgery time, tourniquet time, survival

rates, and their distribution among different surgical approaches. Mean follow-up was 233(150–376) days.
Results
The median operation time per finger was 168(130–226) minutes (min) for revascularizations and 165(123–197) min for replantations. The median tourniquet time was 120(74–129) min for revascularizations and 135(90–210) min for replantations. Mean survival rate was 73%, with revascularizations achieving 92% and replantations 59%. Fingers treated according to the novel protocol demonstrated a mean survival rate of 80% compared to 68% with the previous technique. A total of 13 of the replanted fingers underwent revision amputation, including 7 fingers (33%) treated according to novel protocol and 6 (42%) fingers with the previous technique. Of note, significantly more fingers were operated using the novel protocol. Median operation time using the novel technique was 159(119–203) min compared to 168(142–273) min for other approaches.
Conclusion
Revascularization demonstrated consistently higher survival rates compared to replantation, whereas >40% of the replanted fingers underwent revision amputation. Our preliminary analysis reveals a trend towards shorter operations using the Buncke technique. Overall, careful patient selection, standardized surgical protocols, as well as continuous training remain fundamental.

FM54 – Antibiotic prophylaxis practices - comparing strategies between hand surgeons and ID specialists

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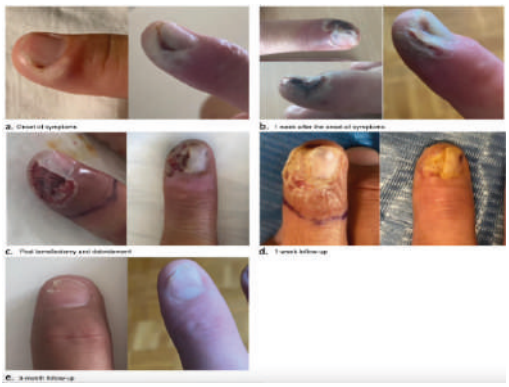
Introduction / Aim: Perioperative antibiotic prophylaxis is widely used to prevent surgical site infections in plastic surgery and hand surgery (PHS). However, the lack of robust evidence and the diversity of procedures and patient characteristics make standardized recommendations difficult. This study aimed to assess current prophylactic antibiotic strategies in PHS and to compare practices among infectious disease (ID) specialists and surgeons, with a focus on areas of uncertainty.
Material and Methods: A multicentric cross-sectional online survey was developed collaboratively by ID and plastic and hand surgery (PHS) specialists and distributed among their respective professional communities in Switzerland. The questionnaire included general questions on antibiotic prophylaxis strategies and 11 clinical case vignettes reflecting common PHS scenarios. Respondents indicated their preferred approach regarding indication, route, agent, and duration of antibiotic prophylaxis. Responses were analyzed descriptively and compared between the two specialties. Cases were defined as having high uncertainty if 40–60% of participants recommended prophylaxis.
Results: A total of 101 physicians answered the questionnaire, thereof 75 (74.3%) PHS surgeons and 26 (25.7%) ID physicians. The majority (94/101; 93.1%) had achieved specialist qualification in their respective field with a median experience of 11 (IQR 5-20) years. Overall, PHS surgeons recommended prophylaxis more frequently than ID specialists (54% vs. 44%, $p < 0.05$). In cases of penicillin allergy, 65% of PHS surgeons chose clindamycin, while 76% of ID specialists preferred a second-generation cephalosporin. The HS scenarios showing greatest uncertainty were elective bone or joint surgery without implants and elective joint surgery with capsule opening. In general, PHS surgeons would choose to give prophylaxis for >24h after surgery in 35% of cases, ID specialists would only in 22% ($p < 0.05$).
Discussion / Conclusion: Significant differences exist between ID specialists and PHS surgeons in the indication and management of perioperative antibiotic prophylaxis. Moreover, several commonly encountered procedures were associated with high uncertainty across both specialties. These findings underline the need for interdisciplinary, evidence-based guidelines to harmonize practice and improve patient care.

FM55 – Two cases of necrotic paronychia : A mpox complication

Marwa Shams[1], Mauro Maniglio[2], Matthias Cavassini[3], Justine Lattion[3] ([1]CHUV Centre hospitalier universitaire vaudois, Lausanne; [2]Balgrist University Hospital, Zürich; [3]Centre hospitalier universitaire vaudois, CHUV, Lausanne)

Introduction/Objective: Mpox, an orthopoxvirus first identified in humans in 1972, emerged as a human-to-human outbreak in 2022, particularly in Europe. This disease is recognized for its skin lesions and potential secondary bacterial infections. However, necrotic paronychia has been rarely described as a complication of mpox. We report two cases of necrotic paronychia following mpox infection, highlighting the importance of recognizing this rare manifestation.
Materials and Methods: Both patients were male, in their twenties, reporting sexual contact with men. They developed skin lesions within a week, including one at the nail edge. Over the following days, they experienced pain, redness, and swelling at the lesion site, eventually progressing to an abscess and ulceration. The first patient presented with no signs of systemic infection, while the second patient had extensive perianal lesions. After five and eight days, respectively, both patients sought medical attention. They were treated with lamellectomy and preemptive antibiotic therapy (amoxicillin/clavulanic acid). PCR confirmed mpox in the first patient, though secondary bacterial infections could not be analyzed due to biosecurity measures.
Results: Both patients showed improvement after the surgical and antibiotic treatments. No signs of septic arthritis, flexor sheath infections, or osteomyelitis were found. At 3 months post-surgery, both patients exhibited full nail regrowth and complete skin closure with satisfactory aesthetic results. Dressings and antibiotics were effective in controlling the infection and alleviating pain.
Conclusion: This report identifies necrotic paronychia as a rare but possible complication of mpox, which should

be recognized by hand surgeons and general practitioners. It is important to be aware of this complication and to take particular care in managing patients affected by mpox. Prompt treatment involving antibiotics, lamellectomy, and debridement is essential to prevent further necrotic tissue damage. Additionally, providing psychological support to patients is crucial in addressing the stress, stigma, and anxiety associated with mpox, a sexually transmitted disease.



Mpox image.png

FM56 – New suture material might allow a shorter overlapping zone in the Side-to-Side suture technique

Niklaus Stengele[1], Franziska Ziegenhain[2], Ivan Zderic[2], Silvia Schibli[3], Hans-Christoph Pape[4], Torsten Pastor[5], Tatjana Pastor[6] ([1]Kantonsspital Graubünden, Chur; [2]AO Research Institut Davos, Davos Platz; [3]Schweizer Paraplegiker Zentrum, Nottwil; [4]Universitätsspital Zürich, Zürich; [5]Wolhusen; [6]Bürgerspital Solothurn, Solothurn)

Background/Purpose
Key requirement for early post operative mobilization after tendon transfers is a strong tenorrhaphy. Historically, the Fridén suture recommends a 50mm overlap, which was shortened to 30mm in newer research. However, this is not always feasible in clinical practice due to short tendons or injuries. New self-contracting suture materials (SC) might achieve sufficient strength with less tendon overlap, potentially leading to a less prominent and shorter overlapping zone compared to conventional suture material (CS).
Aims
To biomechanically compare two tenorrhaphies with different overlap and suture material for their stiffness, yield load and maximum load capacity.
Methods
Twenty tendon transfer surgeries (flexor digitorum superficialis (FDS) II and III on flexor digitorum profundus (FDP) II and III respectively) were performed on tendons harvested from 5 pairs of fresh frozen human cadaveric forearms. The tendons were either assigned to a 30mm overlap side-to-side suture using a conventional suture (CS) or a 10mm overlap side-to-side suture using the new self-contracting suture material (SC) both with four cross-stitches on the sides of the tendons. Subsequently, all samples were subjected to destructive quasi-static uniaxial tensile load to failure tests for assessment of stiffness, yield load, and maximum load to failure.

Results
No significant differences were found in absolute stiffness (CS 39.4 N/mm, SD 10.61N/mm; SC 36.3 N/mm, SD 10.65N/mm; p=0.533) and yield force (CS 205.5N, SD 7.6N; SC 199N, SD 43.09N; p=0.619). Maximum load at failure was significantly higher for CS (CS 255.5N, SD 50.0N; SC 213N, SD 37.3N; p=0.002).
Normalizing the outcome measures to tendon cross-sectional area resulted in no significant differences for stiffness and yield force, but remained with significantly higher load to failure for CS (normalized on FDS; CS 3.9N/mm2, SD 1.89N/mm2; SC 3.39N/mm2, SD 1.38N/mm2, p=0.007). All tenorrhaphies failed by the FDS tendon pulling out of the suture, with some fibers shearing away.

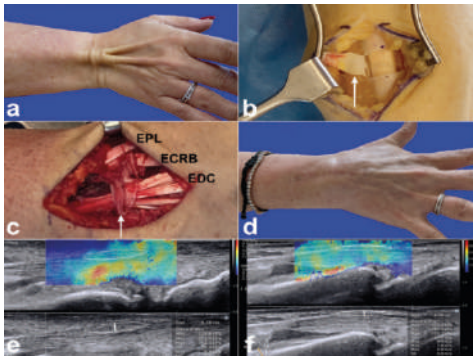
Conclusion
Less overlap in tendon transfer surgery of 10mm could be biomechanically viable if done with the high-strength, self-contracting suture material. However, this approach comes with slightly less resistance to maximum loads and should therefore only be used in clinical scenarios with short available tendon overlap.

FM57 – Wrist extensor retinaculum reconstruction with an ankle extensor retinaculum graft.

Marwa Shams[1], Julie Mercier[1], Yves Harder[1], Sébastien Durand[1] ([1]CHUV Centre hospitalier universitaire vaudois, Lausanne)

Introduction:
Rupture of the wrist extensor retinaculum is a rare condition that can lead to tendon instability, bowstringing and significantly impaired wrist function. Reconstruction of this structure is unusual and scarcely reported in the literature. We present two cases treated with a first-reported reconstruction technique using an ankle extensor retinaculum graft.
Materials and Methods:
Two patients were included in this study and underwent wrist extensor retinaculum reconstruction with a superior ankle extensor retinaculum graft. The first, a 46-year-old woman, with a complete rupture following repeated corticosteroid injections and dorsal wrist ganglion excision. The second, an 80-year-old woman, who underwent wrist extensor retinaculum excision due to a skin tumor invading the structure. Postoperative evaluation included grip strength, wrist range of motion, and ultrasound imaging with shear-wave elastography.
Results:
Both patients remained asymptomatic at the one year follow-up with complete resolution of bowstringing and restored tendon stability. Improvements in grip strength and wrist mobility were observed. Elastography confirmed reestablished tension in the reconstructed retinaculum, with biomechanical properties comparable to the non-operated healthy side. No adverse effects or donor-site complications were reported.
Discussion and Conclusion :
Using an ankle extensor retinaculum graft allowed us an

effective anatomical and biomechanical restoration of the wirst extensor retinaculum, yielding satisfactory functional outcomes without significant donor-site morbidity. This technique represents a promising alternative in scarce cases of retinaculum weakness.



(a, d) ED bowstringing correction. (b) Superior ER harvesting (arrow) with tibialis anterior exposure. (c) ER reconstruction (arrow) over ED, with radial EPL and ECRB. (e, f) Ultrasound and elastography of both sides showing extensor ER.

FM58 – Reconstruction of single or multiples pulleys after traumatic and iatrogenic injuries

Mauro Maniglio[1], Christina Wanivenhaus[2], Andreas Weber[1], Lea Estermann[1], Andreas Schweizer[1] ([1]Balgrist Universitätsklinik, Zürich; [2]USZ, Zürich)

Introduction
The pulley system is a fibro-osseous structure that allows biomechanical tendon gliding efficiency and nutrition [1]. There are open and closed pulley injuries. Acute, closed injuries can mostly be treated conservatively. In case of chronic lesions, the Pulleys should be reconstructed to correct bowstringing and flexion lag. This type of surgery is challenging and the evidence in the literature is limited to case reports and small case series. We want to describe a new technique of Pulley reconstruction using a tendon graft anchored in the remnants of the pulleys and present our case series of 23 patients.

Methods
23 patients with a mean age of 38 years after iatrogenic or traumatic rupture of one or more adjacent flexor tendon pulleys in the finger and distal palm, were treated with a pulley reconstruction with an autologous tendon graft. The minimum follow-up was 1 year. Outcome measures were collected pre-operative and at end of follow-up, including the presence of Bowstringing, flexion contractures, ROM, pain, satisfaction, and Jamar grip strength, compared to the uninjured side. An ultrasound was performed to measure the distance in between the phalanx and the tendons to quantify the bowstringing, these measurements were repeated at the end of follow-up.
Results
Mean time between injury and surgery was 22 months. Pre-operative all patients had a bowstringing and 68% had a contracture of at least one finger joint (mostly the PIP). In 9 patients the A1 was reconstructed, in 22 patients the A2, in 9 the A3 and in 11 the A4. In 5 patients only one pulley was reconstructed, in contrast to the other 18 where two or more pulleys were reconstructed. In all patients but one, the bowstringing could be corrected. The average flexion contracture could be reduced from 30° to 11°. A ROM in flexion/extension of average 79° were achieved. Grip strength on the Jamar Dynamometer showed only a slight reduction of 11% compared to the uninjured side. All patients but one were very satisfied or satisfied of the final result.
Conclusion
The reconstruction of single of multiple flexor tendon pulley using our reconstruction technique anchored in the remnants of the insufficient pulley, showed a successful correction of the bowstringing and an improve in finger function leading to high patient satisfaction.

Gong Show

FMG1 – Out-of-the-Box Arthroplasty: Transforming Trauma into Triumph

Fabienne Neff[1], Silvan Pasquinelli[1], Karolina Kasparkova[1], Esther Vögelin[1], Damian Sutter[1] ([1]Inselspital, Bern)

Objective
Traumatic injuries of the MCP joint with extensive destruction of the joint surface are challenging to treat. Possible treatment options are limited to arthrodesis and arthroplasty, which often result in moderate functional outcomes, or complex reconstructive procedures such as vascularized joint transfer. We present a case in which an unusual solution was chosen to treat a severely damaged MCP IV joint.
Methods
A 31-year-old male presented with a chainsaw injury to his left hand. In addition to a devascularization injury of the small finger, he suffered extensive articular damage to the MCP joint of the ring finger, including large osseous defects of the metacarpal head and the dorsal base of the proximal phalanx. Both collateral ligaments were torn and partially missing, while the palmar plate remained unaffected.
Emergency surgery included revascularization of the small finger. The MCP joint injury of the ring finger was addressed with the implantation of a dual mobility implant designed for CMC I joint arthroplasty. The remaining radial collateral ligaments were reinserted. Active and passive mobilization began five days after surgery; no weight-bearing was allowed until ten weeks postoperatively.
Results
While the healing of other affected structures was uneventful, PIP joint mobility of the ring finger remained limited due to extensive adhesions of the extensor apparatus to the dorsum of the proximal phalanx. Consequently, tenolysis of the extensor tendon was performed six months post-trauma, followed by intensive hand therapy. One year after revision surgery, the patient reported no pain, full active fist closure,

near-complete finger extension, and was able to continue working as a foreman.

Discussion

To our knowledge, reconstruction of an MCP joint using a carpo-metacarpal dual mobility joint implant has not been previously described in the literature, particularly not in an acute trauma setting. The patient demonstrated a good outcome in terms of pain relief and an excellent, mobile yet stable arthroplasty eight months after this severe joint-destructive trauma.

Rx Prothese.jpg

FMG2 – ATTR Amyloidosis in Hand Surgery: Current Status and Open Questions

Clara Marie Pecher[1], Michael Dietrich[2], Julia Sproedt[2] ([1]Stadtspital Zürich Waid, Zürich; [2]Stadtspital Zürich, Zürich)

Background

In amyloidosis, proteins misfold and aggregate in various tissues. In transthyretin amyloidosis (ATTR), misfolded transthyretin deposits in cardiac tissue, causing heart failure, conduction disorders, and cardiomyopathy. Previous studies suggest that symptoms such as carpal tunnel syndrome (CTS), trigger finger (TF), spinal stenosis, hearing loss, and biceps tendon rupture can be early signs of ATTR. ATTR occurs as wild-type (ATTRwt), common in the elderly, or as the rarer hereditary type (ATTRh). There is a wide range of genetic subtypes worldwide, each with distinct clinical manifestations. Bilateral CTS is observed in patients with ATTRwt and ATTRh. In the hereditary group, CTS often co-occurs with neuropathy, dysautonomia, and eye involvement. African American and Hispanic patients with the Val122Ile mutation often have more severe cardiac involvement and worse outcomes than those with ATTRwt.

Aims

We gathered data on ATTRwt and ATTRh subtypes and aimed to identify differences. We also re-evaluated biopsy size and tissue recommendations for Congo red stain in carpal tunnel and A1 pulley release.

Methods

We analyzed the literature and compared it to data collected at our clinic (May 2022-January 2023). A relatively low number of 3 out of 34 patients were ATTR-positive. We did not follow a diagnostic algorithm then. Therefore, we re-evaluated our patients for the presence of risk factors found in the literature. Since February 2023, we have performed biopsies in patients meeting these risk factors: bilateral CTS or TF in males >50y, females >60y.

Results

Among our 34 patients, 12 met the risk factors, 3 of these 12 tested positive, resulting in a positivity rate of 25%. Literature recommends a biopsy size >1cm2 of tenosynovium. Biopsy indication should be based on risk factors, not macroscopic findings. To date, we diagnosed 7 patients with ATTR, 5 underwent cardiological workup despite lacking clinical symptoms, 1 declined further workup, 1 is pending.

Conclusions

Long-term studies are needed to determine whether routine biopsies guided by clinical risk factors improve early diagnosis of ATTR. This depends on the likelihood of developing manifest ATTR after a positive biopsy. This study may have helped detect and possibly treat cardiac pathology even before clinical onset. Our recommendations on biopsy size (>1cm2 tenosynovium) and localization are consistent with existing literature and should be applied independently of macroscopic proliferation.

FMG3 – Splinting beyond the limit: Overcorrection of a simple extensor tendon injury

Jakub Vaclavek[1], Alain Schiffmann[2], Jan Plock[2], Florian Früh[2] ([1]KSA, Aarau; [2]Klinik für Plastische Chirurgie umfasst die Plastische Chirurgie, KSA, Aarau)

Introduction

Tendinous mallet finger is a common pathology with a well-established protocol for conservative treatment. In this case we present a patient where the conservative treatment led to complications that required surgical revision and intense occupational therapy.

Case Report

We present the case of a 15-year-old male, who sustained a trauma to the pinky of his left hand playing handball. He was referred by the pediatric emergency department with a diagnosis of a tendinous mallet finger. Conservative management was initiated using a Stack splint for 8 weeks. Upon follow-up, the patient presented with a splint in extension, resulting in an hyperextension deformity (40°) of the distal interphalangeal (DIP) joint and a concurrent flexion contracture (15°) of the proximal interphalangeal (PIP) joint. The patient reported no pain and full finger flexion was present.

Occupational therapy was initiated and a nighttime splint including the PIP joint was applied for another 8 weeks. While partial correction of the PIP contracture was achieved, the DIP hyperextension persisted. Clinical examination showed that the deformity was passively reducible. Sonographic evaluation demonstrated an intact central slip insertion with mild subluxation of the lateral bands. MRI was performed to further assess the extensor apparatus and revealed a shortened terminal slip.

Surgical correction was recommended and accepted by the family. A WALANT tenolysis with Z-lengthening of the shortened terminal extensor tendon was performed. Postoperatively, the patient developed adhesions,

resulting in limited DIP flexion. This was managed with intense hand therapy over 4 months. At the final 15 months follow-up, the patient demonstrated good flexion and extension of the digit, including complete fist closure. The range of motion in the DIP joint was extension/flexion 5/0/45°. Grip strength on Jamar Dynamometer revealed a symmetric strength of 45 kg.

Conclusion

This case highlights a rare iatrogenic complication of conservative mallet finger treatment. Immobilization in inadequate Stack splints can lead to a Boutonnière-like deformity. Surgical tendon lengthening and hand therapy restored full function. Early recognition and management are key to prevent permanent sequelae after accidental hyperextension splinting of finger joints.

7 months post surgery

After 8 weeks of splinting

FMG4 – Conquering a Giant: Double-Barrel Fibula Reconstruction for Extensive Distal Radius Giant Cell Tumor

Julian Nachtsheim[1], Judith Döringer[2], Esther Vögelin[2], Dominique Nellie Merky[2] ([1]Inselspital Bern, Bern; [2]Inselspital, Bern)

Introduction: Giant cell tumors of the bone present a significant challenge and often require complex reconstructive procedures, particularly in the upper extremity, to preserve both limb integrity and functionality.

Materials and Methods: We present the case of a 28-year-old female patient diagnosed with a biopsy-confirmed giant cell tumor of the right dominant distal radius in May 2020. The initial treatment involved intralesional curettage, Argon beam therapy, defect filling with PMMA, and combined osteosynthesis. After a favorable initial outcome, the patient reported a new, tender swelling on the dorsal aspect of the distal radius nearly one year postoperatively, which was diagnosed as a recurrence. In response, a year-long systemic therapy with Denosumab was initiated, stabilizing the tumor. However, the development of radiocarpal and distal radioulnar joint (DRUJ) arthritis, compounded by partially intra-articular cement placement, led to significant pain and functional impairment, making the patient unable to work and prompting her to opt for a second surgery. Thus, two years postoperatively, in June 2022, after interdisciplinary consultation and 3D planning, reconstruction of the right distal radius was performed using a free, microvascular osteocutaneous fibula flap from the left leg, applied in a double-barrel technique with simultaneous RSL fusion. The sigmoid notch was reconstructed using an ipsilateral Brachioradialis tendon strip, while the Palmaris Longus tendon was used to repair the TFCC and extensor retinaculum.

Results: Histological examination revealed clear bony and soft tissue resection margins. Seven months postoperatively, full consolidation of the fibula graft proximally and at the fibulo-lunate site was observed, with partial consolidation at the fibulo-scaphoid site. The patient's pain decreased rapidly and the range of motion and strength in her right wrist improved. At the most recent follow-up in May 2024, the patient expressed high satisfaction and reported no substantial limitations in her daily activities or professional life. There were no signs of local recurrence or lung metastases.

Conclusion: Through complex bone and soft tissue reconstruction, this young patient's destructive giant cell tumor of the right dominant radius was successfully treated curatively, despite recurrence, restoring a functional, pain-free limb.

FMG5 – A Search for the Best Outcomes in Scapholunate Dorsal Ganglions: Open, Arthroscopy, or Conservative?

Ana Lizandra Miguel[1], Dr. med. Giuseppe Broccoli[1], Dr. med. Abdul R. Jandali[1] ([1]Kantonsspital Winterthur, Winterthur)

Hypothesis

Scapholunate dorsal ganglions are among the most prevalent benign soft tissue masses in the dorsal wrist, accounting for 60-70% of such lesions. Despite their benign nature, they may cause chronic pain, functional impairments, and aesthetic concerns. Clinical management remains controversial, with no consensus on the optimal treatment. This review aims to identify which treatment offers the best outcomes in terms of lower recurrence rates, higher patient satisfaction, and fewer complications.

