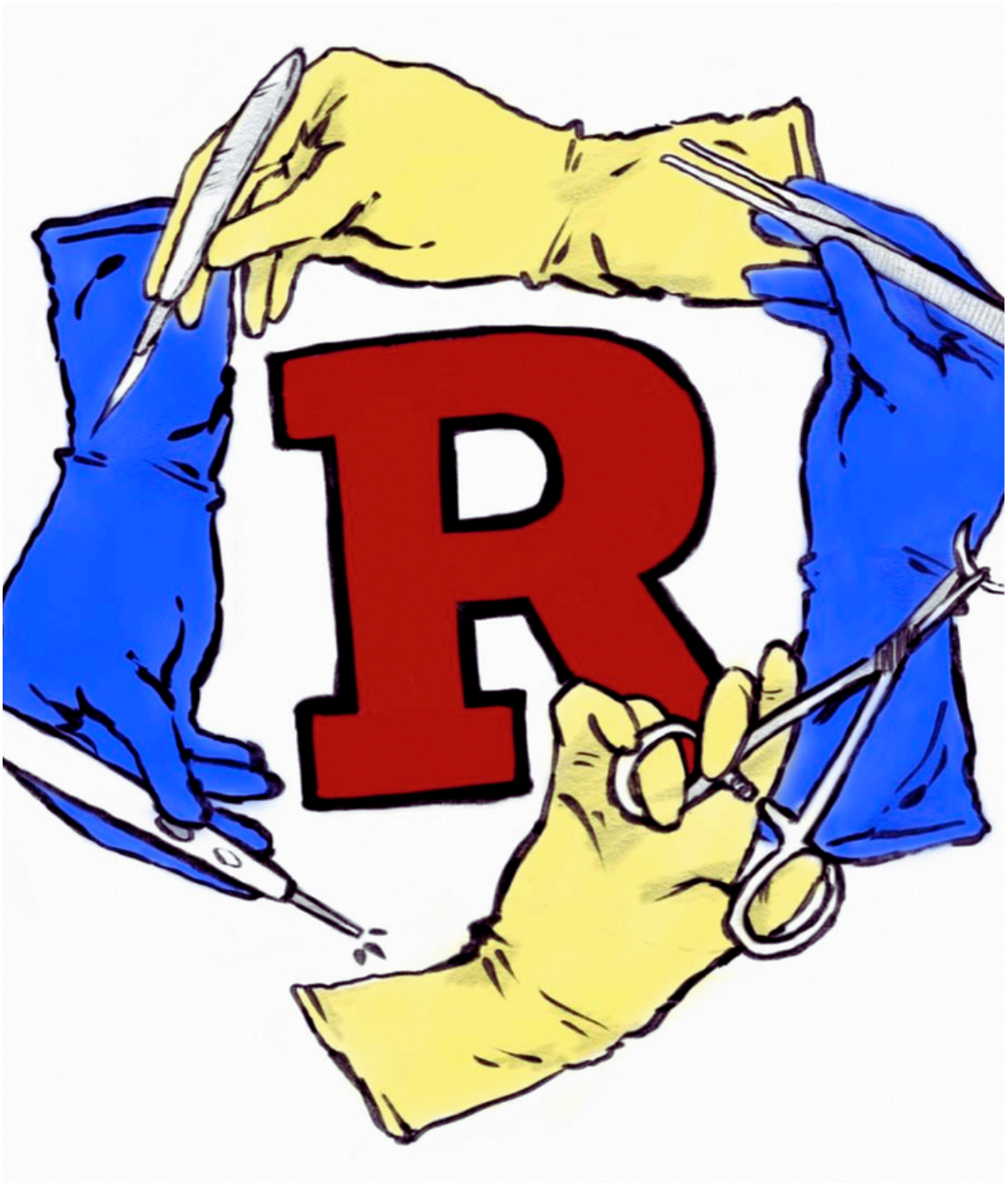
HAND AND UPPER EXTREMITY YEAR-IN-REVIEW 2024



RUTGERS HEALTH
Robert Wood Johnson Medical School
Department of Orthopaedic Surgery

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OVERVIEW

The 2024 Hand and Upper Extremity Yearbook continues our tradition of excellence, building upon the successes of 2023 with a renewed commitment to education, research, and clinical innovation. Over the past year, our team has further refined and expanded initiatives that foster professional growth, collaboration, and the advancement of hand surgery as a discipline.