Material and Methods
A systematic review of the literature was conducted using PubMed, Embase, Scopus, and Cochrane Library, including studies from 2000 to 2024. Inclusion criteria: studies comparing at least two treatment options (conservative, open surgery, or arthroscopic resection), reporting recurrence rates, patient satisfaction, and functional or aesthetic outcomes. Thirty studies were included: 3 randomized controlled trials, 9 prospective cohorts, 12 retrospective studies, and 6 systematic reviews. Over 4,500 patients were evaluated, with follow-ups ranging from 12 months to 5 years.
Results

- **Conservative Treatment**: Includes observation, immobilization, or aspiration with or without corticosteroids. Mainly used in patients with mild symptoms or low aesthetic priority. Recurrence rates ranged from 7% to 72%, averaging around 45%
- **Open Surgery**: Involves complete excision of the ganglion via a dorsal incision. Recurrence rates ranged from 6% to 41%. Complete removal of the articular stalk reduces recurrence, but complications like scarring, joint stiffness, and pain affect patient satisfaction (65–75%)
- **Arthroscopic Resection**: A minimally invasive approach with recurrence rates ranging from 0% to 16%, averaging 7%. Benefits include less pain, faster recovery, and better aesthetic outcomes. Patient satisfaction exceeds 85%, with quicker functional recovery

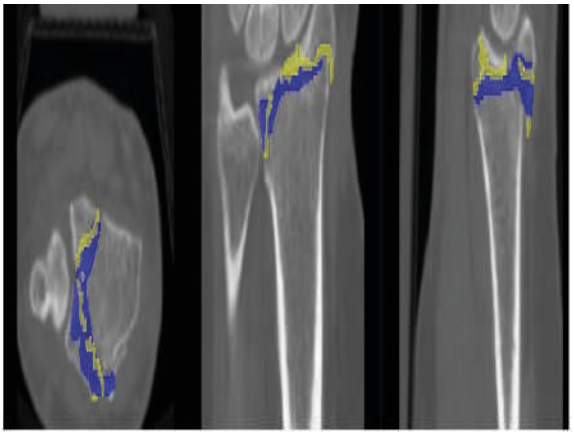
Conclusion
Arthroscopic resection offers the best results for scapholunate dorsal ganglions, with the lowest recurrence rates, faster recovery, and higher patient satisfaction. Open surgery remains an option for complex cases or when arthroscopy is unavailable. Conservative therapy, though non-invasive, has high recurrence rates and should be reserved for asymptomatic patients or those refusing surgery. Arthroscopic resection is recommended in well-equipped centers, while open surgery should be reserved for recurrent cases or when arthroscopy is not feasible. Conservative therapy should be used selectively.

FMG6 – Automated segmentation of fracture zones in distal radius fractures using deep learning methods

Prisca Alt[1], Julia Lobaton[2], Yannic Lais[2], Cédric Huwyler[2], Martin Melchior[2], Marco Keller[1] ([1]Handchirurgie, Klinik für Orthopädie, Traumatologie und Handchirurgie, Spital Limmattal, Schlieren; [2]Institut für Data Science, Fachhochschule Nordwestschweiz FHNW, Windisch)

Introduction: Numerous established classification systems for distal radius fractures and the corresponding surgical treatment strategies are based on the subdivision of intra-articular fractures into key fragments, which are separated by fracture lines or comminution zones. However, the morphology of the intervening fracture zones remains poorly understood. The aim of this study was to gain a deeper understanding of fracture zones in intra-articular distal radius fractures and to develop a deep learning-based method for the automated segmentation of these zones using computed tomography (CT) data.
Methods: A dataset comprising 59 manually segmented and annotated CT scans of intra-articular distal radius fractures served as the ground truth. Fracture zones were algorithmically extracted from segmentations of individual bone fragments and were visually validated on a sample basis. A 3D U-Net was then trained to segment fracture zones in new CT scans. Various preprocessing steps, such as data augmentation, region-of-interest (RoI) cropping, and targeted modifications of the fracture zones, were implemented to optimize the model's accuracy.
Results: The best-performing model achieved a Dice score of 0.2944 and an Intersection over Union (IoU) of 0.1784 for the task of automated fracture zone segmentation. These comparatively low values were attributed to the challenges associated with generating a reliable ground truth dataset.
Discussion: Fracture zones are often extremely difficult to delineate in CT scans, even for clinical experts, and frequently require interpolation based on professional experience during annotation. This contributes to a degree of uncertainty in the training data. Furthermore, the course of fracture zones follows a structural logic that is only partially discernible in CT imaging. Even fractures classified as identical can exhibit significantly different fracture zone morphologies.
Conclusion: Overall, this study demonstrates that the automated segmentation of fracture zones remains limited at present and is subject to substantial methodological and data-related challenges. Nonetheless, a deeper understanding of fracture zone morphology through automated segmentation techniques could significantly enhance precision in diagnosis, classification, and surgical planning.

Example of fracture zone 3D.JPG



Example of patient data (yellow: ground truth, blue: prediction).JPG

FMG7 – Attritional rupture of the Flexor Pollicis Longus Tendon by a Retrograde Scaphoid Screwing

Mélina Roulet[1], Daniel Estoppey[2], Attila Güleryüz[3], Thomas Mészaros[3] ([1]HFR - Hôpital Cantonal Fribourgeois, Fribourg; [2]Orthopaedic Surgery and Traumatology Department, Riviera-Chablais Hospital, Rennaz; [3]Orthopaedic Surgery and Traumatology Department, Fribourg University Hospital, Fribourg)

Introduction: Attritional rupture of the flexor pollicis longus (FPL) tendon has been described in cases of friction on a palmar distal radius osteosynthesis plates. We present a case of an attritional rupture of the FPL tendon by a retrograde scaphoid screw inserted two years earlier. Commonly accepted surgical therapy of attritional tendon rupture is tendon reconstruction or tendon transfer. In this particular case a primary suture was performed.

Materials and Methods:

A 43-year-old high-level rock climber suffered a displaced fracture of the middle third of the scaphoid. The pre-operative ct scan revealed a bone cyst in the distal part of the scaphoid (Figure 1A). Due to this cyst, the retrograde Herbert like screw was inserted close to the palmar cortex to have the best hold in the bone (Figure 1B). Fracture healing was achieved after 6 weeks and the post-operative follow up remained unremarkable without any patient complaint. Two years later during an inverted grip in climbing (finger and thumb flexion with wrist hyperextension), the patient experienced a rupture of the FPL tendon due to palmar overhand. The palmar radiocarpal joint capsule was perforated (Figure 2). The screw protruding from the palmar surface of the scaphoid was removed. The FPL rupture was oblique and acute in appearance. Contact between the two stumps was easy and did not induce excess flexion of the thumb, which is why we opted for a direct suture and not an intercalated graft. Direct suture of the FPL tendon was performed using the Lim-Tsai technique (Supramid) and reinforced with a Krakow suture (FiberWire).

Results:

At three months post-operatively, the thumb's range of motion was almost complete : MCP flexion/extension was 40-0-0° (50-0-0°) and IP flexion/extension was 70-0-0° (70-0-0°). Wrist flexion/extension was 60-0-60° (70-0-70°). The patient resumed climbing at six months post-operatively.

Conclusion:

A retrograde scaphoid screw with palmar overhang is a risk for attritional FPL tendon rupture. Even asymptomatic retrograde screw with palmar overhang should be removed. Attritional tendon rupture with limited attritional zone can be sutured primarily.

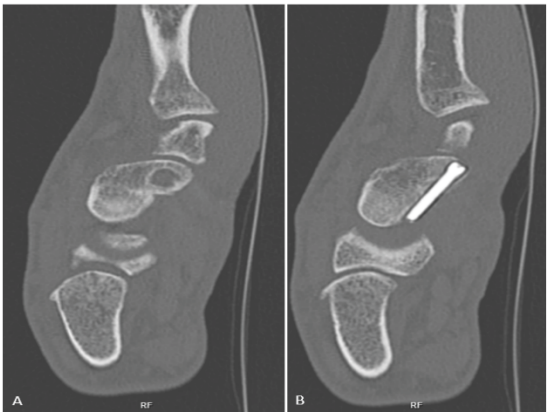


Figure 1. A. Bone cyst in the distal part of the scaphoid. B. Screw prominence on the proximal and palmar portion of the scaphoid.

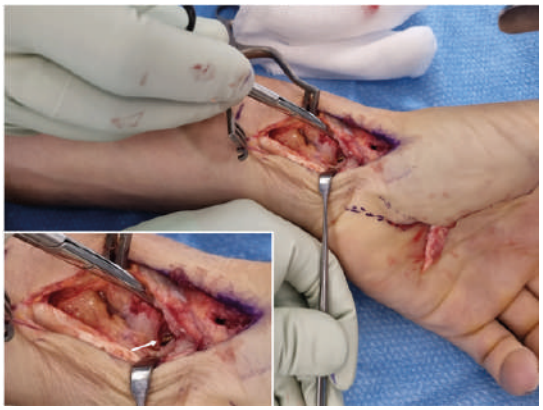


Figure 2. Intraoperative view, prominence of the screw on the proximal and palmar portion of the scaphoid (white arrow).

FMG8 – Hourglass like constriction of the posterior interosseous nerve : about a case

Damien Coppey[1], Nicolas Balagué[2] ([1]réseau santé valais, Orsières; [2]Réseau Santé Valais, Sierre)

Introduction :

Hourglass like constriction (HLC) is an uncommon spontaneous mononeuropathy that is typically characterised by a sudden onset of pain followed by palsy.

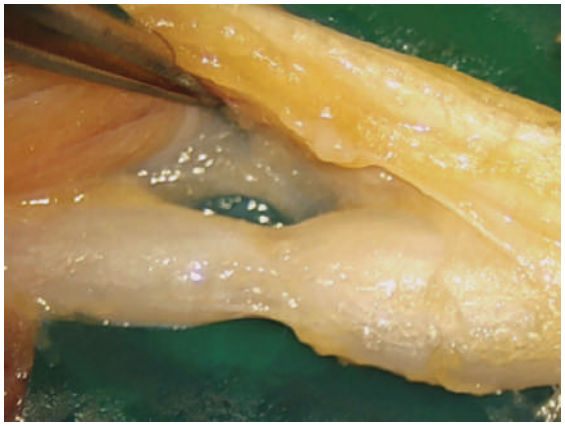
The origin of this disorder remains unclear and the rarity of the condition makes its diagnosis difficult and its management uncertain.

We report the case of a man who presented with acute left fingers drop due to HLC of the posterior interosseous nerve (PIN). Microneurolysis was performed after 6 months of conservative management without clinical evidence of recovery.
Our hypothesis is that microneurolysis is an effective procedure for treating patients with radiologically confirmed HCL.

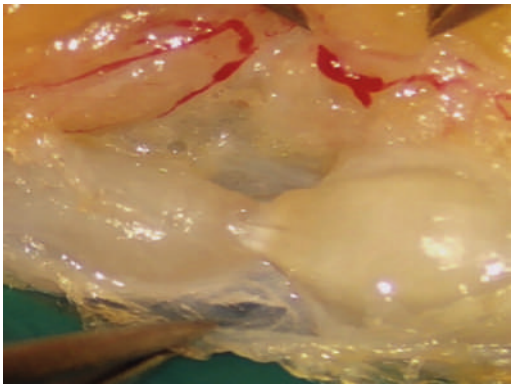
Material and methods :
We report the story of a 34 years old patient, who presented acute non-traumatic pain centered on the left forearm, non-responsive to oral medication (NSAID, Paracetamol) which lasted 48h and ended with a complete loss of fingers extension and weakness of wrist extension with radial deviation. The pain was radiating in the arm and shoulder and associated with burning sensation or electric shock without allodynia.
The patient was quickly addressed to a neurologist who conduct an ENMG exam which describes a focal motor neuropathy of the PIN. An echography done in the same time found and hourglass like constriction of the PIN 3cm distal to the elbow. After 4 months of physiotherapy, ergotherapy and electrical muscle stimulation, the clinical evaluation and the successive EMG exam were showing no evidence of recovery. In this setting microsurgical epi/perineurolysis was performed while taking care of preserving the axonal continuity.

Results :
2 months post operatively the patients was showing clinical evidence of recovery with wrist extension increasing from M4 to M5 and finger extension increasing from M0 to M2. Control EMG was not yet performed and will be repeated at 3 and 6 months after neurolysis.

Conclusion :
Our conclusion is that microsurgical epi/perineurolysis is an effective procedure in the setting of HCL. Further follow up is still needed to confirm that hypothesis. Literature review confirmed that operative treatment gave better results than conservative treatment in patients with HCL.



Hourglass like constriction of the PIN



Hourglass like constriction after epi/perineurolysis

FMG9 – Correction of rheumatoid thumb deformity by modified extensor pollicis longus rerouting technique.

Thomas Orthmann[1], Sébastien Durand[1], Yves Harder[1]
([1]Centre hospitalier universitaire vaudois, Lausanne)

Abstract

Introduction
Chronic synovitis of the firtst metacarpophalangeal (MP) joint stretches out the dorsal capsule, extensor pollicis brevis tendon (EPB), and ulnar collateral ligament, leading to a characteristic deformity involving MP joint flexion, metacarpal adduction, and medial instability of the MP joint. Hyperextension or instability of the interphalangeal joint (IP) is often associated. The aim of these 2 cases is to present a modified surgical technique to treat the deformity.

Material and methods
We present 2 patients with rheumatoid thumb deformity that have been treated using the modified extensor pollicis longus (EPL) rerouting technique. The EPL was split longitudinally and divided distally. Synovial tissue surrounding MP joint was excised. A transosseous tunnel was drilled from dorsal to ulnar at the base of the proximal phalanx, through which the EPL was passed. Tension was adjusted to maintain the MP joint in 10° of flexion and fixed with a 2.5 mm interference screw inserted dorsally. The remaining EPL tendon was then secured on the ulnar side of the metacarpal head to reconstruct the ulnar collateral ligament (see Figure).

Results
Complete IP joint range of motion was preserved in one case due to the insertion of the EPB on the distal phalanx. At 6 months after surgery, both patients were pain-free with no residual MP joint instability and demonstrated good first web space opening, improved pinch strength and increased MP joint range of motion.

Discussion
Surgeons should be aware that the insertion of the EPB on the distal phalanx is more common in patients with rheumatoid thumb boutonnière deformity than in the

general population (Okita et al., 2019). The proposed technique was inspired by the EPL rerouting method in boutonniere deformity (Nalebuff, 1984) and by procedure combining reconstruction of the ulnar collateral ligament of the MP joint of the thumb with restoration of opposition (Su et al., 1972). The modified technique restores both active extension and stabilizes the MP joint of the thumb.

collage PR.jpg

FMG10 – Why 'Adelmann' Should Be 'Heister-Adelmann' and Favored Also for Ray II Procedures

Matteo Meroni[1], Dorrit Winterholer[1], Elmar Fritsche[1] ([1]Luzerner Kantonsspital, Luzern)

Introduction
Recent publications see the controversy between primary and secondary transmetacarpal resection (also known as the “Adelmann” operation) versus finger amputation at the level of the proximal phalanx in favor of the transmetacarpal resection in the case of a functionally disturbing basal phalanx stump or, for aesthetic reasons. The available publications do not differentiate significantly between the resections of the rays II-V. This paper examines cases of II ray resections and presents the results. It will be checked whether the results agree with the current literature.
Material and method
We compiled 7 cases of primary and secondary ray resections (3 primary/4 secondary) of the II ray at the mid-metacarpal level and examined the long-term results in regards of function, including loss of strength in strength grip and fine grip, and pain. The results are presented.
Results:
The loss of strength in the transmetcarpal (II ray) amputee hands was on average 30% for both the strenght grip and the fine grip. Relevant neuroma pain was evident only in one of the cases. All patients would have the procedure performed again. The results are in good agreement with the, albeit sparse, literature.
Discussion:
In the past, transmetacarpal resections were often not recommended because the procedure may lead to a greater loss of hand strength than finger amputation at the level of the proximal phalanx. Our follow-up study in isolated cases with ray II resection cannot confirm this belief. The loss of strength was on average 30% for different grip types and is therefore of the same order of magnitude as the loss of strength reported in the literature for isolated index finger amputation at the level of the proximal phalanx. We can therefore recommend transmetacarpal resection in both primary and secondary cases, such as Adelmannn did already in 1852. However, Adelmann himself never performed this procedure for ray II, but he only recommended it. Moreover, Adelmann wrote in his paper in 1882, that the first description of this kind of operation must be attributed to Lorenz Heister and therefore the operation should be called “Heister-Adelmann” operation.


Illustrirte
Medizinische Zeitung.
Band II. December 1852. Heft 6.
A. Originalabhandlungen.
17.
Ueber Wegnahme der Finger durch Amputation im betreffenden Mittelhandknochen.

Figure.png

Freie Mitteilungen SGHR / Communications libre SSRM

Freie Mitteilungen / Communications libres I:

FM60 – Treatment of a Patient with Humerus fracture, Radial Nerve Lesion and CRPS : A Case Study

Matteo Malacrida[1] ([1]Hand Therapist - Ergotherapist, Como IT)

In this case study is exposed the care of a middle-aged patient who received arm trauma with humerus fracture and radial nerve injury. The case is complex, given the delay in taking charge by a hand therapist and due to comorbidities including CRPS.
The patient presented at the first valutation a serious clinical picture:

- Evident deficit of shoulder mobility with pain and feeling of heaviness.

- Active and passive mobility of the elbow: Flexion/Extension: 90°/50°/0°, Prone/Supination: 20°/20°.
- Evident Drop hand with complete absence of wrist, hand and finger extension, minimum activation of the flexor muscles of the wrist, hand and fingers (no passive or active mobility).
- Thumb mobility: Kapandji 2.
- Severe paresthesia on the back of the hand and forearm with hypersensitivity especially on the back of the hand.

The presentation will guide from the patient's admission three months after the operation with a severe disability (Quickdash 97/100 and PRWHE of 99/100).
The functional aspects, limits during ADL, joint mobility and strength have been considered periodically (every two months) with datas and validated rating scales including Quickdash scale, Patient rated wrist/hand evaluation and 9 Holes.
Adaptation of therapy and splints during the healing phases will be exposed with reference tables and images.
The presentation will follow the therapeutic choices and the adaptation of therapy and splints manufacturing with the improvement of symptoms and reacquisition of mobility, functionality and strength of the upper limb up.
The discussion will reach to the patient's reintegration into work, currently a watchmaker at 50% with an improvement at 46/100 for the Quickdash and 42 /100 for the PRWHE.
Informed consent was signed on the collection of data and their use with exhaustive explanations on the procedure, purpose and destination of the case study.

Progressive-static brace for elbow extension

Dynamic brace for fingers flexion

Functional splint for radial palsy

FM61 – Verlaufsorientierte Dokumentation der Nervenerholung mit dem Rosén-Score: ein Fallbericht

Iris Schütz[1], Nadine Schulz[1] ([1]UniversitätsSpital Zürich, Zürich)

Hintergrund:
Komplexe Verletzungen peripherer Nerven führen zu Sensibilitätsverlust, motorischen Einschränkungen sowie häufig zu Schmerzen wie Hyperästhesie und Kälteintoleranz. Diese beeinträchtigen die Handfunktion und die Aktivitäten des täglichen Lebens der Betroffenen erheblich (1).
Für die Planung gezielter therapeutischer Massnahmen und die Verlaufsdokumentation der Nervenerholung ist eine strukturierte Beurteilung essenziell (2). Der Rosén-Score bietet hierfür ein standardisiertes Instrument zur umfassenden Erfassung von Sensorik, Motorik und schmerzassoziierten Beschwerden.

Ziel:
Die Anwendung des Rosén-Scores zur strukturierten Beurteilung und Dokumentation der Nervenregeneration wird vorgestellt und anhand eines Fallbeispiels einer komplexen Medianusverletzung exemplarisch erläutert.

Methode:
Anhand des Fallbeispiels werden die funktionellen Auswirkungen und der Verlauf der Erholung aufgezeigt. Die Befunde wurden in regelmässigen Intervallen erhoben und mit Hilfe des Rosén-Scores graphisch dargestellt. Ergänzend wurden die einzelnen Assessments durch Videoaufnahmen und Fotos veranschaulicht.

Ergebnisse/Implikation:
Der Rosén-Score ermöglicht eine differenzierte und verlaufsorientierte Beurteilung der funktionellen Erholung sowie des Outcomes nach Nervennaht des Nervus medianus oder ulnaris auf Höhe des Handgelenks oder des distalen Unterarms. Er eignet sich sowohl für die wissenschaftliche Dokumentation als auch für den klinischen Alltag.

Literatur

1. Rosén B, Lundborg G. A model instrument for the documentation of outcome after nerve repair. Journal of Hand Surgery. 2000; 25(3):535-43.
2. Rosén B, Lundborg G. The long term recovery curve in adults after median or ulnar nerve repair: a reference interval. The Journal of Hand Surgery: British & European Volume. 2001; 26(3):196-200.

FM61 – Documentation de suivi de la régénération nerveuse à l'aide du Rosén-Score : une étude de cas

Iris Schütz[1], Nadine Schulz[1] ([1]Hôpital universitaire de Zurich, Zurich)

Contexte :
Les lésions complexes des nerfs périphériques entraînent une perte de la sensibilité, des limitations de la motricité ainsi que de fréquentes douleurs telles que l'hyperesthésie et l'intolérance au froid. Cela affecte considérablement la fonction de la main et les activités quotidiennes des personnes concernées (1).
Une évaluation structurée est essentielle pour planifier des mesures thérapeutiques ciblées et documenter l'évolution de la régénération nerveuse (2). Le Rosén-Score offre à cet effet un instrument standardisé permettant d'évaluer de manière exhaustive la sensibilité, la motricité et les troubles associés à la douleur.

Objectif :
L'utilisation du Rosén-Score pour une évaluation structurée et une documentation de la régénération nerveuse est présentée et expliquée à travers un exemple concret illustrant une lésion complexe du nerf médian.

Méthodologie :
L'impact fonctionnel et le déroulement de la régénération sont illustrés par une étude de cas. Les résultats ont été recueillis à intervalles réguliers et représentés graphiquement à l'aide du Rosén-Score. Les différentes évaluations ont été complétées par des enregistrements vidéo et des photos.

Résultats/implication pour la pratique :
Le Rosén-Score permet une évaluation différenciée et orientée sur l'évolution de la récupération fonctionnelle ainsi que sur les résultats après une suture des nerfs médian ou ulnaire à la hauteur du poignet ou de l'avant-bras distal. Il convient aussi bien à la documentation scientifique qu'à la pratique clinique quotidienne.

Littérature

1. Rosén B, Lundborg G. A model instrument for the documentation of outcome after nerve repair. Journal of Hand Surgery. 2000; 25(3):535-43.
2. Rosén B, Lundborg G. The long term recovery curve in adults after median or ulnar nerve repair: a reference interval. The Journal of Hand Surgery: British & European Volume. 2001; 26(3):196-200.

FM62 – Unusual nerve compression from a surgical and therapeutic point of view

Patricia Kammermann[1], Lena Fuest[1] ([1]Berner Handzentrum, Bern)

Hintergrund
Die Fraktur des Hamulus ossis hamati ist eine seltene und oft übersehene Verletzung. Aufgrund der anatomischen Nähe zum Ramus profundes des N. ulnaris kann eine Fraktur zu dessen Irritation oder Kompression in der Loge de Guyon führen. Dies kann motorische Defizite, insbesondere eine Schwäche der intrinsischen Muskulatur verursachen und führt zu einer gestörten Feinmotorik und möglicherweise einer Krallenstellung der Digiti IV und V.
Ziel
Ziel dieser Fallpräsentation ist es, das Bewusstsein für die potenzielle Verbindung zwischen einer Hamulusfraktur und einer Ulnarisneuropathie zu schärfen. Insbesondere soll verdeutlicht werden, dass bei isolierten motorischen Defiziten des N. ulnaris ohne sensible Ausfälle gezielt nach einer ossären Ursache gesucht werden sollte.
Methodik
Ein 21-jähriger Patient stürzte im August 2024 mit dem Velo auf die linke Hand. Posttraumatisch zeigte sich ein schmerzloses Extensionsdefizit in den PIP Gelenken IV und V. Konventionell radiologisch wurde zunächst eine Fraktur und im Verlauf sonographisch eine Sehnenläsion ausgeschlossen. Klinisch imponierte nach knapp drei Monaten eine Atrophie im Bereich des Interossei dorsales I. Im späteren Verlauf wurde computertomographisch eine Fraktur an der Basis des Hamulus ossis hamatum nachgewiesen.
Therapeutisch versuchte der Patient mittels Elektrotherapie die intrinsische Muskulatur zu kräftigen sowie die Fingergelenke passiv freizuhalten. Zudem wurden Strategien für die Alltagsbewältigung vermittelt. Wenige Wochen nach der Neurolyse und der Osteosynthese vom Hamulus ossis hamatum erholte sich die Funktion vom N. ulnaris vollständig.
Resultate
Ein motorischer Ausfall des N. ulnaris kann auf eine unerkannte Fraktur des Hamulus ossis hamati zurückzuführen sein. Kleine Nuance in der Anamnese

und klinischen Untersuchung machen hier den Unterschied aus und können im Zusammenspiel zwischen Handchirurg:in und Therapeut:in zur raschen Diagnosestellung beitragen um gezielt der muskulären Atrophie entgegenzuwirken. Eine enge Zusammenarbeit und eine direkte Kommunikation zwischen Handchirurgie und Handtherapie ist unumgänglich.

Literatur

- Tian, A., & Goldfarb, C. A. (2021). Hook of Hamate Fractures. *Hand clinics*, *37*(4), 545-552. doi: 10.1016/j.hcl.2021.06.013.
- Davis, D. L. (2017). Hook of the hamate: the spectrum of often missed pathologic findings. *American Journal of Roentgenology*, *209*(5), 1110-1118. doi: 10.2214/AJR.17.18043.

FM62 – Unusual nerve compression from a surgical and therapeutic point of view

Patricia Kammermann[1], Lena Fuest[1] ([1]Berner Handzentrum, Berne)

Contexte

La fracture de l'hamulus ossis hamati est une lésion rare et souvent négligée. En raison de sa proximité anatomique avec le rameau profond du nerf ulnaire, une fracture peut provoquer une irritation ou une compression dans la loge de Guyon. Cela peut causer un déficit moteur, en particulier une faiblesse de la musculature intrinsèque, entraîner une perturbation de la motricité fine ainsi qu'une possible déformation en griffe des quatrième et cinquième doigts.

Objectif

L'objectif de cette étude de cas est de faire prendre conscience d'un lien potentiel entre une fracture de l'hamulus et une neuropathie ulnaire. Il s'agit notamment de souligner qu'en cas de déficit moteur isolé du nerf ulnaire sans déficit sensitif, il convient de rechercher spécifiquement une origine osseuse.

Méthodologie

En août 2024, un patient âgé de 21 ans a fait une chute à vélo sur sa main gauche. L'évaluation post-traumatique montrait une perte d'extension indolore de l'articulation PIP des doigts 4 et 5. Une radiographie conventionnelle a d'abord permis d'exclure une fracture, puis une échographie a permis d'écarter une lésion tendineuse. Près de trois mois plus tard, une atrophie au niveau du premier interosseux dorsal était visible cliniquement. Plus tard, une tomodensitométrie a révélé une fracture à la base de l'hamulus ossis hamati.
Sur le plan thérapeutique, le patient a tenté de renforcer sa musculature intrinsèque à l'aide de l'électrothérapie ainsi que de maintenir la mobilité passive de ses articulations digitales. Des stratégies pour gérer le quotidien lui ont également été enseignées.
Quelques semaines après la neurolyse et l'ostéosynthèse de l'hamulus ossis hamatum, la fonction du nerf ulnaire s'est totalement rétablie.

Résultats

Un déficit moteur du nerf ulnaire peut être dû à une fracture non diagnostiquée de l'hamulus ossis hamati. De petites nuances dans l'anamnèse et l'examen clinique font ici toute la différence et peuvent contribuer, grâce à la collaboration entre le chirurgien et le thérapeute de la main, à établir rapidement un diagnostic afin de lutter de manière ciblée contre l'atrophie musculaire. Une collaboration étroite et une communication directe entre la chirurgie et la thérapie de la main sont indispensables.

Littérature

- Tian, A., & Goldfarb, C. A. (2021). Hook of Hamate Fractures. *Hand clinics*, *37*(4), 545-552. doi: 10.1016/j.hcl.2021.06.013.
- Davis, D. L. (2017). Hook of the hamate: the spectrum of often missed pathologic findings. *American Journal of Roentgenology*, *209*(5), 1110-1118. doi: 10.2214/AJR.17.18043.

Freie Mitteilungen / Communications libres II:

FM65 – Von der Diagnose zur Effizienz: Retrospektive Analyse handtherapeutischer Assessments und Konzepte

Bernadette Tobler-Ammann[1], Astrid Schmid[1] ([1]Ergotherapie Hand, Thun)

Einleitung:

Angesichts des Fachkräftemangels und steigender Patientenzahlen stehen Handtherapiepraxen vor der Herausforderung, eine qualitativ hochwertige Versorgung effizient zu gestalten. Ein Überblick über die häufigsten Diagnosen kann helfen, gezielte, alltagsnahe Assessments und Behandlungsstrategien zu entwickeln. Ziel dieser retrospektiven Analyse war es, das Diagnosespektrum unserer ambulanten Handtherapiepraxis zu erfassen und daraus praxisnahe Konsequenzen für Assessmentauswahl und Nachbehandlungsschemata abzuleiten.

Methodik:

Alle Behandlungsfälle von Januar 2016 bis Mai 2024 wurden aus der digitalen Dokumentation extrahiert und nach Diagnosen kategorisiert. Die fünf häufigsten Einzeldiagnosen wurden ermittelt. Parallel dazu wurde reflektiert, welche Assessments sich für diese Hauptgruppen eignen und wie sie zur Förderung von Selbstständigkeit und Effizienz beitragen können.

Resultate:

Die häufigsten Diagnosen waren: 1) Radiusfrakturen, 2) Strecksehnenverletzungen, 3) Tendinopathien, 4) Fingerfrakturen (P1–P3), 5) MCP-Frakturen (dig 2–5). Für diese heterogenen Diagnosen wurden die Single Assessment Numeric Evaluation (SANE) und die Patient-Specific Functional Scale (PSFS) als alltagsnahe, zeitsparende Instrumente identifiziert [(1,2)]. Beide können während der Sitzung zusammen mit den Patient:innen ausgefüllt werden, liefern direktes Feedback und fördern eine gezielte Therapieanpassung. Abgeleitet aus der Diagnoseanalyse wurde 2023 zudem ein neues Nachbehandlungsprotokoll für MCP-Frakturen

eingeführt, welches zu einer deutlichen Reduktion der Therapieeinheiten pro Fall führte.
Implikationen für die Praxis:
Die Verbindung von Diagnoseanalyse und gezielter Assessmentwahl bietet eine datengestützte Grundlage für ressourcenschonende, klientenzentrierte Therapien. SANE und PSFS ermöglichen eine zeitsparende Dokumentation, fördern die Patient:innenpartizipation und unterstützen strukturiertes Heimtraining. Der Fokus auf die Top-5-Diagnosen bleibt auch in Zukunft zentral, um weitere Nachbehandlungsprotokolle für eine wirksame Handtherapie zu entwickeln.

1. Gire et al (2020). Single Assessment Numeric Evaluation (SANE) in Hand Surgery: Does a One-Question Outcome Instrument Compare Favorably? J Hand Surg Am. Jul;45(7):589-596.
2. Pathak et al (2022). Measurement Properties of the Patient-Specific Functional Scale and Its Current Uses: An Updated Systematic Review of 57 Studies Using COSMIN Guidelines. J Orthop Sports Phys Ther. May;52(5):262-275.

FM65 – Du diagnostic à l'efficacité : analyse rétrospective des évaluations et concepts thérapeutiques en rééducation de la main

Bernadette Tobler-Ammann[1], Astrid Schmid[1]
([1]Ergotherapie Hand, Thoune)

Introduction :
Compte tenu de la pénurie de personnel qualifié et du nombre croissant de patients, les cabinets de thérapie de la main sont confrontés au défi d'organiser efficacement des soins de haute qualité. Un aperçu des diagnostics les plus fréquents peut aider à développer des évaluations et des stratégies de traitement ciblées et liées aux activités quotidiennes. L'objectif de cette analyse rétrospective était de recenser l'éventail des diagnostics de notre cabinet de thérapie de la main ambulatoire et d'en tirer les conclusions pratiques pour le choix des évaluations et les protocoles de traitement.
Méthodologie :
Tous les cas traités entre janvier 2016 et mai 2024 ont été extraits de la documentation numérique et catégorisés par diagnostic. Les cinq diagnostics isolés les plus fréquents ont été déterminés. En parallèle, une réflexion a été menée sur les évaluations appropriées à ces groupes principaux et sur la manière dont elles peuvent contribuer à la promotion de l'autonomie et de l'efficacité.
Résultats :
Les diagnostics les plus fréquents étaient : 1) fractures du radius, 2) lésions des tendons extenseurs, 3) tendinopathies, 4) fractures des doigts (P1-3), 5) fractures MCP (D2-5). Pour ces diagnostics hétérogènes, la Single Assessment Numeric Evaluation (SANE) et la Patient-Specific Functional Scale (PSFS) ont été identifiées comme des instruments rapides à utiliser et ayant un lien avec la vie quotidienne [(1,2)]. Les deux évaluations peuvent être remplies avec le patient pendant la séance, fournissent un feedback direct et permettent une adaptation ciblée du traitement. Sur la base de l'analyse des diagnostics, un nouveau protocole de traitement pour les fractures des métacarpiens a également été introduit en 2023, ce qui a entraîné une réduction significative du nombre de séances de thérapie par cas.
Implication pour la pratique :
La combinaison de l'analyse du diagnostic et du choix ciblé des évaluations fournit une base fondée sur des données pour des thérapies préservant les ressources et se concentrant sur le client. La SANE et la PSFS permettent une documentation rapide, favorisent la participation du patient et soutiennent un programme d'exercices à domicile structuré. L'accent mis sur les cinq diagnostics les plus fréquents restera central à l'avenir afin de développer d'autres protocoles de traitement pour une rééducation de la main efficace.

1. Gire et al (2020). Single Assessment Numeric Evaluation (SANE) in Hand Surgery: Does a One-Question Outcome Instrument Compare Favorably? J Hand Surg Am. Jul;45(7):589-596.
2. Pathak et al (2022). Measurement Properties of the Patient-Specific Functional Scale and Its Current Uses: An Updated Systematic Review of 57 Studies Using COSMIN Guidelines. J Orthop Sports Phys Ther. May;52(5):262-275.

FM66 – Using Artificial Intelligence for Retrospective Analysis of Clinical Data in Hand Therapy

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Background and Objectives:
Hand rehabilitation has traditionally been based on clinical observation, therapeutic experience, and progressive case documentation. However, the increasing volume of data collected in therapy centers often remains under-analyzed due to a lack of time, resources, or dedicated tools. In this context, Artificial Intelligence (AI) offers new opportunities to extract clinical value from existing data.
The objective of this study was to evaluate the effectiveness of AI as a tool for retrospective analysis, processing clinical reports to identify complications and failures in clinical practice.

Materials and Methods:
Clinical reports from 250 patients treated between 2021 and 2025 were analyzed, each with at least three documented evaluations: at the beginning, during, and at the end of the rehabilitation program.
The data processing was carried out using ChatGPT, aiming to automate the synthesis and analysis of information contained in the reports.

Specific requests were formulated to extract statistical data regarding:
– distribution of treated diagnoses;
– average healing times based on pathology;
– quality of functional recovery;
– total active motion (TAM);
– residual strength compared to the contralateral limb;
– residual pain level measured using the VAS scale.
ChatGPT was employed as a support tool to structure and synthesize the clinical information, providing aggregated, comparative, and retrospective insights.

Results:
The analysis highlighted correlations between therapeutic approaches, patient adherence, and clinical outcomes. Recurring patterns were identified in cases of poor clinical efficacy, often associated with reduced active participation or comorbidities. The use of AI facilitated the early identification of potential critical issues within rehabilitation pathways.
Conclusions:
AI proved to be a promising tool for the retrospective analysis of real-world clinical data, enabling large-scale evaluations and supporting the development of more effective and personalized decision-making models in hand rehabilitation.

FM67 – Reduce to the Max: From 37 to 4 questions in the Michigan Hand Outcomes Questionnaire

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Introduction: The Michigan Hand Outcomes Questionnaire (MHQ) has been criticized for its length, with 37 questions across 6 subscales, making it time-consuming for patients to complete. This study aims to shorten the MHQ by developing an electronic decision tree (DT) version.
Methods: MHQ scores were prospectively collected from 72'869 patients with different hand conditions at Xpert Clinics, the Netherlands. The mean age was 58 years, 59% were female, and the treatment was either surgical (71%) or conservative (29%). Using a Chi-Squared-Automatic Interaction Detection algorithm, separate DTs were created for each MHQ subscale and the MHQ total score. Additionally, the total score was calculated by summing the scores from DT versions of each subscale. We used 75% of the data for training and 25% for testing the developed models. We selected the DT for each subscale and for the total score with as few items as possible with the criteria that 1) the Intraclass Correlation Coefficient (ICC) with the original score was greater than 0.9 and 2) the median absolute error between the predicted and original scores was below the minimally important difference.
Results: The number of questions for the total score decreased from 37 to 16 when calculated by summing the DT subscales, and from 37 to 4 when predicted by a separate DT. The number of questions for the DT subscales was reduced by 20% to 83% compared to the original questionnaire. The ICC between the original and predicted DT scores ranged from 0.92 to 0.99, with a median absolute error between 0 and 4.2 points. All scores were well below their respective minimally important differences. We created a free online tool to calculate the MHQ based on the developed algorithm.
Conclusion: The 37-item MHQ could be reduced to 16 questions when all the subscales were determined and even to 4 items if only the total score was calculated, while maintaining high accuracy. This development is in line with current advances in patient-reported outcome measures which aim to shorten questionnaires and tailor them to patients using specific algorithms. This shorter version, accessible in an online tool, can improve usability, allowing more doctors to assess patients' health and tailor treatments to meet patients' needs.

FM68 – MAT AssessTherapy App – Handbefundung digital auf den Punkt gebracht

Andrea Moser[1] ([1]UKH Klagenfurt - Österreich, St. Veit An Der Glan AT)

Eine Handtherapeutin stellte sich die Frage: Wie lässt sich der Fortschritt in der Handtherapie so darstellen, dass er für alle Beteiligten verständlich, greifbar und aussagekräftig ist – für Patient*innen, Ärzt*innen, Kolleg*innen und Kostenträger? Aus dieser Idee entstand ein strukturierter Papierbogen, auf dem Parameter wie Kraft, Beweglichkeit, Geschicklichkeit, Schmerz und alltagsbezogene Funktion dokumentiert und mithilfe von Ampelfarben visuell aufbereitet wurden.
Dieser Bogen wurde im Praxisalltag erprobt und mithilfe eines Fragebogens evaluiert, den 300 Expertinnen aus der Handtherapie ausfüllten. Die Ergebnisse wurden in *ErgoScience* veröffentlicht. Am Ende des Artikels stand eine klare Vision: aus dem Papierbogen eine digitale, alltagstaugliche Lösung zu entwickeln. Diese Vision wurde 2024 beim *Shark Tank* der FESSH in Rotterdam eingereicht – und mit dem 2. Platz ausgezeichnet.
So entstand *AssessTherapy*: eine Web-App, die Therapeut*innen bei der Auswahl valider Tests unterstützt, automatisch Mittelwerte berechnet, Fortschritte visuell darstellt und ein strukturiertes Befundblatt auf Knopfdruck erstellt.
*Patient*innen profitieren durch eine verständliche, motivierende Darstellung ihrer Fortschritte.
Therapeut*innen gewinnen Zeit, Übersicht – und eine moderne Form der Dokumentation.
Dieses Projekt wurde nicht von einem Konzern oder Pharmaunternehmen gefördert, sondern von Therapeut*innen selbst entwickelt: ohne Lobby, aber mit Fachwissen, Herzblut und unzähligen ehrenamtlichen Stunden. Weil es Zeit ist, dass

therapeutische Qualität messbar, sichtbar und als Teil professioneller Versorgung anerkannt wird. *AssessTherapy* macht genau das möglich: Es bringt uns auf Augenhöhe mit anderen Gesundheitsberufen, stärkt unsere Berufsidentität – und spricht auch die nächste Generation von Therapeut*innen an. Denn wer digital sichtbar macht, was Therapie bewirkt, verändert nicht nur die Dokumentation, sondern auch das Selbstverständnis einer ganzen Berufsgruppe.

FM68 – MAT AssessTherapy App – faire le point sur le diagnostic digitalisé de la main

Andrea Moser[1] ([1]UKH Klagenfurt - Österreich, St. Veit An Der Glan AT)

Une thérapeute de la main s'est posé la question suivante : comment présenter les progrès réalisés en rééducation de la main de manière compréhensible, tangible et significative pour toutes les parties concernées, à savoir les patients, les médecins, les collègues et les organismes payeurs ? Cette idée a donné naissance à une fiche structurée sur laquelle documenter des paramètres tels que la force, la mobilité, la dextérité, la douleur et les fonctions en rapport avec la vie quotidienne, et de les représenter visuellement à l'aide des couleurs des feux de signalisation.
Cette fiche a été testée dans la pratique quotidienne et évaluée à l'aide d'un questionnaire rempli par 300 experts en thérapie de la main. Les résultats ont été publiés dans *ErgoScience*. A la fin de l'article, une vision claire se dégageait : développer à partir de la feuille de papier une solution numérique, adaptée à un usage quotidien. Ce projet a été soumis en 2024 lors du *Shark Tank* de la FESSH à Rotterdam et a remporté la deuxième place.
C'est ainsi qu'est née *AssessTherapy* : une application internet qui *soutient le thérapeute dans la sélection de tests validés, calcule les moyennes automatiquement, représente les progrès de manière visuelle et crée une fiche de résultats structurée en un clic*.
Les patients bénéficient d'une présentation compréhensible et motivante de leurs progrès. Les thérapeutes gagnent du temps, ont une vue d'ensemble et disposent d'un moyen de documentation moderne.
Ce projet n'a pas été encouragé par un groupe industriel ou une entreprise pharmaceutique, mais par des thérapeutes l'ayant eux-mêmes développés : sans lobby, mais avec leur expertise, leur passion et d'innombrables heures bénévoles. Parce qu'il est temps que la qualité thérapeutique soit mesurable, visible, et reconnue comme faisant partie intégrante des soins professionnels.
C'est exactement ce que permet cette application : elle nous place au même niveau que les autres métiers de la santé, renforce notre identité professionnelle et s'adresse également à la prochaine génération de thérapeutes. Car rendre visible numériquement les effets de la thérapie ne modifie pas seulement la documentation, mais aussi l'image qu'a de lui-même tout un groupe professionnel.

FM69 – Einsatz digitaler Gesundheitslösungen in der Handrehabilitation über eine Smartphone-App

Pauline Chèvre[1] ([1]HFR Fribourg - Hôpital cantonal, Fribourg)

Die digitale Gesundheit hat sich weltweit als eine Säule der Gesundheitspolitik etabliert, wobei ihre Bedeutung seit der Covid-19-Pandemie noch weiter zugenommen hat. In der Schweiz wird ihre Entwicklung durch nationale Strategien gefördert. Sie ist ein Mittel, um einen gerechten und erschwinglichen Zugang zur Gesundheitsversorgung zu gewährleisten, insbesondere dank Ferntherapien und mobilen Anwendungen. Die Ergotherapie bildet dabei keine Ausnahme.
Der Einsatz von Telemedizin bewährt sich zusehends. Dennoch können persönliche Faktoren, die Ausstattung und das Umfeld Hindernisse für die Umsetzung eines solchen Ansatzes[1] darstellen. Der Erfolg eines digitalen Tools hängt von seiner Benutzerfreundlichkeit, aber auch von der Zufriedenheit der Patient:innen mit dieser Methode ab[2].
Im Jahr 2025 hat unser Krankenhaus die mobile Anwendung PhysiTrack® in der Behandlung von Patient:innen mit Handverletzungen eingeführt. Mit dieser Anwendung können Übungsprogramme in Form von Videos erstellt werden, die durch mündliche und schriftliche Erklärungen ergänzt werden. Derzeit überprüfen wir anhand eines Fragebogens die didaktische Klarheit, die Motivation und die Einhaltung der Behandlung. Die ersten Ergebnisse, mit Daten von etwa zehn Teilnehmenden, deuten auf eine tägliche Nutzung des Tools hin. Dieses wird als praktisch, ansprechend und hilfreich für das Verständnis der Übungen empfunden. Eine Auswertung einer grösseren Stichprobe ist im Gange, um diesen Trend zu verifizieren.
Unsere vorläufigen Ergebnisse zeigen, dass der Einsatz digitaler Medien in der Handtherapie nicht nur eine Ergänzung zur Präsenzbehandlung darstellt, sondern auch einen Mehrwert bietet. Steigende Gesundheitskosten und Personalmangel schwächen das Gesundheitssystem. Telemedizin ist eine mögliche Antwort darauf, da sie den Zugang zur Ergotherapie erleichtert, ohne die Qualität der Versorgung zu beeinträchtigen. Es sind jedoch weitere Untersuchungen erforderlich, um dieses aktuelle Thema zu vertiefen.

1) Hirth, M. J., Hahn, J., & Jamwal, R. J. (2022). Exploring the patient experience of telehealth hand therapy services during the COVID-19 pandemic. Journal of Hand Therapy, S0894113022000795.
2) Hwang, N.-K., Shim, S.-H., & Cheon, H.-W. (2022). Use of Information and Communication Technology by South Korean Occupational Therapists Working in Hospitals: A Cross-Sectional Study. International Journal of Environmental Research and Public Health, 19(10), 6022

FM69 – Implémentation de la santé numérique en rééducation de la main via une application smartphone

Pauline Chèvre[1] ([1]HFR Fribourg - Hôpital cantonal, Fribourg)

La santé numérique s'impose comme un pilier des politiques de santé à l'échelle mondiale, et son essor est encore plus significatif depuis la pandémie de Covid-19. En Suisse, son développement est soutenu par les stratégies nationales. C'est un moyen de garantir un accès aux soins équitable et abordable, notamment grâce aux thérapies à distance et aux applications mobiles. L'ergothérapie n'échappe pas à ce contexte. L'utilisation de la télésanté commence à faire ses preuves. Néanmoins, les facteurs personnels, le matériel et l'environnement peuvent être des barrières à la mise en place d'une telle approche.[1] Le succès d'un outil numérique dépend donc de sa facilité d'utilisation mais également de la satisfaction du patient à recourir à une telle méthode.[2]
En 2025, notre hôpital a intégré l'application mobile PhysiTrack® dans la prise en charge de patients souffrant d'une lésion à la main. Cette application permet de créer des programmes d'exercices sous forme de vidéos, accompagnées d'explications orales et écrites. Nous en étudions actuellement la clarté didactique, la motivation et l'adhésion au traitement au moyen d'un questionnaire. Les premiers résultats, issus d'une dizaine de participants, indiquent une utilisation quotidienne de l'outil. Celui-ci est perçu comme pratique, attrayant et utile à la compréhension des exercices. Une évaluation sur un échantillon plus large est en cours pour vérifier cette tendance.
Nos résultats intermédiaires indiquent que l'utilisation d'un support numérique en thérapie de la main est non seulement un complément au traitement en présentiel mais également une plus-value. La hausse des coûts de la santé et la pénurie de personnel fragilisent le système de soins. La télésanté constitue une réponse possible, en facilitant l'accès à l'ergothérapie sans compromettre la qualité de la prise en charge. D'autres recherches restent toutefois nécessaires afin d'approfondir cette thématique actuelle.

1) Hirth, M. J., Hahn, J., & Jamwal, R. J. (2022). Exploring the patient experience of telehealth hand therapy services during the COVID-19 pandemic. Journal of Hand Therapy, S0894113022000795.
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FM73 – Gemeinsam statt einsam: Gruppentherapie als frischer Impuls in der Handtherapie

Andrea Moser[1] ([1]UKH Klagenfurt - Österreich, St. Veit An Der Glan AT)

Heilung der Hände braucht manchmal mehr als eine Einzeltherapie. Dieses strukturierte Gruppenkonzept richtet sich an bis zu zehn Patient*innen mit Handverletzungen – unabhängig von Diagnose oder Vorgeschichte. Gemeinsam wird bewegt, gelacht, ausprobiert und gestärkt.
Die Einheiten folgen einem klaren Aufbau:

1. **Warm-up & Funktion:** Kurzes Bewegungs-Warm-up, gefolgt von gezielten Übungen zu Kraft und Geschicklichkeit.
2. **ADL-Block:** Funktionelles Alltagstraining mit thematisch befüllten Übungskartons. Jeder Karton ist einem spezifischen Lebensbereich zugeordnet – etwa *Badezimmer*, *Büro*, *Haushalt* oder *Küche*. Darin befinden sich alltagsnahe Gegenstände. Die Materialien werden in der Gruppe im Kreis weitergereicht, gezielt gehantiert, geöffnet, gedrückt oder bewegt und dabei funktionell eingesetzt. So entsteht ein alltagsbezogenes, motivierendes Übungssetting zur Förderung von Handfunktion und Selbstständigkeit.

1. **Spiel & Freude:** Luftballonspiele oder Fliegenklatschen-Tischtennis fördern die spontane Handnutzung mit Spaß.
2. **Neurokognition & Entspannung:** Bewegungsbeobachtung, Graded Motor Imagery, ein Memory mit Handfotokarten und eine abschließende Entspannungssequenz.

Im Mittelpunkt steht der soziale Aspekt: Die Teilnehmer*innen erleben Verbindung, gegenseitige Unterstützung und neue Motivation. Menschen nach Amputationen zeigen erstmals wieder ihre Hand. Schmerzpatientinnen profitieren vom Vorbild der Fortgeschrittenen. Es entsteht ein geschützter Raum, in dem Mut, Akzeptanz und Selbstwirksamkeit wachsen.
Die Wirksamkeit wurde mit der *MAT-Hand-App* und einem Fragebogen evaluiert. Die App erfasst handtherapierelevante Parameter wie Kraft, Beweglichkeit, Geschicklichkeit und Schmerz und stellt deren Veränderung visuell mithilfe von Ampelfarben dar. Im Fragebogen wurde erhoben, ob die Patient*innen durch die Gruppentherapie einen Fortschritt in ihrer Handfunktion wahrnehmen konnten.
Das Ergebnis: Gruppentherapie wirkt – funktionell, emotional und motivierend.

FM73 – Ensemble plutôt que séparément : la thérapie de groupe, un nouvel élan dans la rééducation de la main

Andrea Moser[1] ([1]UKH Klagenfurt - Autriche, St. Veit An Der Glan AT)

La guérison de la main nécessite parfois plus qu'une thérapie individuelle. Ce concept de groupe structuré s'adresse à un maximum de dix patients souffrant d'une blessure à la main – indépendamment du diagnostic ou des antécédents. Ensemble, ils bougent, rient, essaient et se renforcent.
Les séances suivent une structure claire :

1. **Échauffement et fonction :** bref échauffement physique, suivi par des exercices ciblés de dextérité et de renforcement visant à développer l'agilité et la force.

2. **Bloc d'activités de la vie quotidienne** : entraînement fonctionnel du quotidien avec des boîtes d'exercices thématiques. Chaque boîte concerne un domaine spécifique de la vie – par exemple *la salle de bains*, *le bureau*, *le ménage* ou *la cuisine*. Elle contient des objets de la vie quotidienne. Le matériel est distribué dans le groupe en cercle, manipulé de manière ciblée, ouvert, pressé ou déplacé, et donc utilisé de manière fonctionnelle. Il en résulte un cadre d'entraînement motivant et axé sur la vie quotidienne qui favorise la fonction de la main et l'autonomie.

1. **Jeu et plaisir :** jeux avec des ballons gonflables ou du tennis de table avec des tapettes à mouches pour encourager l'utilisation spontanée de la main tout en s'amusant.
2. **Neurocognition et relaxation :** observation des mouvements, imagerie motrice graduelle, jeu de mémoire avec des cartes illustrées représentant des mains et une séquence de relaxation pour terminer.

L'aspect social est au cœur du projet : les participants ressentent une connexion, un soutien mutuel et une nouvelle motivation. Les personnes ayant subi une amputation montrent à nouveau leur main pour la première fois. Les patients souffrant de douleurs bénéficient de l'exemple des participants plus avancés. Il s'agit d'un espace sûr, où le courage, l'acceptation et l'efficacité personnelle se développent.
L'efficacité a été évaluée à l'aide d'un questionnaire et de l'application *MAT-Hand*. Cette dernière enregistre les paramètres pertinents pour la thérapie de la main tels que la force, la mobilité, la dextérité et la douleur et représente les changements de manière visuelle à l'aide des couleurs des feux tricolores. Le questionnaire visait à déterminer si les patients avaient perçu des progrès de la fonction de leur main grâce à la thérapie de groupe.
Résultats : La thérapie de groupe a un effet sur la fonction, les émotions et la motivation.

Freie Mitteilungen / Communications libres III:

FM63 – Handtherapie bei älteren Patienten mit schweren Verbrennungen: Darstellung anhand eines klinischen Falls

Sarah Huber[1] ([1]Clinique romande de réadapation, Sion)

Einleitung
Die funktionelle Rehabilitation bei Verbrennungen an der Hand ist ein wichtiger Faktor zur Erhaltung der Selbstständigkeit. Bei älteren Patient:innen rechtfertigen die Gewebeschwäche und das Risiko von Narbenkomplikationen eine frühzeitige, intensive und interdisziplinäre Behandlung. Wir möchten eine Rehabilitationsstrategie vorstellen, die auf die Wiederherstellung der funktionellen Beweglichkeit der oberen Extremität nach schweren Verbrennungen ausgerichtet ist.

Klinischer Fall
Der 74-jährige Herr Y. erlitt bei einer Explosion tiefe Verbrennungen (2. Grad, tief) auf 20 % seiner Körperoberfläche, darunter im Gesicht, am Schädel, am Hals, am oberen Rücken sowie an Handrücken und -flächen beidseits. Nach zweieinhalb Monaten auf der Intensivstation und mehreren Hauttransplantationen wird er zur Rehabilitation aufgenommen.
Bei der Aufnahme weist er Ödeme an den Händen und Gelenksteifigkeiten auf, die die Beweglichkeit der Finger und Handgelenke einschränken, verbunden mit diffusen Schmerzen, starkem Juckreiz und einer leichten Sensibilitätsstörung.

Behandlung
Es wird ein massgeschneidertes Programm durchgeführt, das Folgendes kombiniert:
- Positionierung zur Verhinderung von Deformierungen; Haltungsschienen,
- passive, aktive und frühzeitige aktiv-assistive Mobilisierung,
- Kompressionstherapie zur Narbenbehandlung,
- funktionelles Training mit Fokus auf Aktivitäten des täglichen Lebens,
- psychologische Betreuung

Ergebnisse
Am Ende des Aufenthalts hat der Patient die vollständige Selbstständigkeit bei alltäglichen Aktivitäten wiedererlangt. Es ist eine deutliche Verbesserung der Beweglichkeit der Handgelenke und Finger sowie eine bessere Hautverträglichkeit zu beobachten.

Schlussfolgerung
Die Rehabilitation der Hand bei älteren Patienten mit schweren Verbrennungen basiert auf einem ganzheitlichen, individuellen und koordinierten Ansatz, der darauf abzielt, Funktionseinschränkungen vorzubeugen und die Lebensqualität zu optimieren.

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FM63 – Thérapie de la main chez le grand brûlé âgé : illustration par un cas clinique

Sarah Huber[1] ([1]Clinique romande de réadapation, Sion)

Introduction
La rééducation fonctionnelle de la main brûlée est un enjeu majeur pour préserver l'autonomie. Chez les patients âgés, la fragilité tissulaire et les risques de complications cicatricielles justifient une prise en charge précoce, intensive et interdisciplinaire. Notre objectif est d'illustrer une stratégie de rééducation visant à restaurer la mobilité fonctionnelle du membre supérieur après brûlures sévères.

Cas clinique
Monsieur Y, 74 ans, présente des brûlures thermiques profondes (2e degré profond) sur 20 % de la surface corporelle, incluant le visage, le crâne, le cou, la partie supérieure du dos et la face dorsale et palmaire des deux mains, suite à une explosion. Après deux mois et demie en soins intensifs et plusieurs greffes cutanées, il est admis en rééducation.
À l'admission, il présente des œdèmes des mains et des raideurs articulaires limitant la mobilité des doigts et des poignets, associées à des douleurs diffuses, un prurit important et un léger déficit sensoriel.

Prise en charge
Un programme spécifique est mis en œuvre, combinant :
- Positionnement anti déformant et attelles de posture,
- Mobilisations passives, actives et actives assistées précoces,
- Thérapie compressive pour la gestion cicatricielle,
- Travail fonctionnel orienté sur les activités de la vie quotidienne,
- Accompagnement psychologique

Résultats
À l'issue du séjour, le patient a retrouvé une autonomie complète dans les activités quotidiennes. On observe une récupération significative des amplitudes articulaires des poignets et des doigts, ainsi qu'une meilleure tolérance cutanée.

Conclusion
La rééducation de la main chez le grand brûlé âgé repose sur une approche globale, individualisée et coordonnée, visant à prévenir les limitations fonctionnelles et à optimiser la qualité de vie.

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FM64 – Beurteilung und Behandlung von Verbrennungsnarben an der Hand

Fabienne Bor[1], Giovanni Leone[1] ([1]Universitätsspital Zürich, Zürich)

Einleitung:
In der Schweiz ereignen sich jährlich zwischen 8'000-9'000 Verbrennungsunfälle die ärztlich behandelt werden müssen, davon benötigen ca. 290 Personen eine spezialisierte Behandlung in einem Brandverletzten Zentrum (bfb-cipi.ch). In der Ergotherapie und Handtherapie am Universitätsspital Zürich behandeln wir Brandverletzte Patient:innen von der intensiv Phase bis zur ambulanten Versorgung. Die Patient:innen kommen aus der ganzen Deutschschweiz und werden im Verlauf ambulant und wohnortsnah weiterbehandelt. Dabei stellen wir fest, dass die Beurteilung und Behandlung von Verbrennungsnarben immer wieder eine grosse Herausforderung für die Therapeut:innen sind, da sie sich von einer operativen Narbe stark unterscheiden und der Heilungsverlauf, die Behandlungsintervention und -dauer sich anders verhalten kann.
Ziel:
Therapeut:innen kennen Kriterien für das Beurteilen und Behandeln von Verbrennungsnarben.
Massnahmen:
Vorstellung Behandlungskonzept am Universitätsspital Zürich:
Die präventive Behandlung möglicher Kontrakturen ist elementar, um die Narbenbildung positiv zu beeinflussen. Dabei ist die bereits frühzeitige Schienenversorgung ein fester Bestandteil im Behandlungskonzept.
Anhand Beurteilungskriterien wie Farbe, Textur, Elastizität und Funktionalität kann der Reifegrad und die Stabilität einer Verbrennungsnarbe beurteilt werden.
Tests und Messinstrumente werden vorgestellt, um eine möglichst objektivierbare Einschätzung aufzuzeigen.
Nächste Schritte:
Ausbau eines Netzwerks mit Therapeut:innen, die Erfahrungen mit Verbrennungsnarben haben.

FM64 – Évaluation et traitement des cicatrices dues à une brûlure à la main

Fabienne Bor[1], Giovanni Leone[1] ([1]Universitätsspital Zürich, Zurich)

Introduction :
En Suisse, 8'000 à 9'000 accidents avec brûlure nécessitant des soins médicaux sont recensés chaque année, dont environ 290 personnes ayant besoin d'une prise en charge spécialisée dans un centre pour grands brûlés (bfb-cipi.ch). Dans le service d'ergothérapie et de thérapie de la main de l'Hôpital universitaire de Zurich, nous nous occupons des patients brûlés depuis la phase intensive jusqu'au traitement ambulatoire. Les patients viennent de toute la Suisse alémanique et sont ensuite pris en charge en ambulatoire près de leur domicile. Nous avons donc constaté que l'évaluation et le traitement des cicatrices dues à une brûlure constituent toujours un défi majeur pour les thérapeutes, car ces lésions diffèrent considérablement des cicatrices chirurgicales et le processus de guérison, l'intervention thérapeutique et la durée du traitement peuvent se dérouler autrement.
Objectif :
Faire connaître aux thérapeutes les critères pour

l'évaluation et la prise en charge des cicatrices dues à une brûlure.
Mesures :
Présentation du concept thérapeutique à l'Hôpital universitaire de Zurich :
Le traitement préventif contre des contractures éventuelles est essentiel afin d'influencer positivement la formation cicatricielle. La pose précoce d'attelles fait partie intégrante du concept thérapeutique.
Le degré de maturité et la stabilité des cicatrices dues à une brûlure peuvent être évalués à l'aide de critères tels que la couleur, la texture, l'élasticité et la fonctionnalité. Des tests et des instruments de mesure sont présentés afin de fournir une évaluation aussi objective que possible.
Prochaines étapes :
Développement d'un réseau de thérapeutes ayant de l'expérience dans le domaine des cicatrices dues à une brûlure.

FM70 – Driven by Hormones: The Science Behind Meaningful Activities - a Scoping Review.

Céline Delmée[1], Barbara Aegler[1], Chantal Wildhaber-Phillips[1] ([1]Praxis für Handrehabilitation und Ergotherapie, Zürich)

Objective: This scoping review explores literature on purposeful activities regulating stress in healthy adults, focusing on cortisol, oxytocin, perceived stress, and shared characteristics across them.
Introduction: Purposeful activities are structured, goal-directed actions (Pierce, 2001), that may help regulate stress. Chronic stress negatively affects health and the healing of structures, emphasizing the need for evidence-based interventions (Hogan et al., 2023). While occupational therapy highlights meaningful occupations, purposeful activities may serve as effective intermediaries (Pierce, 2001). Hormonal markers such as cortisol and oxytocin offer objective physiological indicators for assessing stress (Pruessner & Ali, 2015).
Methods: Included were studies on healthy adults engaging in purposeful activities, measuring at least one physiological (cortisol/oxytocin) and one psychosocial (perceived stress) outcome, published in English or German between 2012-2024. A comprehensive search was conducted in MEDLINE Complete, CINAHL Complete, and APA PsychInfo. Selection, extraction, and analysis followed Joanna Briggs Institute guidelines.
Results: Fourteen studies were reviewed, covering activities such as singing, walking, social interaction, mindfulness, nature exposure and relaxation. These showed potential for stress regulation via effects on physiological markers and/or perceived stress. Shared characteristics included solo vs. group activity, sensory input, movement, nature connection, mindfulness and mood influence.
Conclusions: Purposeful activities appear to support stress regulation by influencing hormonal and psychosocial responses. A better understanding of hormonal mechanisms can guide therapists and researchers in designing tailored interventions to promote health. More research is needed across diverse cultural contexts as well as the possible influence of gender.

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FM71 – Anwendung psychologischer Prinzipien aus der Wirtschaft auf die Handtherapie

Giovanni Leone[1], Vera Beckmann-Fries[1] ([1]USZ, Zürich)

Hintergrund:
Die modernen Neurowissenschaften und psychologischen Prinzipien haben das Verständnis von Entscheidungsfindung, Wahrnehmung und Verhalten erheblich erweitert. Erkenntnisse aus den Arbeiten von Daniel Kahneman (z. B. «Thinking, Fast and Slow»), Yuval Noah Harari («Homo Deus») und bewährten Konzepten wie der Pareto-Regel (80/20-Prinzip) bieten neue Perspektiven für die Handtherapie. Die Integration dieser Prinzipien kann nicht nur die Patient:innenbetreuung verbessern, sondern auch die Effizienz und Qualität therapeutischer Entscheidungen steigern.
Implikationen für die Praxis:
1. Kognitive Verzerrungen und Entscheidungsfindung – Kahnemans Dual-System-Theorie (System 1 und System 2) hilft zu verstehen, wie Patient:innen und Therapeut:innen Entscheidungen treffen. Dies kann genutzt werden, um Therapieempfehlungen effektiver zu gestalten.
2. Pareto-Prinzip in der Therapieplanung – Die 80/20-Regel kann angewendet werden, um sich auf die wesentlichen Therapieinterventionen zu konzentrieren, die den grössten Fortschritt bewirken.
3. Zukunftsperspektiven nach Harari – Die zunehmende Rolle von Technologie und KI in der Medizin verändert auch die Handtherapie. Das Verständnis langfristiger Entwicklungen kann helfen, innovative Therapieansätze zu entwickeln.
Schlussfolgerungen:
Die Anwendung psychologischer Prinzipien in der Handtherapie eröffnet neue Wege für eine evidenzbasierte, effiziente und patientenzentrierte Behandlung. Durch die Berücksichtigung kognitiver Verzerrungen, die Optimierung von Ressourcen durch das Pareto-Prinzip und die Integration zukunftsweisender Ideen können Handtherapeut:innen ihre Praxis weiterentwickeln und bessere Therapieergebnisse erzielen.
Disclosure: Dieses Abstract wurde in Kommunikation mit KI (ChatGPT) erstellt.

FM71 – Application des principes psychologiques issus de l'économie à la thérapie de la main

Giovanni Leone[1], Vera Beckmann-Fries[1] ([1]USZ, Zurich)

Contexte :
Les neurosciences modernes et les principes psychologiques ont considérablement approfondi la compréhension de la prise de décision, de la perception et du comportement. Les constatations tirées des travaux de Daniel Kahneman (par exemple « Thinking, Fast and Slow »), Yuval Noah Harari (« Homo Deus ») et des concepts éprouvés comme la règle de Pareto (principe des 80-20) offrent de nouvelles perspectives pour la thérapie de la main. L'intégration de ces principes peut non seulement améliorer la prise en charge des patients, mais aussi accroître l'efficacité et la qualité des décisions thérapeutiques.
Implications pour la pratique :
1. Les distorsions cognitives et la prise de décision : la théorie du système dual de Kahnemans (système 1 et système 2) aide à comprendre comment les patients et les thérapeutes prennent leurs décisions. Son utilisation peut contribuer à rendre les recommandations thérapeutiques plus efficaces.
2. Le principe de Pareto dans la planification thérapeutique : la règle des 80-20 peut être appliquée afin de se concentrer sur les interventions thérapeutiques essentielles, qui permettent d'obtenir les progrès les plus importants.
3. Les perspectives futures selon Harari : le rôle croissant de la technologie et de l'intelligence artificielle en médecine transforme également la thérapie de la main. Comprendre les évolutions à long terme peut aider à développer des approches thérapeutiques innovantes.
Conclusion :
L'application des principes psychologiques à la thérapie de la main ouvre de nouvelles voies pour un traitement fondé sur des preuves, efficace et centré sur le patient. En tenant compte des distorsions cognitives, en optimisant les ressources grâce au principe de Pareto et en intégrant des idées novatrices, les thérapeutes de la main peuvent développer leur pratique et obtenir de meilleurs résultats thérapeutiques.
Divulgation : cet abstract a été rédigé à l'aide de l'intelligence artificielle (ChatGPT).

FM72 – Hormone & Ergotherapie – Können wir über Hormone unser Tun evident erklären?

Barbara Aegler[1], Céline Delmée[1], Chantal Wildhaber[1] ([1]Praxis für Handrehabilitation und Ergotherapie GmbH, Zürich)

Hormone & Ergotherapie – Können wir über Hormone unser Tun evident erklären?
Einleitung:
Hormone steuern als biochemische Transmitter zentrale Prozesse unseres Körpers. Sie beeinflussen unser emotionales Erleben, Wohlbefinden, den zirkadianen Rhythmus sowie unser tägliches Handeln – und werden gleichzeitig durch dieses beeinflusst. Aktivitäten wie Lachen, Gehen oder Atmen können gezielt auf die Ausschüttung einzelner Hormone wirken. Das endokrine System reagiert sensibel auf Faktoren wie Tageszeit, Ernährung, Stress, Emotionen, Heilungsprozesse und Verhalten. Gerät es aus dem Gleichgewicht, ist unsere Gesundheit gefährdet.
Methode:
Basierend auf Literaturrecherche und literaturbasierten Bachelorarbeiten haben wir 2022 ein Buch veröffentlicht, in dem wir sechs zentrale Hormone/Neurotransmitter – Dopamin, Oxytocin, Serotonin, Melatonin, Cortisol und Endorphin – ausführlich in Bezug auf ihre Wirkung, physiologischen Grundlagen, mögliche Pathologien und therapeutisch nutzbare Aktivitäten beschrieben haben (Chong et al., 2021; Hunter et al.,2019; Young et al., 2007).
Ergebnisse:
Zahlreiche Aktivitäten beeinflussen nachweislich einzelne Hormone und damit potenziell die hormonelle Gesamtbalance. Dieses Wissen kann das ergotherapeutische Reasoning erweitern und hilft, gezielt Aktivitäten zur Förderung der Gesundheit auszuwählen. Während die medizinische Gabe von Hormonen weiterhin kritisch diskutiert wird – insbesondere hinsichtlich Nebenwirkungen und Systemkomplexität – eröffnet der nicht-invasive Zugang über Aktivität einen vielversprechenden, alltagsnahen Therapieansatz.
Praktische Relevanz:
In dieser Präsentation wird anhand eines Patient*innenbeispiels gezeigt, wie hormonbasiertes Wissen das ergotherapeutische Handeln unterstützen kann. Zwei Hormone werden exemplarisch vorgestellt, inklusive evidenzbasierter Aktivitäten und deren Umsetzung im therapeutischen Alltag.
Literatur:
Chong, A. et al. (2021). *Blending oxytocin and dopamine with everyday creativity*. Sci Rep, 11:16185. https://doi.org/10.1038/s41598-021-95724-x
Hunter, M. R. et al. (2019). *Urban nature experiences reduce stress in the context of daily life*. Front Psychol, 10, 722. https://doi.org/10.3389/fpsyg.2019.00722
Young, S. N. (2007). *How to increase serotonin in the human brain without drugs*. J Psychiatry Neurosci, 32(6), 394.

FM72 – Hormones et ergothérapie – pouvons-nous clairement expliquer nos actions par les hormones ?

Barbara Aegler[1], Céline Delmée[1], Chantal Wildhaber[1] ([1]Praxis für Handrehabilitation und Ergotherapie GmbH, Zurich)

Hormones et ergothérapie – pouvons-nous clairement expliquer nos actions par les hormones ?
En tant que transmetteurs biochimiques, les hormones commandent les processus centraux de notre corps. Elles influencent notre vécu émotionnel, notre bien-être, notre rythme circadien ainsi que nos actions quotidiennes – tout en étant elles-mêmes influencées par ceux-ci. Les activités comme rire, marcher ou respirer peuvent avoir un effet ciblé sur la sécrétion de certaines hormones. Le système endocrinien réagit sensiblement à des facteurs tels que l'heure de la journée, l'alimentation, le stress, les émotions, les

processus de guérison et le comportement. Si ce système est déséquilibré, notre santé est menacée.
Méthodologie :
Sur la base de recherches bibliographiques et de travaux de Bachelor fondés sur la littérature, nous avons publié en 2022 un ouvrage dans lequel nous avons décrit de manière détaillée – en termes d'effets, de bases physiologiques, de possibles pathologies et d'activités thérapeutiques exploitables – six hormones/neurotransmetteurs essentiels : la dopamine, l'ocytocine, la sérotonine, la mélatonine, le cortisol et l'endorphine (Chong et al., 2021; Hunter et al.,2019; Young et al., 2007).
Résultats :
Il est prouvé que de nombreuses activités influencent certaines hormones et donc potentiellement l'équilibre hormonal global. Ces connaissances peuvent élargir le raisonnement ergothérapeutique et aider à sélectionner des activités ciblées pour promouvoir la santé. Alors que l'administration médicale d'hormones continue de faire l'objet de débats critiques, notamment en ce qui concerne les effets secondaires et la complexité du système, l'accès non invasif via l'activité ouvre la voie à une approche thérapeutique prometteuse et en lien avec le quotidien.
Implication pour la pratique :
Cette présentation montre, à l'aide d'une étude de cas, comment les connaissances en matière d'hormones peuvent soutenir le suivi ergothérapeutique. Deux hormones, y compris des activités basées sur des preuves ainsi que leur mise en œuvre dans la pratique thérapeutique quotidienne, sont présentées à titre d'exemple.
Littérature :
Chong, A. et al. (2021). *Blending oxytocin and dopamine with everyday creativity*. Sci Rep, 11:16185. https://doi.org/10.1038/s41598-021-95724-x
Hunter, M. R. et al. (2019). *Urban nature experiences reduce stress in the context of daily life*. Front Psychol, 10, 722. https://doi.org/10.3389/fpsyg.2019.00722
Young, S. N. (2007). *How to increase serotonin in the human brain without drugs*. J Psychiatry Neurosci, 32(6), 394.

FM74 – Training the bounce factor

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Long-term negative stress can lead to health issues, such as cardiac disease, lowered immune function, depression and musculoskeletal disorders (MSDs) (Hoe et al., 2018). In Switzerland the prevalence of MSDs is high and is expected to rise (Engel et al., 2017). As more individuals seek to manage the stressors of daily life, the need for accessible, effective interventions grows.
Resilience is the ability to overcome, adapt to or cope with stressful or disruptive life events (Turner et al., 2022). Occupational therapists (OTs), who specialise in promoting health and well-being through occupational participation are well positioned to support their clients in hand therapy to develop skills to manage stress and promote resilience (Matuska, 2014).

The *Mini-Activity-Approach* (MAA) is an activity-based protocol for building resilience in everyday life (Aegler et al., 2019). Its popularity is increasing among OTs in Switzerland, Austria, the Netherlands, and Germany. In response to growing interest and feedback, the MAA development team initiated a revision process. In 2024, a small-scale exploratory study was conducted to gather expert perspectives for further development. The revision process is ongoing, and the current stage and direction of development will be presented.
Our objective is to highlight the potential of occupational therapy to contribute meaningfully to preventive health care by supporting clients in the development of resilient, health-promoting habits.
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Hoe, V. C., Urquhart, D. M., Kelsall, H. L., Zamri, E. N., & Sim, M. R. (2018). Ergonomic interventions for preventing work-related musculoskeletal disorders of the upper limb and neck among office workers. *Cochrane Database of Systematic Reviews*, (10).
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Turner, J., Miller, W. C., Reid, H., Moecke, D. M. P., Crosbie, S., Kamurasi, I., Girt, M., Petlitsyna, P., Friesen, M., Towle, J., Knox, A., Winter, A., & Camp, P. (2022) How is resilience conceptualized and operationalized in occupational science and occupational therapy literature? Protocol for a scoping review. *Cadernos Brasileiros de Terapia Ocupacional, 30,* e3105-e3105.

Freie Mitteilungen / Communications libres IV:

FM75 – Amputation und jetzt? – vom stationären Setting zurück in den Alltag

Linda Meyer[1], Regina Wettstein[1] ([1]Rehaklinik Bellikon, Bellikon)

Motivation
Ergotherapeutische Interventionen sind unabdingbar für die Nachbehandlung von Personen nach einer Amputation an der oberen Extremität (Smurr et al., 2008). Die prothetische Versorgung sowie der Ablauf therapeutischer Interventionen gestalten sich im ambulanten sowie akuten Setting oftmals herausfordernd. Nationale Weiterbildungen sind limitiert und spezialisierte Ergotherapeut:innen rar. Unser Team, welches auf die Nachbehandlung bei Amputation spezialisiert ist, wird deshalb regelmässig kontaktiert. Ziel ist es, die ergotherapeutische Betreuung von Patient:innen nach einer Amputation der oberen Extremität im stationären Rehabilitationssetting strukturiert und nachvollziehbar darzustellen. Dabei werden Meilensteine der Versorgung hervorgehoben sowie therapeutische Interventionen aufgezeigt, die im ambulanten Bereich fortgesetzt werden. Der Wunsch ist,

die Zusammenarbeit im stationären und ambulanten Bereich auszubauen.
Methode
Mittels eines Fachaustausches innerhalb des handtherapeutischen Teams wurde der klinikinterne ergotherapeutische Prozess analysiert, vorhandenes Wissen zusammengeführt und durch aktuelle Primär- und Sekundärliteratur untermauert.
Ergebnisse
Die Überarbeitung führte zu einer Darstellung eines zweiteiligen ergotherapeutischen Prozesses im stationären Setting: die akute Phase unmittelbar nach der Amputation und die Phase nach dem Erhalt einer Prothese. Der Ablauf wird durch praxisnahe Beispiele und relevante Fachliteratur ergänzt. Zudem werden zentrale Assessments wie der adaptierte *Box and Block-Test* und das *Assessment of Capacity for Myoelectric Control* sowie relevante therapeutische Interventionen vorgestellt. Dieser Einblick ermöglicht Fachkräften eine klare Orientierung zu Therapieinhalten und relevanten Ansprechpersonen im stationären Bereich.
Implikation
Der Input möchte das Interesse an diesem Thema fördern und Fachpersonen zur vertieften Auseinandersetzung anregen. Langfristig soll die ergotherapeutische Versorgung nach einer Amputation der oberen Extremität durch ein erweitertes und qualitativ hochwertiges Angebot optimiert werden. Darüber hinaus muss die Entwicklung und Etablierung eines klinischen Netzwerks gefördert werden.
Quellen
Smurr, L. M., Gulick, K., Yancosek, K. & Ganz, O. (2008). Managing the Upper Extremity Amputee: A Protocol for Success. *Journal Of Hand Therapy*, *21*(2), 160–176. https://doi.org/10.1197/j.jht.2007.09.006

FM75 – Une amputation et maintenant ? – du milieu hospitalier au retour à la vie quotidienne

Linda Meyer[1], Regina Wettstein[1] ([1]Rehaklinik Bellikon, Bellikon)

Motivation
Les interventions ergothérapeutiques sont indispensables pour le traitement des personnes ayant subi l'amputation d'un membre supérieur (Smurr et al., 2008). Le traitement prothétique ainsi que le déroulement des interventions thérapeutiques s'avèrent souvent difficiles dans les milieux aigu et ambulatoire. Les formations continues nationales sont limitées et les ergothérapeutes spécialisés, rares. Notre équipe, spécialisées dans le traitement après une amputation, est donc régulièrement sollicitée.
L'objectif est de présenter de manière structurée et compréhensible la prise en charge ergothérapeutique des patients après l'amputation d'un membre supérieur dans le cadre d'une réadaptation stationnaire. Les étapes essentielles du traitement sont mises en évidence et les interventions thérapeutiques qui se poursuivent en ambulatoire sont présentées. Le souhait est de construire une collaboration entre les secteurs hospitalier et ambulatoire.
Méthodologie
Le processus ergothérapeutique interne à la clinique a été analysé à l'aide d'un échange d'expertise entre les membres de l'équipe de thérapie de la main. Les connaissances existantes ont été rassemblées et étayées par la littérature primaire et secondaire actuelle.
Résultats
La révision a abouti à la description d'un processus ergothérapeutique en deux phases dans le cadre stationnaire : la phase aiguë immédiatement après l'amputation et la phase après l'obtention d'une prothèse. L'exposé est complété par des exemples pratiques et de la littérature spécialisée pertinente. En outre, des évaluations centrales telles que le *Box and Block-Test* adapté et l'*Assessment of Capacity for Myoelectric Control*, ainsi que des interventions thérapeutiques pertinentes sont présentées. Cet aperçu permet aux professionnels une orientation claire sur les contenus thérapeutiques et les interlocuteurs concernés dans le domaine hospitalier.
Implication
Cette contribution vise à susciter l'intérêt pour ce sujet et à inciter les spécialistes à approfondir la réflexion. À long terme, l'objectif est d'optimiser la prise en charge ergothérapeutique après l'amputation d'un membre supérieur grâce à une offre élargie et de haute qualité. Il convient en outre d'encourager le développement et l'établissement d'un réseau clinique.
Source
Smurr, L. M., Gulick, K., Yancosek, K. & Ganz, O. (2008). Managing the Upper Extremity Amputee: A Protocol for Success. *Journal Of Hand Therapy*, *21*(2), 160–176. https://doi.org/10.1197/j.jht.2007.09.006

FM76 – Einführung einer Advanced Practitioner (AP) Rolle in der Handtherapie in einem Akutspital

Nadine Schulz[1], Simon Roner[1], Vera Beckmann-Fries[1] ([1]Universitätsspital Zürich, Zürich)

Fragestellung Wie lässt sich die Rolle des Advanced Practitioner (AP) in der Handtherapie in einem Schweizer Akutspital implementieren, und welchen Nutzen bringt sie für die interprofessionelle Zusammenarbeit sowie die therapeutische Versorgung?
Methodik Im Herbst 2024 wurde ein Pilotprojekt zur Einführung der AP-Rolle in der Handtherapie gestartet. In enger Kooperation mit der Handchirurgie wurde ein detailliertes Konzept inklusive Stellenprofil und Einsatzbereich mit definierten Behandlungsdiagnosen entwickelt. Eine Therapeutin leitet seither einmal wöchentlich die interprofessionelle Handsprechstunde. Dabei erfolgen Statusaufnahme und Besprechung der Situation mit den Patient*innen. Das weitere Procedere wird im Anschluss gemeinsam mit Oberärzt*innen der Handchirurgie, in direktem Austausch mit den Patient*innen, festgelegt. Nach 5 Monaten erfolgte eine qualitative Umfrage der beteiligten Berufsgruppen. Die Zufriedenheit der Patient*innen wurde mittels Patient Rated Experience Measures (PREMS) erfasst.
Ergebnisse Erste Rückmeldungen zeigen eine gesteigerte Effizienz in der Behandlung, sowie eine Aufwertung der therapeutischen Rolle im patientenzentrierten Behandlungspfad. Die neue Versorgungsstruktur ermöglicht es Handtherapeut*innen, eine erweiterte

klinische Verantwortung zu übernehmen. Gleichzeitig wird die interprofessionelle Zusammenarbeit intensiviert. Handtherapeut*innen konnten direkten Einfluss auf Vorgehen und Nachbehandlungen nehmen, Unklarheiten wurden direkt besprochen. Die Auswertung der PREMS ergab keinen Unterschied in der Patientenzufriedenheit im Vergleich zu einer Sprechstunde nur bei einem/einer Handchirurg*in. **Schlussfolgerung** Die Einführung der AP-Rolle in der Handtherapie stellt einen zukunftsweisenden Schritt in der Professionalisierung des Berufsfeldes dar. Sie fördert die Zusammenarbeit zwischen den Professionen auf Augenhöhe und eröffnet neue Möglichkeiten in der patientenzentrierten Versorgung. Eine Ausweitung des Modells erscheint aus heutiger Sicht sinnvoll und wünschenswert.

FM76 – Introduction d'un rôle de praticien avancé (PA) en thérapie de la main dans un hôpital de soins aigus

Nadine Schulz[1], Simon Roner[1], Vera Beckmann-Fries[1] ([1]Universitätsspital Zürich, Zürich)

Problématique Comment implémenter le rôle de praticien avancé (PA) en thérapie de la main dans un hôpital de soins aigus suisse, et quels avantages cela apporte-t-il à la collaboration interprofessionnelle, ainsi que dans la prise en charge thérapeutique ?
Méthodologie A l'automne 2024, un projet pilote visant à introduire le rôle de PA en thérapie de la main a été lancé. Un concept détaillé, incluant le profil du poste et le domaine d'activité avec des diagnostics définis, a été développé en étroite collaboration avec la chirurgie de la main. Depuis lors, une thérapeute mène une consultation de la main interprofessionnelle une fois par semaine. A cette occasion, elle évalue l'état des patients et discute de la situation avec eux. Puis, la suite de la procédure est déterminée en collaboration avec les médecins-chefs de la chirurgie de la main, en échangeant directement avec les patients. Après cinq mois, un sondage qualitatif a été mené auprès des groupes professionnels concernés. La satisfaction des patients a été évaluée au moyen de la Patient Rated Experience Measures (PREMS).
Résultats Les premiers retours indiquent une efficacité augmentée de la prise en charge, ainsi qu'une revalorisation du rôle thérapeutique dans le parcours de soins centrés sur le patient. La nouvelle structure de soins permet au thérapeute de la main d'assumer une responsabilité clinique élargie. Dans le même temps, la collaboration interprofessionnelle s'intensifie. Les thérapeutes de la main ont pu exercer une influence directe sur le déroulement de la prise en charge, et les incertitudes ont été discutées directement. L'évaluation de la PREMS n'a révélé aucune différence dans la satisfaction des patients en comparaison à une consultation chez un chirurgien de la main uniquement.
Conclusion L'introduction du rôle de PA en thérapie de la main représente une avancée décisive dans la professionnalisation du domaine. Cela favorise la collaboration entre les professions sur un pied d'égalité et ouvre de nouvelles perspectives dans les soins centrés sur le patient. Une extension du modèle semble aujourd'hui judicieuse et souhaitable.

FM77 – Handtherapie gestern und heute: Ein Streifzug durch Kuriositäten, Bewegendes und Verblüffendes.

Esther Bohli[1] ([1]Handtherapie Bern, Praxis für Ergotherapie, Bern)

Die Handtherapie hat in den letzten vier Jahrzehnten eine grandiose Professionalisierung erlebt: Auf dem Weg dorthin wurden etliche Behandlungsoptionen und Methoden ausgewählt und wieder verworfen: Würden Sie heute noch ernsthaft einem CRPS-Patienten raten, stundenlang eine Aktentasche mit der betroffenen Hand zu tragen? Oder würden Sie Schienenmaterial mit Erdbeere-Geschmack verwenden? Mit einem humorvollen Blick auf die letzten 40 Jahre, fern von nostalgischer Verklärung wird die Handtherapie und ihre Entwicklung kurz gewürdigt.
Literatur:
A.P.Diday, A. Reiter et al. Handrehabilitation für Ergo- und Physiotherapeuten. Band 1 - 3: Springer 2013
Breier, S. Publikationen unter www.handtherapie-breier.de
Waldner, B. Ergotherapie in der Handrehabilitation: Springer 2013
Giunta RE et al. Eine kurzgefasste Geschichte der Handchirurgie in : Mikrocihr. Plast. Chir 2021; 53, 194-200: 2020 Thieme

FM77 – La rééducation de la main hier et aujourd'hui : une incursion dans les curiosités, les faits marquants et les surprises

Esther Bohli[1] ([1]Handtherapie Bern, Praxis für Ergotherapie, Berne)

La thérapie de la main a connu une formidable professionnalisation au cours des quatre dernières décennies : tout au long de cette évolution, de nombreuses options et méthodes de traitement ont été sélectionnées puis mises de côté. Recommanderiez-vous aujourd'hui sérieusement à un patient atteint de CRPS de porter pendant des heures une mallette avec la main affectée ? Ou utiliseriez-vous du matériel pour attelles au goût de fraise ? Avec un regard rempli d'humour sur les quarante dernières années, loin de toute nostalgie, nous reviendrons brièvement sur la rééducation de la main et son évolution.
Littérature :
A.P.Diday, A. Reiter et al. Handrehabilitation für Ergo- und Physiotherapeuten. Band 1 - 3: Springer 2013
Breier, S. Publikationen unter www.handtherapie-breier.de
Waldner, B. Ergotherapie in der Handrehabilitation: Springer 2013
Giunta RE et al. Eine kurzgefasste Geschichte der Handchirurgie in : Mikrocihr. Plast. Chir 2021; 53, 194-200: 2020 Thieme

FM79 – Der Weg der Entscheidung: Welche Arm Prothese ist die beste – und welche braucht der Betroffene?

Patrick Meier[1], Christian Thienel[1], Sophia Lehmann[1]
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Hintergrund: Die Auswahl und Versorgung mit einer geeigneten Prothese ist ein komplexer und multiproffesioneller Prozess, der weit über die rein technische Komponente hinausgeht. Um eine individuell optimale Versorgung zu gewährleisten, ist ein phasenorientiertes Vorgehen erforderlich, das medizinische, funktionelle und alltagspraktische Aspekte miteinander verbindet. Im Zentrum steht die Frage: Welche Prothese passt wirklich – zum Betroffenen, dessen Alltag, den Zielen, Bedürfnissen und Anforderungen?
Ziel: Ziel dieses Referates ist es, den Entscheidungsweg zur individuell passenden Prothese in drei klar definierten Phasen darzustellen – vom primären stationären Rehabilitationsaufenthalt über die ambulante Vorbereitung bis hin zur gezielten Rehabilitation mit Prothese.
Phase 1 – Primärer Stationärer Aufenthalt in der Rehabilitationsklinik Bellikon:
In dieser initialen Phase stehen die medizinische Versorgung nach Amputation, die Wundheilung sowie die Stumpfformung. Das Erlernen von Tipps und Tricks aus der Ergotherapie. Im Vordergrund, bezogen auf die Prothetische Versorgung steht eine umfassende Evaluation der individuellen Anforderungen an eine künftige Prothese. Aus funktionell, technisch, ästhetisch und alltagsbezogen Aspekten und einreichen des daraus entstehenden Kostenvoranschlags.
Phase 2 – Ambulante Vorbereitungsphase:
Nach dem stationären Aufenthalt beginnt die wohnortnahe ambulante Weiterbehandlung. Diese umfasst weiteres ergotherapeutisches Training, insbesondere Myoelektrik-Signaturtraining (bei entsprechender Prothesenwahl), Physiotherapie, sowie die Stabilisierung der Stumpfform. Gleichzeitig wird auf die Kostengutsprache durch die Versicherung gewartet. Im Anschluss daran erfolgt nach konstanten Stumpfvolumen der ambulante Prothesenbau auf Basis der zuvor definierten Anforderungen.
Phase 3 – Rehabilitationsaufenthalt mit Prothese:
Die dritte Phase beinhaltet einen gezielten Rehabilitationsaufenthalt, der vollumfänglich der funktionellen Eingliederung mit der neuen Prothese dient. Neben dem motorischen Training stehen hier Alltagssituationen, der Umgang mit der Prothese im häuslichen und beruflichen Umfeld sowie praktische Tipps und individuelle Anpassungen im Fokus.
Fazit: Die beste Prothese ist jene, die den Bedürfnissen des Betroffenen am besten entspricht – technisch, funktionell und individuell.

FM79 – Le chemin vers la décision : quelle est la meilleure prothèse de bras – et laquelle convient à la personne concernée ?

Patrick Meier[1], Christian Thienel[1], Sophia Lehmann[1]
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Contexte : Le choix et la prise en charge de la prothèse appropriée constituent un processus complexe et multi professionnel, qui va bien au-delà de la simple composante technique. Afin de garantir une prise en charge optimale et personnalisée, une approche par étapes est nécessaire, combinant les aspects médicaux, fonctionnels et pratiques de la vie quotidienne. La question centrale est la suivante : quelle prothèse convient vraiment à la personne concernée, à son quotidien, à ses objectifs, à ses besoins et à ses exigences ?
Objectif : L'objectif de cette présentation est de montrer le processus décisionnel menant à une prothèse individualisée via trois phases clairement définies – du séjour initial en rééducation stationnaire à la réhabilitation ciblée avec la prothèse, en passant par la préparation ambulatoire.
Phase 1 – Séjour primaire hospitalier à la clinique de réadaptation de Bellikon :
Lors de cette phase initiale, l'accent est mis sur les soins médicaux après l'amputation, sur la guérison de la plaie ainsi que sur la formation du moignon. Des conseils et des astuces sont donnés en ergothérapie. Concernant les soins prothétiques, il s'agit avant tout de faire une évaluation complète des besoins individuels pour une future prothèse. Cela comprend les aspects fonctionnels, techniques, esthétiques et liés au quotidien, et le devis correspondant est émis.
Phase 2 – Préparation de la phase ambulatoire :
Après le séjour à l'hôpital, le traitement ambulatoire se poursuit à proximité du domicile. Cela consiste à d'autres entraînements ergothérapeutiques, en particulier l'entraînement à la signature myoélectrique (dans le cas d'un choix d'une telle prothèse), à de la physiothérapie, ainsi qu'à la stabilisation de la forme du moignon. En même temps, la garantie de prise en charge des frais par l'assurance est en attente. Une fois le volume du moignon stabilisé, la prothèse est fabriquée en ambulatoire sur la base des exigences préalablement définies.
Phase 3 – Séjour de réhabilitation avec une prothèse :
La troisième phase est composée d'un séjour de réhabilitation ciblé entièrement consacré à l'intégration fonctionnelle de la nouvelle prothèse. Outre l'entraînement moteur, l'accent est mis ici sur les situations quotidiennes, sur la gestion de la prothèse dans les contextes domestique et professionnel, ainsi que sur des conseils pratiques et des adaptations individuelles.
Conclusion : La meilleure prothèse est celle qui répond le mieux aux besoins de la personne concernée – techniquement, fonctionnellement et individuellement.

FM80 – Gelenkschutz der Hände – worauf es im Krafttraining ankommt

Nadine Briefer[1] ([1]Schulthess Klinik, Zürich)

Hintergrund
Krafttraining im höheren Alter wirkt sich nachweislich positiv auf die körperliche sowie psychische Gesundheit aus. Dennoch treten bei Personen im höheren Lebensalter nicht selten Handschmerzen oder eine

verminderte Handkraft im Training auf - insbesondere beim Einstellen oder Bedienen von Trainingsgeräten.

Ziel
Ziel des Projekts war es, typische Herausforderungen von Trainierenden bei der Handhabung von Trainingsgeräten zu identifizieren. Daraus sollten praxisnahe Empfehlungen zur Prävention sowie Reduzierung von Handschmerzen bei Trainierenden abgeleitet werden.

Methodik
Ein interdisziplinäres Team aus Hand- und Sporttherapeuten entwickelte Empfehlungen für den gelenkschonenden Umgang mit Trainingsgeräten. Dabei wurden sowohl praktische Erfahrungswerte als auch Erkenntnisse aus der aktuellen Literatur berücksichtigt.

Ergebnisse
Die Analyse ergab konkrete Strategien für einen gelenkschonenden Handeinsatz im Krafttraining - sowohl präventiv als auch bei bestehenden Beschwerden. Dazu zählen die bewusste Wahl geeigneter Grifftechniken, Belastungspunkten sowie der Einsatz unterstützender Hilfsmittel. Dies kann beispielsweise durch eine Reduktion des erforderlichen Kraftaufwands oder durch eine biomechanisch achsengerechte Belastung der Gelenke erreicht werden.

Implikation für die Praxis
Der Beitrag zeigt auf, wie gelenkschonende Massnahmen im Krafttrainingsalltag umgesetzt werden können.

Herausforderung

Gelenkschonende Variante 1

Gelenkschonende Variante 2

FM80 – Protection articulaire des mains – ce qui compte dans le renforcement

Nadine Briefer[1] ([1]Schulthess Klinik, Zurich)

Contexte
Il est prouvé que le renforcement chez les personnes âgées a un effet positif autant sur la santé physique que psychique. Cependant, il n'est pas rare que les personnes âgées souffrent de douleurs aux mains ou d'une force de préhension réduite pendant l'entraînement – en particulier lors du réglage ou de l'utilisation des appareils d'entraînement.

Objectif
L'objectif de ce projet était d'identifier les difficultés typiques rencontrées par les sportifs lors de la manipulation d'appareils d'entraînement. Des recommandations pratiques devaient en découler pour prévenir, ainsi que réduire les douleurs aux mains chez ces personnes.

Méthodologie
Une équipe interdisciplinaire composée de thérapeutes de la main et du sport a élaboré des recommandations pour une utilisation des appareils d'entraînement qui ménage les articulations. Ces recommandations tiennent compte à la fois de l'expérience pratique et des connaissances issues de la littérature actuelle.

Résultats
L'analyse a permis de définir des stratégie concrètes pour une utilisation des mains ménageant les articulations lors du renforcement – tant à titre préventif qu'en cas de troubles existants. Cela comprend le choix conscient de techniques de préhension appropriées, de points d'appui et de l'utilisation de moyens auxiliaires et peut être obtenu, par exemple, en réduisant l'effort requis ou grâce à la charge des articulations conformément à leur axe biomécanique.

Implication pour la pratique
La présentation montre comment mettre en œuvre des mesures visant à ménager les articulations dans le cadre d'un renforcement musculaire quotidien.

Défi

Variante 1 ménageant les articulations

Variante 2 ménageant les articulations

FM81 – Prothetische Versorgungsmöglichkeiten bei Finger- und Teilhandamputationen.

Patrick Meier[1], Tobias Henn[2], Melanie Herzog[2], Christian Thienel[2], Sophia Lehmann[2] ([1]Rehaklinik bellikon, Belliko; [2]Rehaklinik Bellikon, Bellikon)

Finger- und Teilhandamputationen stellen eine besondere Herausforderung in der prothetischen Versorgung dar. Neben dem funktionellen Verlust sind auch ästhetische und psychosoziale Aspekte relevant, die bei der Auswahl und Anpassung moderner Finger- und Teilhandprothesen berücksichtigt werden müssen. Der Beitrag gibt einen Überblick über aktuelle und perspektivische Versorgungskonzepte im Bereich der Teilhand- und Fingerprothetik. Im Fokus stehen dabei passiv und aktiv geführte Systeme, modulare Prothesenlösungen sowie patientenspezifische Anpassungsmöglichkeiten durch additive Fertigung. Zudem wird die Bedeutung der frühzeitigen Versorgung, interdisziplinären Zusammenarbeit und gezielten Rehabilitation für den langfristigen Therapieerfolg hervorgehoben. Ziel ist es, einen praxisorientierten Überblick über bewährte und zukunftsweisende Ansätze in der prothetischen Versorgung von Finger- und Teilhandamputationen zu geben.

FM81 – Options prothétiques lors de l'amputation d'un doigt ou d'une partie de la main

Patrick Meier[1], Tobias Henn[2], Melanie Herzog[2], Christian Thienel[2], Sophia Lehmann[2] ([1]Rehaklinik bellikon, Belliko; [2]Rehaklinik Bellikon, Bellikon)

Les amputations des doigts ou partielles de la main représentent un défi particulier dans le traitement prothétique. Outre la perte fonctionnelle, les aspects esthétiques et psychosociaux sont également importants et doivent être pris en compte lors du choix et de l'adaptation des prothèses modernes de doigts ou d'une partie de la main. La présentation donne un aperçu des concepts de soins actuels et les perspectives en matière de prothèses partielles de la main et des doigts. Elle se concentre sur les systèmes passifs et actifs, sur les solutions prothétiques modulaires ainsi que sur les possibilités d'adaptation spécifiques au patient grâce à des fabrications additionnelles. L'importance d'une prise en charge précoce, d'une collaboration interdisciplinaire et d'une rééducation ciblée pour un succès thérapeutique à long terme sont également soulignées. L'objectif est de donner un aperçu pratique des approches éprouvées et innovantes en matière de prothèses lors de l'amputation d'un doigt ou d'une partie de la main.

FM82 – Blood Flow Restriction in Hand Therapy: A Safe, Effective, and Game-Changing Innovation

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Background
Blood Flow Restriction (BFR) training, first developed by Yoshiaki Sato in the 1960s, is a cutting-edge technique involving controlled pressure during low-load exercises, inducing a hypoxic environment that promotes neuromuscular and anabolic responses. While widely used in lower limbs rehab and athletic populations, its application in hand therapy remains underexplored. BFR offers significant potential for patients with pain, weakness, or post-surgical limitations, enabling neuromuscular adaptation similar to high-load training without the associated mechanical strain.
Method
We investigated the current state of the literature using keywords such as "BFR", "Hand", and "Rehabilitation," combined with various Boolean operators. Searches were conducted in PubMed and Google Scholar. This review identified studies exploring BFR in different conditions like: fractures, tendinopathy, sarcopenia, nerve injuries, and proprioception deficits. BFR was applied using pneumatic cuffs inflated to 50-80% of arterial occlusion pressure, integrated with rehabilitation protocols or low-load resistance training.
Results
BFR significantly improved clinical outcomes across multiple conditions. In distal radius fractures, it enhanced grip strength by 40-50% and improved range of motion by up to 30%, both in conservative and post-surgical management (Cancio et al., Sgromolo et al.). For sarcopenic patients, BFR increased muscle mass by 10-15% and IGF-1 levels by 20-30%, comparable to high-load training but with better safety and tolerance (Zhang et al.). Proprioception at the wrist improved by 25-35% (Królikowska et al.), and BFR combined with electrical stimulation promoted nerve regeneration, reducing recovery time by 20-30% (Chu et al.). Cross-education effects were observed in untrained limbs, showing strength increases of 15-20% (Wong et al.).
Discussion
BFR offers a paradigm shift in hand therapy, providing a safe, effective rehabilitation tool that delivers results similar to high-load training with minimal mechanical load. It's particularly useful for frail, post-surgical, or neurologically impaired patients. Given its low cost, ease of implementation, and broad applicability, BFR should be considered a primary strategy in upper limb rehabilitation. Growing evidence confirms its potential to improve patient outcomes.
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2. Sgromolo et al., 2024
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Freie Mitteilungen / Communications libres V:

FM83 – Effect of MCPJ Differential Angle and RM Orthotic Design on IPJ Mechanics: A Biomechanical Study

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Introduction: The exercise Relative Motion (RM) orthosis is designed by hand therapists to improve active interphalangeal joint (IPJ) motion while allowing functional use. It positions the metacarpophalangeal joint (MCPJ) of the affected digit in greater extension or flexion relative to adjacent MCPJs, enhancing distal torque transmission and, therefore, promoting active IPJ motion.
To date, the optimal MCPJ differential angle and RM orthosis design for the training of IPJ motion is unclear. Most therapists position the affected digit in 11–30° more flexion or extension compared to adjacent MCPJs using a 3- or 4-finger orthosis design without a consensus on the optimal configuration [(1)]. This study evaluates the influence of MCPJ differential angle and exercise RM orthotic design on IPJ motion and tendon force using a cadaver model.
Methods: Six fresh-frozen cadaver hands were tested in a custom-made 3D-printed apparatus (Figure 1). For each tested orthosis design, force was applied to the extensor digitorum communis (EDC) or flexor digitorum profundus (FDP) muscle using a hanging scale. The minimal force required for maximum IPJ motion was recorded, using the mean of three repetitions per condition for analysis.
Results: The optimal design for IPJ extension with minimal EDC muscle force was a 3-finger RMF orthosis with a 20° MCPJ angle for the index and small fingers, and a 4-finger design with a 20° MCPJ angulation for the middle and ring fingers.
For IPJ flexion, the most effective RME orthosis design was a 3-finger orthosis for all fingers. A 20° MCPJ angle for the index and ring fingers and 30° for the middle and small fingers required the least FDP muscle force.
Implications for practice: These preliminary findings provide insights into exercise RM orthosis designs for the training of IPJ motion, suggesting that specific MCPJ angulations may optimize training with minimal muscle strain. Hand therapists may use these findings as a basis for future orthosis designs, but clinical judgement remains crucial.

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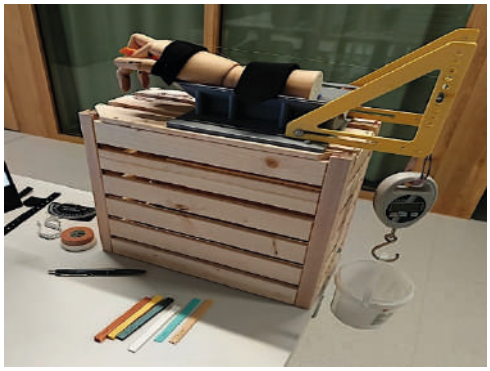

Figure 1_ Custom-made 3D-printed apparatus for serial testing of different RM orthosis designs.jpg

FM84 – Konservative Nachbehandlung akuter geschlossenen Sagittalbandverletzungen am Metacarpophalangealgelenk

Viviane Mouron[1] ([1]Zuger Kantonsspital, Horgen)

Motivation: Akute geschlossene Sagittalbandverletzungen (SB-Verletzungen) am Metacarpophalangealgelenk (MCP) gehören im klinischen Alltag der Ergotherapie zu den selten vorkommenden Verletzungen. Die Einschränkungen im Alltag sind für die betroffenen Patient: Innen häufig sehr hoch. Aufgrund der Seltenheit des Auftretens bestehen erhebliche Unsicherheiten in der Nachbehandlung. Gegenwärtig gibt es kein Nachbehandlungsprotokoll zu SB-Verletzungen in unserem Spital.
Fragestellung: Wie kann eine konservative, evidenzbasierte Nachbehandlung einer akuten SB-Verletzung am MCP in der Ergotherapie optimal gestaltet werden?
Methodologie: Es wurde eine strukturierte Literaturrecherche in den Datenbanken Cochrane Library, PubMed und Google Scholar durchgeführt, ergänzt durch eine KI-gestützte Suche über Research Rabbit. Das daraus zusammengestellte Nachbehandlungsprotokoll wurde interprofessionell (Ergotherapie und Handchirurgie) besprochen.
Ergebnisse: Basierend auf der aktuellen Evidenz wurde ein Nachbehandlungsprotoll für die Ergotherapie entwickelt. Grundlage bildete das systematische Review von Wu et al. (2020), welches die Wirksamkeit der konservativen Therapie mittels Schienung belegt. Das Protokoll umfasst kompakte Hintergrundinformationen zur Anatomie und Symptomatik (Chinchalkar et al., 2015), sowie einen strukturierten Leitfaden mit zeitlicher Abstimmung der Behandlung, konkreten Schienenempfehlungen (Catalano et al., 2006, Roh et al., 2019), spezifische Therapieinhalte und Hinweisen zum Heimprogramm.
Implikationen: Das erstellte Nachbehandlungsprotokoll bietet eine evidenzbasierte Grundlage für die konservative Nachbehandlung in der Ergotherapie. Es sollte nun klinisch erprobt und weiterentwickelt werden.

Wu, K., Masschelein, G., & Suh, N. (2021). Treatment of sagittal band injuries and extensor tendon subluxation: a systematic review. *Hand*, *16*(6), 854-860.
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FM84 – Traitement conservateur après une lésion aiguë fermée de la bandelette sagittale au niveau de l'articulation métacarpo-phalangienne

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Motivation : Les lésions aiguës fermées des bandelettes sagittales (lésions des BS) au niveau de l'articulation métacarpo-phalangienne (MCP) sont des blessures survenant rarement dans le quotidien clinique de l'ergothérapeute. Les restrictions dans la vie quotidienne des patients concernés sont souvent très importantes. En raison de la rareté de cette blessure, il existe une incertitude considérable quant au traitement. Actuellement, il n'existe pas de protocole de traitement pour les lésions des BS dans notre hôpital.
Questionnement : Comment peut être conçu de manière optimale le traitement conservateur, fondé sur des preuves, d'une lésion aiguë de la BS au niveau de la MCP en ergothérapie ?
Méthodologie : Une recherche de littérature structurée a été effectuée dans les bases de données Cochrane Library, PubMed et Google Scholar, complétée par une recherche assistée par l'intelligence artificielle via Research Rabbit. Le protocole de traitement ainsi élaboré a ensuite fait l'objet d'une discussion interprofessionnelle (ergothérapie et chirurgie de la main).
Résultats : Un protocole de traitement pour l'ergothérapie a été développé sur la base des données actuelles. Il s'appuie sur la revue systématique de Wu et al. (2020), qui démontre l'efficacité d'un traitement conservateur par attelle. Le protocole contient des informations de base concises sur l'anatomie et la symptomatologie (Chinchalkar et al., 2015), ainsi qu'un guide structuré avec un calendrier du traitement, des recommandations concrètes sur les attelles (Catalano et al., 2006, Roh et al., 2019), du contenu thérapeutique spécifique et des conseils pour le programme d'exercices à domicile.
Implication pour la pratique : Le protocole de traitement établi fournit une base fondée sur des données probantes pour un traitement conservateur en ergothérapie. Il doit désormais être testé cliniquement et perfectionné.

Wu, K., Masschelein, G., & Suh, N. (2021). Treatment of sagittal band injuries and extensor tendon subluxation: a systematic review. *Hand*, *16*(6), 854-860.
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FM85 – RMF-Protokoll für genähte Beugesehnen in den Bereichen I-III: von der Theorie zur Praxis

Pauline Chèvre[1], Romain Stohr[2], Thomas Mészáros[2] ([1]HFR Fribourg - Hôpital cantonal, Fribourg; [2]Fribourg)

In den letzten zehn Jahren gab es in der Behandlung von genähten Beugesehnen in den Bereichen I bis III eine Entwicklung von der passiven Mobilisierung (Kleinert-Protokoll) hin zur frühzeitigen aktiven Mobilisierung (Manchester-Protokoll und Controlled Actived Motion – CAM). Die Methode der Relative Motion Flexion (RMF) wurde bereits in den 1980er Jahren erwähnt, aber aufgrund fehlender geeigneter technischer Mittel aufgegeben. Vor Kurzem wurde die Methode dank der Sechs-Strang-Naht und Fallstudien, die um 2020 veröffentlicht wurden, wieder aufgegriffen.[1,2] Allerdings gibt es zu diesem Thema noch immer nur wenige Veröffentlichungen.
In unserem Krankenhaus wurde basierend auf den in der Literatur verfügbaren Daten ein RMF-Protokoll entwickelt. Dieses Protokoll wird vorgestellt, ebenso wie die Erfahrungen der Chirurg:innen, Therapeut:innen und Patient:innen mit diesem neuen Ansatz bei der Behandlung von sieben Personen seit Sommer 2023.
Aus chirurgischer Sicht wird eine in der aktuellen Literatur als Standard geltende Technik angewendet: Sechs-Strang-Naht nach Lim-Tsai und fortlaufende Überwendelung, Erweiterung der Ringbänder, um ein störungsfreies Gleiten der Naht zu ermöglichen. Die Wahl eines postoperativen RMF-Protokolls basiert subjektiv auf der Qualität der Naht und der Compliance der Patientin bzw. des Patienten.
Gemäss Beobachtungen von Therapeut:innen und Patient:innen fördert die Verwendung einer RMF-Schiene die Integration der verletzten Hand in den Alltag bereits in den ersten Tagen nach der Operation und ermöglicht so eine schnellere Wiederherstellung der Beweglichkeit und verringert gleichzeitig sekundäre Komplikationen. Die vereinfachten Übungen des Protokolls verbessern die Zugänglichkeit, aber die Anfertigung der Jochschiene erfordert Fachwissen und Präzision, und es muss besonders darauf geachtet werden, dass der verletzte Finger beim Greifen einbezogen wird.
Zusammenfassend lässt sich sagen, dass die Patient:innen nach den Erfahrungen der letzten zwei Jahre aktiver an ihrer Behandlung mitwirken und schneller in ihren Alltag zurückfinden, einschliesslich der Wiederaufnahme ihrer beruflichen Tätigkeit.

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FM85 – Protocole RMF pour tendons fléchisseurs suturés en zone I-III : de la théorie à la pratique

Pauline Chèvre[1], Romain Stohr[2], Thomas Mészáros[2] ([1]HFR Fribourg - Hôpital cantonal, Fribourg; [2]Fribourg)

Au cours des dix dernières années, la prise en charge des tendons fléchisseurs suturés en zone I à III a évolué, passant de la mobilisation passive (protocole Kleinert) à la mobilisation active précoce (protocoles Manchester et controlled actived motion - CAM). Récemment, la méthode du mouvement relatif en flexion (RMF), déjà évoquée dans les années 80 mais abandonnée faute de moyens techniques adaptés, a refait surface grâce à la suture à six brins et à des études de cas parues autour de 2020.[1,2] Toutefois, les publications sur ce sujet restent encore limitées.
Un protocole RMF a été élaboré dans notre hôpital en s'appuyant sur les données disponibles dans la littérature préexistante. Sa description, ainsi que le retour d'expérience chirurgien-thérapeute-patient se basant sur sept personnes ayant bénéficié de cette nouvelle approche depuis l'été 2023, sont présentés.
D'un point de vue chirurgical, une technique standard au vue de la littérature actuelle est réalisée : suture tendineuse avec six brins selon Lim-Tsai et surjet circonférentiel, élargissement des poulies pour permettre un coulissement de la suture sans conflit avec ces dernières. Le choix d'un protocole RMF en post-opératoire se base subjectivement sur la qualité de la suture et sur la compliance du patient.
Les constatations thérapeute-patient indiquent que l'utilisation d'une attelle de type RMF favorise l'intégration de la main blessée au quotidien dès les premiers jours suivant l'intervention chirurgicale, permettant ainsi une récupération de la mobilité plus rapide tout en diminuant les complications secondaires. Les exercices simplifiés du protocole en améliorent l'accessibilité, mais la confection du joug requiert expertise et précision, et une attention particulière doit être portée à l'intégration du doigt lésé lors des préhensions.
En conclusion, d'après l'expérience acquise ces deux dernières années, les patients participent plus activement à leur traitement et retournent plus rapidement à leurs activités quotidiennes, dont la reprise professionnelle.

1) Newington L., Ross R., & Howell J. W. (2021). Relative motion flexion splinting for the rehabilitation of flexor

tendon repairs: A systematic review. *Hand Therapy*, *26*(3), 102-112.
2) Henry S. L., & Howell J. W. (2020). Use of a relative motion flexion orthosis for postoperative management of zone I/II flexor digitorum profundus repair: a retrospective consecutive case series. *Journal of Hand Therapy, 33*, 296–304.

FM86 – Comparative Case Study of Post-Surgical Rehabilitation of Triangular Fibrocartilage Complex Injuries

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Background:
The Triangular Fibrocartilage Complex (TFCC) is a critical ligament structure of the wrist that provides stability and facilitates load transmission through the upper extremity. Due to the wrist's dynamic architecture, TFCC injuries are complex and present significant rehabilitation challenges. Surgical repair can be performed arthroscopically or via an open approach, both typically followed by immobilization. However, the duration of immobilization varies widely among practitioners, and its impact on rehabilitation outcomes remains under-examined.
Purpose:
To evaluate the impact of prolonged immobilization on rehabilitation outcomes following TFCC repair.
To assess whether the author's early mobilization TFCC protocol—originally designed for athletes—is applicable to non-athletic patients.
Methods:
This retrospective, mixed-method comparative case study examines two post-surgical TFCC repair cases involving non-professional athletes: one treated arthroscopically and one via open surgery. Each patient underwent different immobilization durations and was treated using a modified early mobilization protocol.
Results:
The patient who underwent open repair and was immobilized in a solid cast for eight weeks developed complex regional pain syndrome (CRPS), resulting in delayed rehabilitation. At five months post-surgery, this patient was still undergoing therapy. Conversely, the patient who had arthroscopic repair was immobilized for only two weeks and began therapy earlier. This patient was discharged from therapy five months post-surgery and returned to work two months post-operation. Furthermore, the treatment protocol tailored for professional athletes had to be modified significantly for it to be usable for the non-athletic population.
Conclusion:
Prolonged immobilization may negatively affect recovery after TFCC repair and increase the risk of complications such as CRPS. Early mobilization protocols, even in non-athletic patients, may lead to faster functional recovery and earlier return to work.
Keywords:
TFCC, wrist rehabilitation, early mobilization, hand therapy, post-operative care
Declaration:
Nothing to declare.

FM87 – Konfektionierte Daumenschiene oder 3-D-Druck-Silikonschiene bei Rhizarthrose? eine Einzel-Fall-Serie

Franziska Heigl[1], Karin Szekeres[1] ([1]ZET Handrehabilitation, Bern)

Hintergrund: Die Schienenbehandlung ist ein wichtiger Bestandteil der konservativen Rhizarthrose-Therapie, da Schienen Schmerzen lindern, die Daumenfunktion verbessern und die Lebensqualität erhöhen können (Esteban Lopez et al., 2023). Die Auswahl des passenden Modells gestaltet sich im ergotherapeutischen Alltag jedoch oft schwierig, da Tragekomfort, Funktion, Wirkung und Kosten eine Rolle spielen.
Ziel: Welchen Effekt auf Schmerz und Alltagsfunktion haben konfektionierte Daumenschienen im Vergleich zu 3-D-Druck-Silikonschienen, wie ist der Tragekomfort und das Wohlbefinden als Ganzes bei Rhizarthrose?
Methode: Wir untersuchten diese Fragen in einer kleinen strukturierten Einzel-Fall-Serie. 4 Frauen mit Rhizarthrose (zwischen 46 und 80 Jahren) füllten zu zwei Zeitpunkten Fragebögen aus. Die Fragebögen wurden selbst zusammengestellt und enthielten numerische Fragen (z.B. zu Schmerz) und Fragen mit visuell analogen Skalen (z.B. zu Tragekomfort), sowie die Patient Specific Functional Scale (PSFS) (jeweils individuell erstellt).
Ergebnis: 3 Frauen hatten bereits zum ersten Zeitpunkt eine Schienenversorgung durch ihre Ergotherapeut*in, eine davon zwei verschiedene (konfektionierte harte Modelle (n=3), konfektioniertes weiches Modell (n=1)). Nur eine Frau trug das weiche Modell zwischendurch nachts zur Beruhigung der Schmerzen. Die Auswertungen zum 2. Zeitpunkt (6 Wochen nach Erhalt des 3-D-Druck-Silikon-Modells) zeigen einen klaren Vorteil zugunsten des 3-D-Druck-Silikon-Modells. Zum Beispiel: Schmerz: NRS in Ruhe im Daumen: Mittelwert: Zeitpunkt 1=3.5, Zeitpunkt 2=0.1 (0=kein Schmerz, 10=schlimmster Schmerz); Wohlbefinden in der Schiene als Ganzes: Mittelwert: konfektionierte Modelle VAS=2.1, 3-D-Druck-Silikon-Modell VAS=8.1 (0=sehr unbequem, 10=sehr bequem).
Implikationen für die Praxis: Die Ergebnisse weisen darauf hin, dass das 3-D-Druck-Silikon-Modell deutlich bequemer ist und einen höheren Tragekomfort hat. Vermutlich wird es darum auch bei Alltagstätigkeiten mehr getragen und führt zu einer stärkeren Schmerzreduktion. Da dieses Modell allerdings massiv viel teurer ist (20x), muss im Alltag mit den Klient*innen gut abgewogen werden, welcher Kosten-Nutzen-Effekt erwünscht ist.
Referenz: Esteban Lopez, L.M., Hoogendam, L., Vermeulen, G.M., Tsehaie, J., Slijper, H.P., Selles, R.W., & Wouters, R.M. (2023). Long-term outcomes of nonsurgical treatment of thumb carpometacarpal osteoarthritis: a cohort study. The Journal of Bone and Joint Surgery 105(23):p 1837-1845.

FM87 – Attelle de pouce préfabriquée ou attelle en silicone imprimée en 3D en cas de rhizarthrose ? Une série de cas

Franziska Heigl[1], Karin Szekeres[1] ([1]ZET Handrehabilitation, Berne)

Contexte : Le traitement par attelle est un élément important du traitement conservateur de la rhizarthrose, car l'attelle peut soulager les douleurs, améliorer la fonction du pouce et augmenter la qualité de vie (Esteban Lopez et al., 2023). Toutefois, le choix d'un modèle approprié s'avère souvent difficile dans le quotidien ergothérapeutique puisque le confort de port, la fonction, l'efficacité et le coût jouent un rôle.
Objectif : Quel est l'effet des attelles de pouce préfabriquées sur la douleur et la fonction quotidienne par rapport aux attelles en silicone imprimées en 3D, quel est le confort de port et le bien-être général en cas de rhizarthrose ?
Méthodologie : Nous avons examiné ces questions dans le cadre d'une petite série de cas structurée. Quatre femmes atteintes de rhizarthrose (âgées de 46 à 80 ans) ont rempli des questionnaires à deux reprises. Les questionnaires ont été élaborés par nos soins et comprenaient des questions avec une échelle numérique (par exemple sur la douleur) et des questions avec une échelle visuelle analogique (par exemple sur le confort de port), ainsi que la Patient Specific Functional Scale (PSFS) (remplie individuellement pour chaque patiente).
Résultats : Trois femmes avaient déjà reçu une attelle de la part de leur ergothérapeute lors du premier rendez-vous, dont une bénéficiant de deux modèles différents (modèles rigides préfabriqués (n=3), modèle souple préfabriqué (n=1)). Seule une femme portait de temps en temps le modèle souple pendant la nuit pour soulager la douleur. L'évaluation réalisée lors du deuxième rendez-vous (six semaines après la réception du modèle en silicone imprimé en 3D) a montré un net avantage en faveur du modèle en silicone imprimé en 3D. Par exemple : douleur : échelle numérique au repos du pouce : moyenne : moment 1 = 3.5, moment 2 = 0.1 (0 = aucune douleur, 10 = la pire douleur) ; bien-être dans l'attelle en général : moyenne : modèles préfabriqués EVA = 2.1, modèle en silicone imprimé en 3D EVA = 8.1 (0 = très inconfortable, 10 = très confortable).
Implication pour la pratique : Les résultats indiquent que le modèle en silicone imprimé en 3D est nettement plus confortable et offre un meilleur confort de port. Il est donc probable qu'il soit davantage porté dans les activités quotidiennes et qu'il permette une réduction de la douleur plus importante. Cependant, ce modèle étant beaucoup plus cher (20x), il convient d'évaluer soigneusement avec les clients le rapport coût-bénéfice souhaité dans le cadre d'une utilisation quotidienne.
Références : Esteban Lopez, L.M., Hoogendam, L., Vermeulen, G.M., Tsehaie, J., Slijper, H.P., Selles, R.W., & Wouters, R.M. (2023). Long-term outcomes of nonsurgical treatment of thumb carpometacarpal osteoarthritis: a cohort study. The Journal of Bone and Joint Surgery 105(23):p 1837-1845.

Workshops SGHR
Ateliers SSRM

Workshop
Kombination von Vitality Flossing mit anderen therapeutischen Techniken

Marlene Arnold[1] , Beatrice Kobi[1],([1]Inselspital Bern, Bern)

Nach einer kurzen theoretische Einführung mit Blick auf die Evidenzlage (aktuelle Studien) der Wirkungsweisen, wenden wir uns der Anwendungsgebieten und der praktischen Durchführung zu.
Wir möchten in dem Workshop Vitality Flossing die Behandlung von Sekundärschäden nach Traumata wie Narbenadhäsionen, Kapselkontrakturen und Weichteilfibrosen mit Lymphödem aufzeigen. Aber auch Krankheitsbilder aus der Neurologie als da wären periphere Nervenverletzungen, Innervationsstörungen und Engpasssyndrome werden wir erfolgreich behandeln lernen. Zur Unterstützung werden Aktivierungshilfen vor, während und nach dem Flossing vorgestellt durch das Miteinbeziehen verschiedener Techniken aus der Spiraldynamik, dem PNF, der Faszientherapie, der Triggerpunktbehandlung und der Lymphdrainage.
Es werden Unterschiede von Flossingbändern nach Breite, Länge, Dicke und Qualität gezeigt.
In 2-er-Gruppen werden wir nach vorheriger Instruktion der Wickeltechniken und der passiven und aktiven Zusatzbewegungen aneinander üben.
Im Workshop erhält jeder Teilnehmer 2 Flossingbänder (2,5 cm und 5 cm) zur Verfügung gestellt. Diese können im Anschluss für 23.- Franken (25% Ermässigung) erworben werden.

Atelier
Combinaison du Vitality Flossing avec d'autres techniques thérapeutiques

Marlene Arnold[1] , Beatrice Kobi[1],([1]Hôpital de l'Île, Berne)

Après une brève introduction théorique axée sur les preuves scientifiques (études actuelles) relatives aux modes d'action, nous nous intéresserons aux domaines d'application et à la mise en œuvre pratique.
Dans le cadre de l'atelier Vitality Flossing, nous souhaiterions présenter le traitement des lésions secondaires après un traumatisme telles que les adhérences cicatricielles, les contractures capsulaires et les fibroses tissulaires des tissus mous avec lymphœdème. Mais nous apprendrons également à traiter avec succès des tableaux cliniques neurologiques comme les lésions nerveuses périphériques, les troubles de l'innervation et les syndromes de compression. A titre d'aide, des techniques d'activation avant, pendant et après le flossing seront présentées en intégrant diverses techniques issues de la spirale dynamique, de la PNF, de la thérapie fasciale, du traitement des points trigger et du drainage lymphatique.

Les différences entre les bandes de flossing en termes de largeur, longueur, épaisseur et qualité seront présentées.
Après avoir reçu des instructions sur les techniques d'enroulement et les mouvements additionnels passifs et actifs, nous nous entraînerons par groupe de deux. Deux bandes de flossing (2.5 cm et 5 cm) seront mises à disposition de chaque participant durant l'atelier. Ces dernières pourront ensuite être achetées au prix de CHF 23.- (25% de réduction).

Poster SGH
Posters SSCM

P1 – Diagnostic Value of Air Arthrography in Detecting SL, LT, and TFCC Lesions of the Wrist

Mauro Maniglio[1], Lorin Rompen[1], Andreas Schweizer[1] ([1]Balgrist Universitätsklinik, Zürich)

Background:
Although largely overlooked in modern diagnostics, air arthrography is a simple, low-cost imaging technique with untapped potential in wrist injury evaluation. This study revisits its utility by comparing its diagnostic accuracy for scapholunate (SL), lunotriquetral (LT), and triangular fibrocartilage complex (TFCC) lesions against contrast-enhanced MRI, using wrist arthroscopy as the gold standard.
Methods:
We retrospectively analyzed 49 patients (27 women, 22 men; mean age 37) who underwent contrast MRI, air arthrography, and subsequent wrist arthroscopy. Lesion distribution included 14 SL tears, 18 TFCC injuries, one LT tear, and 16 wrists without ligament injuries. Air arthrography was performed just before surgery under sterile conditions, with air injected into the midcarpal or distal radioulnar joint under fluoroscopic guidance. The presence of air leakage into adjacent compartments indicated a ligament tear. Agreement between imaging findings and arthroscopy was assessed using Cohen's kappa.
Results:
Air arthrography demonstrated a sensitivity of 100% and specificity of 97% in detecting SL, LT, and TFCC lesions. It showed slightly stronger concordance with arthroscopy ($\kappa = 0.689$) than MRI arthrography ($\kappa = 0.523$), though the difference was not statistically significant.
Conclusion:
Air arthrography proved to be a reliable and cost-effective method for identifying key intrinsic wrist ligament injuries, with diagnostic performance comparable to MRI. Particularly valuable when performed immediately before arthroscopy, this technique may serve as a practical intraoperative adjunct in settings with limited resources or where MRI is less accessible.

P2 – Glomus Tumors of the Upper Extremity: A Case Series Highlighting Typical and Atypical Presentations

Daphni Siampli[1], Saskia Kamphuis[2], PD Dr. med Michael Dietrich[3], Dr. med Julia Sproedt[3] ([1]Stadtspital Zürich Standort Waid, Zürich; [2]University Hospital Basel, Basel; [3]Stadtspital Zürich, Zürich)

Background: Glomus tumors are rare benign perivascular neoplasms most commonly found in the subungual region of the digits, typically manifesting with localized tenderness, cold hypersensitivity, and paroxysmal pain. Timely identification is imperative for alleviating symptoms and restoring function. We present an analysis of three patients exhibiting glomus tumors in both typical and atypical anatomical sites of the upper extremity.
Material and Methods: Three patients were evaluated: a subungual glomus tumor of the ring finger, a glomus tumor of the proximal forearm, and a glomus tumor adjacent to the deep palmar arch. Clinical examination raised the suspicion of glomus tumors in all cases. Magnetic resonance imaging (MRI) was performed in all patients; however, the tumor was visualized only in one case. Surgical excision under tourniquet control was performed, and histopathological confirmation was obtained.
Results: All patients reported chronic localized pain exacerbated by cold exposure. MRI successfully localized the lesion only in one patient; in the remaining two cases, imaging findings were inconclusive. Complete surgical excision yielded full symptomatic alleviation without postoperative complications or tumor recurrence during follow-up. Histology confirmed benign glomus tumors with characteristic positive staining for smooth muscle actin and absence of malignancy.
Conclusion: While subungual glomus tumors constitute the most common presentation, extradigital variants in the proximal forearm and palm underscore the necessity of maintaining a heightened level of suspicion in cases of unexplained focal pain in the upper extremity. Expedient diagnosis based on clinical examination and meticulous surgical excision are critical for ensuring optimal functional outcomes and minimizing the risk of recurrence. Our findings corroborate recent studies emphasizing the diagnostic challenges and surgical management of glomus tumors across diverse anatomical sites [Çevik et al., 2021; Jeong et al., 2015; Kaur et al., 2024]

P4 – Fracture Dislocation of the Pisiform Bone in 14-Year-Old Boy-A Case Report

Ondrej Prochazka[1], Tomás Sánchez, Olten Schweiz Sánchez[1], Karolina Kasparkova[1] ([1]Kantonsspital Olten, Olten)

Introduction / Aim of the Study:
Fracture-dislocation of the pisiform bone is extremely rare in children, and there is currently no consensus regarding its optimal treatment. We present the case of a 14-year-old boy who sustained a high-energy wrist trauma resulting in a rare combination of pisiform

fracture-dislocation and concomitant fractures of the scaphoid, proximal radius, and proximal phalanx of the thumb.

Material and Methods:

Closed and open reduction attempts of the pisiform were unsuccessful. Consequently, a primary pisiformectomy was performed. The accompanying fractures were treated conservatively with immobilization for six weeks. Clinical follow-up extended to 3.5 years. A focused literature review was conducted, identifying comparable pediatric cases.

Results:

The pisiformectomy proceeded without complications. At 12 weeks postoperatively, the patient was nearly pain-free with only minimal loss of wrist strength and range of motion. At 3.5 years, functional outcome was excellent, with a DASH score of 3.3/100 and a Mayo Wrist Score of 95. Our literature review identified only four pediatric cases with fracture-dislocation of the pisiform, and nine additional cases with isolated dislocation. All patients who underwent pisiformectomy—either as initial treatment or secondary intervention—demonstrated very good outcomes.

Discussion and Conclusion:

Pisiform fracture-dislocation is a rare and easily overlooked injury in pediatric patients. Diagnostic imaging, especially CT, is often required for accurate identification. In cases of comminuted fractures or irreducible dislocations, primary pisiformectomy is a valid and well-tolerated treatment option, even in the young. It avoids prolonged immobilization and offers an excellent functional prognosis.

Clinical Relevance:

Primary pisiformectomy should be considered as a definitive treatment option for complex pisiform injuries in pediatric patients when reduction is not feasible. Early recognition and appropriate management can help prevent chronic pain or dysfunction.

P5 – Radial Lengthening During ORIF of a Distal Radius Fracture with Positive Ulnar Variance: Case Report

Catherine Marcou[1] ([1]HFR, Anières)

Introduction:

Distal radius fractures are among the most common upper limb fractures. When a symptomatic ulnar impaction syndrome is present pre-operatively, surgical treatment should address not only fracture stabilization but also the positive ulnar variance. We report a clinical case where open reduction and internal fixation (ORIF) of a distal radius fracture was combined with radial lengthening to address ulnar impaction syndrome.

Case Report:

A 57-year-old right-handed female sustained an intra-articular distal radius fracture of the right wrist. She had a history of chronic ulnar-sided wrist pain. CT scan revealed a proximal lunatum cyst, suggestive of ulnar impaction syndrome. Surgical management consisted of ORIF with a volar locking plate, combined with 2mm radial lengthening to achieve neutral ulnar variance.

Results:

Three months postoperatively, the patient had fully resumed daily activities without limitation. The ulnar impaction test was negative. Grip strength, measured with a Jamar dynamometer, was 8 kg (right) vs15 kg (left), consistent with expected postoperative recovery. Key pinch strength was 7 kg (right) and 8 kg (left), and tripod pinch strength was 3 kg vs 7 kg. Wrist flexion-extension was 70°–0°–65° (right) versus 80°–0°–70° (left). Pro-supination was 80°–0°–90° (right), compared to 90°–0°–90° (left). Ulnar-radial inclination was 32°-20° (vs. 40°-30° on the left). The Patient-Rated Wrist Evaluation (PRWE) score was 5/150, indicating minimal pain and excellent function. Radiographs confirmed satisfactory alignment, fracture healing without evidence of displacement. The patient resumed work at 50% six weeks postoperatively and returned fully by three months.

Discussion:

Radial shortening following distal radius fractures can exacerbate pre-existing positive ulnar variance, contributing to chronic ulnar-sided wrist pain and functional limitations. Radial lengthening during ORIF successfully addressed both the acute fracture and the underlying biomechanical abnormality, leading to rapid functional recovery and high patient satisfaction.

Conclusion:

Intentional radial lengthening during ORIF of a distal radius fracture can be a valuable surgical technic in patients with pre operatively chronic ulnar-sided wrist pain and suspected ulnar impaction syndrome. Preliminary outcomes indicate that this approach yields functional and radiographic results that are at minimum equivalent to those achieved with standard ORIF techniques.

P7 – Interprofessional consultation with advanced practice roles in hand therapy

Simon Roner[1], Vera Beckmann-Fries[2], Nadine Schulz[2] ([1]Universitätsspital Zürich, Zürich; [2]USZ, Zürich)

Einleitung

Die demographische Entwicklung unserer Gesellschaft, kombiniert mit einem Mangel an Hausärzten stellt eine Herausforderung in der ambulanten Betreuung von handchirurgischen Patienten in naher Zukunft dar. Zudem besteht eine hohe Abhängigkeit vom Ausland, 41% der Ärzte in der Schweiz haben ein ausländisches Arztdiplom. Ein möglicher Ansatz ist ein delegierter Task-Shift; Advanced Practice (AP)-Rollen in der Handtherapie können Aufgaben übernehmen, welche bisher von Handchirurgen durchgeführt wurden.

Methode

Schweizweit als eines der ersten Spitäler wurde eine AP-Rolle in der Handtherapie implementiert, ein detailliertes Konzept inklusive Stellenprofil und Einsatzbereich mit definierten Behandlungsdiagnosen wurde entwickelt. Eine Therapeutin leitet einmal wöchentlich die interprofessionelle Handsprechstunde. Dabei erfolgen Statusaufnahme und Besprechung der Situation mit den Patient:innen. Das weitere Procedere wird im Anschluss gemeinsam mit Oberärzt:innen der Handchirurgie, in direktem Austausch mit den Patient:innen, festgelegt. Die neue Versorgungsstruktur ermöglicht es parallel zur regulären Handsprechstunde,

gleichzeitig eine interprofessionelle Sprechstunde zu führen. Nach 5 Monaten erfolgte eine qualitative Umfrage unter den beteiligten Berufsgruppen. Die Zufriedenheit der Patient:innen wurde mittels PREMS erfasst. Aus empirischen Gründen, in Hinblick auf das Jahr 2026, wurde die Abrechnung zusätzlich mit dem TARDOC und den aktuellen Tarifen für die Ergothrapie/Physiotherapie erhoben.

Resultate
Im Vergleich zu einer separaten handchirurgischen Sprechstunde, - konnten mit der interprofessionellen Handsprechstunde 22% mehr Patienten gesehen werden. Die Erträge aus dem TARDOC konnten dadurch um 23% an einem Tag gesteigert werden. Aus Sicht der Handchirurg:innen konnten einfach und standardisierte Nachkontrollen delegiert werden. Die Handtherapeu:innen schätzten die Übernahme einer neuen Aufgabe und miteinhergehend von mehr Verantwortung. Beide Berufsgruppen wertschätzen die engere Zusammenarbeit. Es konnte kein signifikanter Unterschied in der Zufriedenheit der Patienten gemessen werden.

Diskussion
Wie eingangs erwähnt, wird die Handchirurgie in Zukunft an Kapazitätsgrenzen stossen. Advanced-Practice-Rollen haben sich in einem Pilotprojekt in einem spitalambulanten Setting als praktikabel erwiesen, um delegierte ärztliche Aufgaben zu übernehmen, ohne die Patientenzufriedenheit zu gefährden. Eine Weiterentwicklung der AP-Rolle soll unserer Meinung weiter gefördert werden in der Schweiz.

P10 – Locked MCP Joint of the Middle Finger

Moritz Noll[1], Moritz Noll[1], Urs Hug[1], Stefanie Schmitt[1]
([1]Luzerner Kantonsspital, Luzern)

Das Auftreten von blockierten Langfingern ist ein häufiges Phänomen, welches idR. durch eine Tendovaginitis stenosans im St. 3-4 n. Green verursacht wird. Das Locking-Syndrom des MCPG ist dagegen eine eher seltene Erscheinung, welche v.a. durch Case Reports beschrieben wird. Verschiedene Ätiologien rund um das MC-Köpfchen wie Frakturen, akzessorische Seitenbänder, Osteophyten, intraartikuläre Gelenkkörper und eingeschlagene Sesambeine werden beschrieben. Klinisch zeigt sich hier eine unvollständige aktive/passive Extension des MCPG, während die PIP- und DIP-Gelenke im Gegensatz zum Trigger Finger nicht betroffen und in der Bewegung frei sind. Posner et al. beschrieb zwei Arten von MCP-Locking-Syndromen, welche sich in der Möglichkeit der Flexion unterscheiden. Wir präsentieren ein Typ I (freie Flexion) des rechten Mittelfingers eines 61-jährigen Patienten.

Der Patient stellte sich nach Bagatelltrauma des dominanten Mittelfingers mit einem Streckdefizit des MCPG von ca. 40°. Vorangegangene Traumata oder Blockierungsphänomene des Fingers waren bisher nicht bekannt. In der klinischen Untersuchung zeigte sich ein schmerzhafter federnder Anschlag ab 40° Flexion bei passiver Extension im MCPG. Die Flexion sowie die Beweglichkeit der PIP- und DIP-Gelenke waren nicht eingeschränkt. In der Diagnostik (Röntgen, MRI, CT) zeigte sich der Verdacht auf eine stattgehabte Partialläsion des ulnovolarseitigen Kapselbandapparates mit Gelenksrandosteophyten am MC-Köpfchen. Unter Anästhesie der Hand konnte eine geschlossene Reposition mit anschliessender Beschwerdefreiheit erzielt werden. Drei Monate später zeigte sich nach erneutem Bagatelltrauma ein neuerliches Locking-Syndrom des MCPG, welches selbstständig reponiert werden konnte.

Das MCP-Locking-Syndrom ist durch ein mechanisches Hindernis verursacht, häufig durch das Hängenbleiben des Seitenbandes bzw. eines akzessorischen Seitenbandes an einem prominenten Vorsprung am MCP-Köpfchen. Wie in unserem Beispiel tritt der Typ I in der Regel am Zeige- oder Mittelfinger auf und ist nicht abhängig von einem manifesten Trauma. In unserem Fall konnte die vollständige Funktion und Beschwerdefreiheit durch eine geschlossene Reposition erreicht werden. Alternativ wäre die operative Entfernung der Osteophyten möglich gewesen, jedoch sollte ein schrittweises Vorgehen gewählt werden. Aufgezeigt wird ein Algorithmus für Diagnose/Therapie unter Einbezug der aktuellen Literatur.

P11 – Radiation Exposure in Hand Surgery

Dominik Hoigné[1] ([1]Praxis, St. Gallen)

Einleitung
Wie hoch ist die Strahlenbelastung, der wir HandchirurgInnen durch Mini-BV, C-Bogen und konventionelles Röntgen tatsächlich ausgesetzt sind?
Methoden und Resultate
Die Strahlung wurde in verschiedenen Settings mit einem Live-Dosimeter gemessen. Die **natürliche Strahlung** beträgt in St. Gallen 1.78mSv/Jahr und in der Lenzerheide 2mSv/Jahr.
Die Direktstrahlung mit dem **Mini-BV** auf ein Dosimeter zeigt 0.1-0.5 µSv, also 0.0001-0.0005mSv/genutztem Bild.
Wenn das Live-Dosimeter durch die Bleischürze (0.35mmPb) oder durch Bleiglas (Bleiäquivalent 1.5mm) geröntgt wird, kann keine signifikante Strahlung gemessen werden, der Strahlenschutz wirkt fast vollständig.
Die **Streustrahlung verschiedener Mini-BVs** wurden im Abstand von 10cm und 50cm von der geröntgen Hand gemessen.
Beim Swissray wurden in 10cm Abstand 0.149µSv/ genutztem Bild gemessen.
Beim Orthoscan DI wurden in 10cm Abstand 0.181µSv/ genutztem Bild gemessen.
Beim OrthoScan HD Mini C-Arm wurden in 50cm Abstand 0.015µSv/genutztem Bild gemessen.
Die Erhöhung des Abstandes von 10cm auf 50cm reduziert also die Strahlenbelastung um den Faktor 12.
Bei intensiver Nutzung des Mini-BVs (6500 Bilder/Jahr) macht die Streustrahlung bei 10cm Abstand 30-40% und bei 50cm Abstand 3-4% der natürlichen Strahlung aus.
Mit dem grossen **C-Bogen**, der in der Orthopädie routinemässig eingesetzt wird, messen wir im Abstand

von 1.2m eine kumulative Strahlung von 0.6 mSv/Jahr, das ist 3mal *weniger* als die natürliche Strahlung. Diese unerwartet tiefe Strahlenbelastung kommt zu Stande, da der Operationssaal verbleit ist und somit auch eintretende natürliche Strahlung abschirmt.
Beim **konventionellen digitalen Röntgen** in einer Arztpraxis ist es ähnlich. Auch hier messen wir mit 153 Bilder in 1.5m Abstand nur 0.159mSv/Jahr, also 12mal *weniger* als die natürliche Strahlung ausserhalb des verbleiten Raumes.
Diskussion und Schlussfolgerung
Die Strahlenbelastung in der *Handchirurgie* ist viel geringer als uns im Rahmen der obligatorischen Fortbildungspflicht suggeriert wird. Der Umfang der eingeführte Fortbildungspflicht im Strahlenschutz muss kritisch hinterfragt werden.

P12 – Impact of scaphoid nonunion characteristics on healing outcomes

Raffael Labèr[1], Géraldine Lautenbach[1], Andreas Schweizer[1] ([1]Universitätsklinik Balgrist, Zürich)

Introduction:
Scaphoid nonunion remains a challenging clinical condition with the potential to result in long-term functional impairment. Identifying predictive factors for postoperative healing could improve treatment strategies and patient counselling. This study aimed to evaluate the potential impact of specific scaphoid nonunion characteristics on healing time and the risk of persistent nonunion following surgical intervention.
Material and Methods:
We retrospectively analysed 124 cases of surgically treated scaphoid nonunions between 2002 and 2020. The presence of scaphoid height difference, defect zone, and lateral intrascaphoid angle (LISA) was documented. Statistical evaluation was conducted using bivariable risk factor analysis to determine associations with time to union and persistent nonunion.
Results:
Of the 124 cases, 112 healed uneventfully, while 12 demonstrated persistent nonunion at final follow-up. The median healing time was 69 days (interquartile range: 55–110 days). No statistically significant association was found between the assessed characteristics—scaphoid height difference, defect zone, or LISA—and either time to union or persistent nonunion.
Discussion and Conclusion:
Our findings suggest that the three principal radiographic characteristics of scaphoid nonunion do not significantly influence postoperative healing. These features may therefore be considered negligible in the prognostic assessment of surgical outcomes, supporting a more streamlined approach to preoperative evaluation.

P13 – Allogene and Bioresorbable Materials for Osteosynthesis and Arthrodesis in Hand Surgery

Sören Könneker[1], Simon Roner[1], Pietro Giovanoli[1] ([1]Universitätsspital Zürich, Zürich DE)

Background
Bioresorbable osteosynthesis materials, particularly those based on magnesium, are gaining increasing attention in hand surgery. This presentation documents our experience with the use of bioresorbable and allogeneic materials in the treatment of scaphoid fractures, scaphoid nonunions, and arthrodesis as alternatives to permanent metallic materials.
Methods
Eight acute scaphoid fractures and four scaphoid nonunions were treated with the magnesium-based bioresorbable compression screw MAGNEZIX®. Three or more (ongoing recruitment) patients were treated with the Shark Screw®, made from human donor bone. Objective outcomes were assessed through X-ray imaging and/or CT scans to evaluate bone healing. Clinical assessment was performed using the modified Mayo Wrist Score. Patient-reported outcomes were measured three times using the QuickDASH, PRWE, and EQ-5D-5L questionnaires.
Results
Bone healing was achieved in all eight patients with acute scaphoid fractures and in three of the four patients with scaphoid nonunions. All cases of arthrodesis healed without complications. The modified Mayo Wrist Score was 95 (SD 7.1) for fracture patients and 80 (SD 7.1) for nonunion patients during follow-up. The QuickDASH score was 3.9 (SD 5.8) for fracture patients and 19.3 (SD 10.6) for nonunion patients. Of the acute fracture patients, 87.5% (7/8) reported a full health state in follow-up (EQ-5D-5L). In contrast, nonunion patients experienced difficulties in 10 out of 19 dimensions on the EQ-5D-5L. The PRWE total score during follow-up was 3.9 (SD 7.9) for fractures and 19.7 (SD 32.4) for nonunions.
Conclusions
Magnesium-based and allogeneic bone materials resulted in excellent clinical outcomes for scaphoid fractures and good to moderate outcomes for scaphoid nonunions in the presented cases. Further studies are needed to explore the specific applicability of these materials for scaphoid nonunion treatment and to compare their overall performance with non-absorbable screws in larger cohorts.

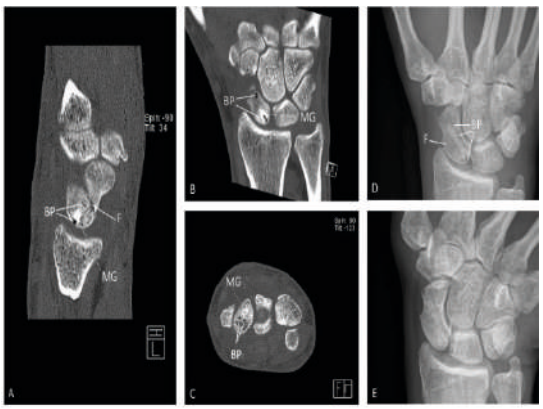
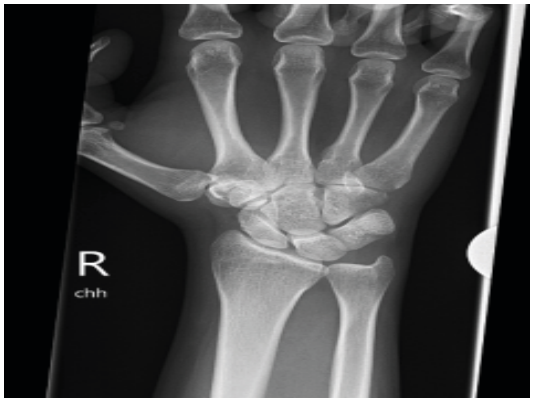


Figure.jpg

P14 – When the Capitate has a Nose; Case Report of a Rare Symptomatic Carpal Deformity

Daniel Walder[1], Tomas Sanchez[1] ([1]Kantonsspital Olten, Olten)

In a 26-year-old female patient with long-standing, load-dependent pain in the right, dominant wrist, a triangular prominence of the radial capitate was found on x ray on both wrists, which pushed into the STT joint and thus formed an additional joint surface to the trapezoid and scaphoid. There were no degenerative changes.
After a progression of pain during ergotherapy to strengthen the wrist stabilizers, a therapeutic injection into the capitotrapezoidal joint led to complete relief of symptoms after three weeks.
The findings we demonstrated here are not clearly described in the literature. It is most likely a fused os centrale carpi, an accessory ossicle that forms in the sixth week of gestation as a cartilaginous body with an ossification center and usually fuses with the distal scaphoid. Rarely, it may remain as a free ossicle or fuse with the trapezoid or capitate.
Infiltration was an effective therapy, while wrist arthroscopy could be considered as a possible further measure. Further studies are needed to clarify the pathogenesis and treatment of such rare cases.



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P15 – PREDICTION OF EMG SEVERITY AND CTS INSTRUMENT CHANGES AFTER OCTR USING MACHINE LEARNING MODEL

Stefano Lucchina[1], Atsuyuki Inui[2], Fumiaki Takase[3], Takako Kanatani[3] ([1]Surgical Department, Hand Unit EOC, Locarno's Regional Hospital, Locarno; [2]Department of Orthopaedic Surgery, Kobe University Graduate School of Medicine,, Kobe JP; [3]Department of Orthopaedic Surgery, Kobe Rosai Hospital, Kobe JP)

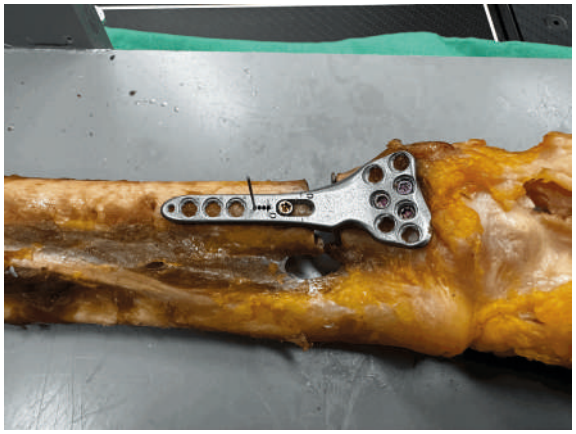
PURPOSE: The severity of carpal tunnel syndrome (CTS) is evaluated by electrophysiological examination as well as a patient-oriented questionnaire. We hypothesized that machine learning could predict postoperative electrophysiological severity as well as the scores of patient-oriented questionnaires. In this study, we developed machine learning models to predict postoperative changes in electrophysiological severity and changes in the Carpal Tunnel Syndrome Instrument (CTSI).
MATERIALS AND METHODS: Data from four hundred and twenty hands of individuals who had been diagnosed with CTS and undergone carpal tunnel release were used. The features used for the machine learning model were preoperative age, gender, distal motor latency (DML) value, sensory nerve conduction velocity (SCV) value, preoperative electrophysiological severity stage, CTSI-SS value, and CTSI-FS value. Logistic Regression (LR), ElesticNet (EN), Support Vector Machine (SVM), Random Forest (RF), and LightGBM (LGBM) were used as machine learning algorithms. A machine learning model was created to binary classify the electrophysiologic severity at one year postoperatively. In the second experiment, regression models were created to predict the change in CTSI-SS and CTSI-FS at one year postoperatively.
RESULTS: In the electrophysiological severity classification model, LGBM showed the highest score (AUC = 0.802). Preoperative DML, age, and preoperative electrophysiological severity were important factors for model prediction. RF model showed the best performance. In the regression model predicting the change in CTSI-SS or CTSI-FS (RMSE: 0.418, 0.333, respectively), preoperative age and CTSI-SS or CTSI-FS scores were important factors for model prediction.
CONCLUSIONS The machine learning model can predict postoperative electrophysiological severity and CTSI score with high accuracy.

P16 – Pronosupination varition regarding radioulnar variance, cadaveric study

Lucille Cosandier-Auberson[1], Emmanuel Piguet[1], Lionel Athlani[1], Jean-Yves Beaulieu[1], Tiago Guedes Almeida[1] ([1]HUG, Genève)

Introduction
Forearm pronosupination relies heavily on the integrity of the distal radioulnar joint (DRUJ). In non-operative management of distal radius fractures, metaphyseal collapse may lead to radial shortening and altered ulnar variance, potentially impairing forearm rotation. Previous studies have shown the impact of sagittal deformities on pronosupination. This cadaveric study aimed to quantify the impact of ulnar variance on pronosupination.
Material and methods
Eight fresh-frozen human forearms (4 left, 4 right) were examined. Each radius was progressively shortened in 1 mm increments up to 4mm, using a dedicated distal radius plate. At each step, pronation and supination ranges were measured using a goniometer on a particular measurement table. A 3D fluoroscopic scan (C-arm) assessed DRUJ alignment and quantified distal radioulnar variance at each stage.
Results
Preliminary results show a progressive loss of pronation, reaching 36% of loss at 4mm of radial shortening (50° at 4mm vs 78° at initial stage). Supination remain non affected. 3D imaging confirmed the progressive elevation of the ulna, and the absence of axial DRUJ subluxation.

Discussion
This study demonstrates that moderate radial shortening can compromise pronosupination, even without angular deformity. Distal radioulnar variance thus emerges as a key parameter to monitor when managing distal radius fractures conservatively, not only considering the risk of ulnocarpal impigement but also in reduction of pronation, imparing functional results.



Radial shortening plate

P20 – Neck over-sizing in Touch trapeziometacarpal arthroplasty: a cause of unresolved postoperative pain?

Damien Coppey[1], Nicolas Balagué[2], Lina Deghayli[3] ([1]réseau santé valais, Orsières; [2]Réseau Santé Valais, Sierre; [3]Réseau Santé Valais, 3960 Sierre)

Introduction:
Rhizarthrosis is a common pathology affecting up to 10% of middle-aged women. This condition is a major cause of loss of function and pain in older populations. When conservative treatment fails, carpo-metacarpal arthroplasty is a validated treatment.
In this paper, we present two cases of persistent pain after arthroplasty with a Touch Kerri Medical prosthesis, completely relieved by replacing a 15° angled neck size M with a straight neck size S, combined with an opening of the first extensor compartment.
Our hypothesis is that inserting a neck that is too long may be a cause of dissatisfaction and pain.

Material and methods:
We present the cases of two patients, aged 54 and 58, who had both benefited from Touch prosthesis arthroplasty with a 15° angled neck, complicated by postoperative pain which limited their return to work and severely disabled them in their activities of daily living.
The first case benefited from a revision 5 months later, under WALANT, during which the neck was changed and the first extensor compartment was sectioned longitudinally.
The second case benefited from a revision at 16 months post operatively, after multidisciplinary treatment had considerably reduced the pain associated with a complex regional pain syndrome, without however enabling a full return to work. The neck was also changed and the first extensor compartment opened.

Results:
In both cases, patients were able to resume their full activity, including work at 6 weeks postoperatively, after being immobilized for two weeks in an antebrachial splint extended to the metacarpophalangeal joint, followed by occupational therapy.
In the first patient EVA passed from 4/10 to 0/10, Kapandji from 9/10 to 10/10 and key pinch from 2.5 to 10 kg. In the second patient EVA passed from 6/10 to 0/10, Kapandji stayed at 9/10 and key pinch passed from 0 to 3.5 kg.

Conclusion:
Although latest-generation prostheses, such as the Touch, offer excellent functional results, these cases illustrate the need for critical intraoperative assessment of length/tension ratio to avoid early failure.
Down-sizing the neck from M to S restores optimal tension balance, while preserving the intrinsic stability of the dual-mobility prosthesis. Stability testing of the new neck under WALANT is useful when possible.
Systematic opening of the first extensor compartment may also play a role in improving results, deceasing tension on tendons.

P21 – Toxic Reaction to Blackthorn Injury: A Diagnostic Challenge

Melinda Schlink[1], Barbara Nüesch[1] ([1]Spital Herisau, Herisau)

Introduction:
Thorn injuries, commonly causing acute or chronic inflammation like septic or aseptic synovitis and pyogenic or non-pyogenic arthritis, are frequent during springtime. However, injuries caused by blackthorn (Prunus spinosa) and their potential toxic effects in the human body remain unexplored. Blackthorn plants contain bioactive molecules like phytoanticipins and phytoalexins, which protect the plant from pathogens after injury. We hypothesize that blackthorn injuries can cause a toxic inflammatory reaction, possibly causing pyogenic synovitis and arthritis, even without detectable microbial growth. We report a case of a young adult with a toxic reaction to a blackthorn injury, emphasizing its rarity, diagnostic and therapeutic challenges, with limited documentation in the literature.

Case report:
We present the case of a 26-year-old man who developed acute pyogenic arthritis in the metacarpophalangeal (MP) III joint following a blackthorn injury. Surgical intervention included extraction of the retained intra-articular fragment and joint irrigation. Intraoperative cultures showed no bacterial growth. Despite a three-week course of antibiotics, the patient did not achieve complete symptom resolution. Two months post-injury, he had persistent aseptic swelling and functional impairment, responding poorly to local and oral steroids. At this point, a toxic reaction to the blackthorn was suspected.

Six months post-injury, an MRI suggested metacarpal osteomyelitis with consecutive septic arthritis of the MP joint. However, intraoperative cultures and clinical findings of the revision surgery were negative, including tests for atypical pathogens. The patient received another local steroid injection, allowing him to resume daily activities, and at one-year follow-up, he had almost full range of motion and pain-free hand function in the MP III joint.

Conclusion:
Long-lasting complaints after a blackthorn injury that don't resolve with surgery, antibiotics, and only weak improvement to steroids present significant diagnostic and therapeutic challenges. This case highlights the importance of considering a toxic reaction to blackthorn as a potential cause in similar presentations. Further research is necessary to understand the molecular mechanisms and improve effective management strategies. Clinicians should remain vigilant in cases of thorn injuries, particularly when symptoms persist without identifiable pathogens, and consider non-infectious causes.

P22 – The Obturator Nerve Chronicles: From Plegia back to Badminton

Julian Nachtsheim[1], Silvan Pasquinelli[2], Guido Beldi[2], Dietmar Bignion[2], Esther Vögelin[2] ([1]Inselspital Bern, Bern; [2]Inselspital, Bern)

Introduction:
Obturator nerve (ON) injury is a rare complication after pelvic or abdominal surgery, such as hernia repair. Mechanisms of injury include nerve traction, transection, electrocoagulation, or compression due to scars or surgical implants such as mesh.
Patients typically present with pain, adductor weakness, gait disturbances and sensory deficits. This causes a complex clinical picture and permanent neurological deficit that may be mistaken. Conservative treatment can lead to gradual symptom resolution.
Surgical intervention may be necessary. Literature reports successful outcomes after primary nerve repair, autologous nerve grafts with sural or femoral nerve branches, or artificial nerve conduits.
Materials & Methods:
We present a patient with right ON neuropathy after bilateral endoscopic obturator hernia repair. Immediately post-surgery, he experienced sensory deficits, paresthesia, and significant weakness in right leg adduction, without improvement over 6 months. He reported walking uncertainty and the impossibility of practicing Badminton.
EMG confirmed adductor muscle group denervation. MR neurography revealed neuropathy of the ON and denervation oedema of the majority of adductor muscles.
We explored the ON over a ilioinguinal approach. Intraoperatively, the mesh was found to be adherent to the ON. Endoscopic assisted neurolysis and partial mesh resection was performed. Furthermore, using an additional distal incision, an end-to-side nerve transfer from one of the sartorius muscle motor branches (femoral nerve) to the obturator nerve was carried out.
Results:
Despite the need of hematoma revision on day 7 after surgery, result after 3 months was very satisfactory . He regained adductor muscle activation and strength, shows a physiologic gait pattern and resumed badminton and fitness training. He returned to work as a metal worker and does not show neuropathic pain.
Discussion & Conclusion:
ON injury is an infrequent but potentially severe complication in pelvic surgery. When conservative therapy fails, operative treatment with neurolysis in comonation with a nerve transfer, for using one of the femoral nerve motor branches, may be a feasible treatment option. We present a patient with promising early result due to neurolysis. The effect of the performed nerve transfer remains to be seen.

P23 – Saving the Hand: The Impact of Early Diagnosis and Therapy in Compartment Syndrome

Ana Lizandra Miguel[1], Dr. med. Giuseppe Broccoli[1], Dr. med. Abdul R. Jandali[1] ([1]Kantonsspital Winterthur, Winterthur)

Hypothesis: Hand compartment syndrome is a rare but serious surgical emergency where delayed treatment may result in irreversible neuromuscular damage and lasting functional loss. Unlike lower limb presentations, it lacks clear diagnostic criteria and may develop following trauma, burns, infection, or prolonged compression. Literature suggests that tissue damage can occur within six hours, highlighting the need for prompt recognition. Signs include severe pain disproportionate to findings, tense swelling, altered sensation, motor weakness, and reduced perfusion. This case explores the clinical presentation, diagnosis, and management of acute hand compartment syndrome, emphasizing early decompression and structured rehabilitation as keys to functional recovery.
Materials and Methods: We describe a 64-year-old man, previously healthy, admitted after an unwitnessed fall and subsequent pulmonary sepsis. He presented with right hand swelling, sensory deficits, paresthesia, and finger paresis. The diagnosis of hand compartment syndrome was established clinically and confirmed by ultrasound. Clinical parameters included pain (VAS), swelling (Figure-of-Eight), sensation (Semmes-Weinstein Monofilament), motor function (Range of Motion (ROM), Jamar grip strength), and functional capacity (DASH score). The patient subsequently underwent an emergent fasciotomy followed by intensive hand therapy.
Results: Three months later, VAS pain decreased from 3 to 0, swelling reduced from 54 to 47 cm, partial sensory recovery was observed, and grip strength improved from 0 to 10 kg (left hand remained at 30) and also die ROM. The DASH score improved from 92 to 63, indicating substantial recovery. Further progress continued in the following weeks.
Conclusions: Hand compartment syndrome is a surgical emergency requiring prompt recognition and decompression to avoid irreversible neurovascular and

muscular damage. According to current evidence, early fasciotomy combined with a structured rehabilitation program is crucial for optimal outcomes. This case underscores the importance of coordinated, multidisciplinary care in maximizing functional recovery and minimizing long-term disability.

1_.png

2__.png

3__.png

Poster SGHR
Posters SSRM

P60 – Wenn Worte positiv wirken - Hypnotische Kommunikation in der Ergotherapie bei Kindern

Miriam von Gunten[1], Annika Kerrison[1] ([1]Inselspital Bern, Bern)

Hintergrund
Hypnotische Kommunikation nutzt gezielte Sprachmuster und Suggestionen, um therapeutische Prozesse positiv zu beeinflussen. In der Ergotherapie mit Kindern nach Handverletzungen oder -operationen kann sie helfen, Ängste und Stress zu reduzieren, die Selbstwirksamkeit zu stärken, die Kooperation zu fördern und so die Therapieeffektivität zu verbessern. Entspannte, kooperative Therapiesituationen wirken sich langfristig günstig auf den Therapieerfolg aus.
Ziel
Dieser Beitrag zeigt auf, wie hypnotische Sprachmuster und -techniken gezielt in der pädiatrischen Ergotherapie bei Kindern und Jugendlichen mit Handverletzungen oder nach Handoperationen eingesetzt werden können.
Methodik
Es werden zentrale Kommunikationsstrategien wie Suggestionen und Metaphern vorgestellt und anhand praxisnaher Beispiele erläutert. Zudem wird aufgezeigt, wie dysfunktionale Sprachmuster durch positiv formulierte, entwicklungsfördernde Alternativen ersetzt werden können. Darüber hinaus werden weitere Aspekte der hypnotischen Kommunikation vorgestellt, die eine unterstützende therapeutische Haltung fördern.
Schlussfolgerung
Die hypnotische Kommunikation stellt eine wertvolle Ergänzung in der therapeutischen Arbeit mit Kindern und Jugendlichen mit Handverletzungen oder nach Handoperationen dar. Hypnotische Kommunikation ist eine sichere, nebenwirkungsfreie Methode, die sich gut in bestehende Therapieansätze integrieren lässt. Weitere Forschung ist notwendig, um die langfristige Wirksamkeit und optimale Anwendungsstrategien zu evaluieren.

P60 –Quand les mots ont un effet positif – communication hypnotique en ergothérapie chez les enfants

Miriam von Gunten[1], Annika Kerrison[1] ([1] Hôpital de l'Île, Berne)

Contexte
La communication hypnotique utilise des suggestions et des schémas linguistiques ciblés afin d'influencer positivement le processus thérapeutique. Dans le cadre de l'ergothérapie avec des enfants après une blessure à la main ou une chirurgie de la main, cela peut aider à réduire les peurs et le stress, à renforcer l'auto-efficacité, à encourager la coopération et ainsi à améliorer l'efficacité de la thérapie. Des situations

thérapeutiques détendues et coopératives ont un effet bénéfique à long terme sur le succès du traitement.
Objectif
Cette contribution montre comment les schémas et techniques linguistiques hypnotiques peuvent être utilisés de manière ciblée en ergothérapie pédiatrique chez les enfants et les adolescents souffrant d'une blessure à la main ou après une chirurgie de la main.
Méthodologie
Des stratégies de communication centrales telles que les suggestions et les métaphores sont présentées et expliquées à l'aide d'exemples pratiques. La manière de remplacer les schémas linguistiques dysfonctionnels par des alternatives formulées de manière positive et favorisant le développement est également montrée. D'autres aspects de la communication hypnotique favorisant une attitude thérapeutique soutenante sont aussi proposés.
Conclusion
La communication hypnotique constitue un complément précieux dans le travail thérapeutique avec les enfants et les adolescents souffrant d'une blessure à la main ou après une chirurgie de la main. La communication hypnotique est une méthode sûre, et sans effets secondaires, qui s'intègre bien dans les approches thérapeutiques existantes. Des recherches supplémentaires sont nécessaires afin d'évaluer l'efficacité à long terme et les stratégies d'application optimales.

P61 – 3D-gedruckte Handschuhorthesen für Kinder mit Epidermolysis bullosa – Entwicklung & erste Ergebnisse

Miriam von Gunten[1], Petra Folly[1], Antonia Reimer-Taschenbrecker[1] ([1]Inselspital Bern, Bern)

Einleitung
Kinder mit schwerer rezessiver dystropher Epidermolysis bullosa (RDEB) leiden unter fortschreitenden Gelenkkontrakturen und Verwachsungen der Finger. Dies führt zu erheblichen Einschränkungen der Handfunktion. Zur Prävention werden statische Schienen eingesetzt, die jedoch häufig nicht akzeptiert werden oder zu weiteren Hautverletzungen führen. Ein alternatives Konzept wurde mit Extensionshandschuhen aus Stoff getestet, erwies sich jedoch als ungeeignet. Die gewonnenen Erkenntnisse flossen in die Entwicklung einer neuen Lösung mit 3D-gedruckten Handschuhorthesen ein.
Abgeschlossenes Projekt 2020-2023
Über drei Jahre wurden Prototypen von Extensionshandschuhen aus Stoff entwickelt und bei zwei Kindern mit RDEB erprobt. Die Evaluierung zeigte, dass der Tragekomfort und die Handhabung nicht den Anforderungen entsprachen und Grenzen in der Umsetzung durch die Orthopädietechnik erkannt wurden. Wichtige Erkenntnisse zu Materialwahl, Anpassung und Akzeptanz wurden gewonnen, führten jedoch zur Schlussfolgerung, dass eine andere Technologie erforderlich ist.
Neue Projektidee
Basierend auf den Ergebnissen des ersten Projekts werden nun 3D-gedruckte Handschuhorthesen mit Silikonbeschichtung entwickelt und getestet. Diese sollen eine statisch-dynamische Extension ermöglichen und einen höheren Tragekomfort bieten.
Methodik
Fünf Kinder mit RDEB erhalten jährlich über drei Jahre zwei individuell angepasste 3D-Handschuhorthesen. Die Anpassung erfolgt durch Abdrucknehmen und Scannen in der Ergotherapie und Orthopädietechnik. Die Evaluation umfasst Tragekomfort, Akzeptanz, Tragedauer sowie objektive Messungen der Daumenspreizung und Handfunktion.
Erste Ergebnisse und Ausblick
Ein erster Prototyp zeigte eine verbesserte Funktionalität im Vergleich zu herkömmlichen Schienen. Die Kinder berichteten über höheren Komfort und längere Tragedauer. Das Projekt soll weitere Erkenntnisse zur praktischen Anwendung liefern. Die 3D-gedruckten Handschuhorthesen könnten eine vielversprechende Option zur Verbesserung der Versorgung von Kindern mit RDEB darstellen.

P61 –Orthèses de main imprimées en 3D pour les enfants atteints d'épidermolyse bulleuse – développement et premiers résultats

Miriam von Gunten[1], Petra Folly[1], Antonia Reimer-Taschenbrecker[1] ([1] Hôpital de l'Île, Berne)

Introduction
Les enfants atteints d'épidermolyse bulleuse dystrophique récessive (EBDR) sévère souffrent de contractures articulaires progressives et d'adhérences au niveau des doigts. Cela entraîne des restrictions considérables de la fonction de la main. Des attelles statiques sont mises en place à titre préventif, mais ces dernières sont souvent mal acceptées ou entraînent d'autres lésions cutanées. Une alternative a été testée avec des gants d'extension en tissu. Cependant, elle s'est avérée inadaptée. Les connaissances acquises ont été intégrées dans le développement d'une nouvelle solution avec des orthèses de main imprimées en 3D.
Projet achevé 2020-2023
Pendant trois ans, des prototypes de gants d'extension en tissu ont été développés et testés par deux enfants atteints d'EBDR. L'évaluation a montré que le confort de port et la maniabilité ne répondaient pas aux exigences et que la technique orthopédique présentait des limites dans la mise en œuvre. Des connaissances importantes ont été gagnées concernant le choix des matériaux, l'ajustement et l'acceptation, mais elles ont conduit à la conclusion qu'une autre technologie était nécessaire.
Nouvelle idée de projet
En se basant sur les résultats du premier projet, des orthèses de main imprimées en 3D avec revêtement en silicone sont actuellement développées et testées. Celles-ci doivent permettre une extension statique-dynamique et offrir un confort de port accru.
Méthodologie
Cinq enfants atteints d'EBDR reçoivent chaque année, pendant trois ans, deux orthèses de main 3D adaptées individuellement. L'ajustement est fait à l'aide d'empreintes et de scans réalisés en ergothérapie et en technique orthopédique. L'évaluation porte sur le

confort de port, l'acceptation, la durée de port ainsi que sur des mesures objectives de l'écartement du pouce et de la fonction de la main.

Premiers résultats et perspectives

Un premier prototype a montré une fonctionnalité améliorée en comparaison aux attelles traditionnelles. Les enfants ont rapporté un port d'un meilleur confort et d'une durée plus longue. Le projet devrait fournir des informations supplémentaires sur l'application pratique. Les orthèses de main imprimées en 3D pourraient constituer une option prometteuse pour améliorer les soins prodigués aux enfants atteints d'EBDR.

Abb_1 Extensionshandschuh.png

Abb_2 Prototyp 3D-gedruckte Handschuhorthese.png

Abb_3 Prototyp 3D-gedruckte Handschuhorthese für Kind mit EB.jpg