In addition to our educational efforts, this year has been particularly productive in research, with several studies published, accepted, submitted, and others currently in progress. These accomplishments highlight the strong collaboration among our faculty, residents, and students, driving advancements in clinical knowledge and improving patient care.

Notable highlights include structured educational programs such as the hand round table conferences, journal clubs, and resident education days. These programs have been thoughtfully designed to bridge foundational learning with cutting-edge practices, engaging medical students, residents, and attending surgeons alike. Our dedication to research remains steadfast, with numerous impactful studies addressing clinical decision-making, innovative surgical techniques, and the integration of artificial intelligence in medical practice.

This yearbook is a testament to the collective efforts of our team, showcasing achievements that reflect a deep commitment to advancing hand and upper extremity care while cultivating a vibrant academic environment.

CLINICAL CARE

The Hand Service at Rutgers Robert Wood Johnson Medical School is dedicated to providing comprehensive clinical care while fostering the development of surgical skills for residents, regardless of their eventual field of specialization. Drs. Leddy, Levine and Monica cover hand call at Robert Wood Johnson University Hospital, ensuring expert care for urgent and complex cases. Surgical procedures are performed at a range of facilities, including Robert Wood Johnson University Hospital in New Brunswick, St. Peter's University Hospital, Robert Wood Johnson University Hospital at Somerset, Center for Ambulatory Resources (CARES), the University Center for Ambulatory Surgery (UCAS), and the Surgical Institute of Neptune. In 2024, we further expanded our reach with the addition of Old Bridge Medical Center, enhancing access to top-tier upper extremity surgery services.

Dr. Leddy and Dr. Monica lead the majority of the clinical rotation, devoting extensive time and energy to teaching and mentoring residents. Their hands-on approach and commitment to education provide residents with invaluable exposure to surgical techniques, patient care strategies, and clinical decision-making. While most residents may ultimately pursue careers outside of hand surgery, the foundational principles of hand surgery and patient care they acquire during this rotation are applicable across all orthopaedic subspecialties.

The breadth of clinical settings and the dedication of our faculty ensure a well-rounded educational experience. By integrating rigorous academic standards with practical, patient-centered care, the Hand Service prepares residents to excel as versatile and skilled physicians in their chosen fields.

THE HAND TEAM

HESHAM ABDELFATTAH, M.D.

Medical School: Texas Tech University Health Science Center School of Medicine
Residency: West Virginia University School of Medicine
Fellowship: Philadelphia Hand to Shoulder Center at Thomas Jefferson University Hospital and University of Pennsylvania

DEIDRE BIELICKA, M.D.

Medical School: Rutgers New Jersey Medical School
Residency: Rutgers Robert Wood Johnson Medical School
Fellowship: University of Pittsburgh Medical Center and Shriners Hospital for Children in Northern California

CHRISTOPHER DOUMAS, M.D.

Medical School: UMDNJ-New Jersey Medical School
Residency: University of Miami, Jackson Memorial Hospital
Fellowship: University of Pennsylvania

THE HAND TEAM

BRIAN M. KATT, M.D.

Medical School: SUNY Health Science Center at Syracuse College of Medicine
Residency: UMDNJ-Robert Wood Johnson Medical School
Fellowship: Duke University

DAVID KIRSCHENBAUM, M.D.

Medical School: Rutgers Medical School
Residency: UMDNJ-Robert Wood Johnson Medical School
Fellowship: Jefferson Hand Fellowship

LEWIS J. LEVINE, M.D.

Medical School: UMDNJ- Robert Wood Johnson Medical School
Residency: UMDNJ- Robert Wood Johnson Medical School
Fellowship: NYU-Hospital for Joint Diseases Orthopaedic Institute

THE HAND TEAM

TIMOTHY P. LEDDY, M.D.

Medical School: Jefferson Medical College
Residency: UMDNJ-Robert Wood Johnson Medical School
Fellowship: Mayo Clinic

MICHAEL T. LU, M.D.

Medical School: Washington University School of Medicine
Residency: Rutgers New Jersey Medical School
Fellowship: University of Pennsylvania

JAMES T. MONICA, M.D.

Medical School: Columbia University College of Physicians and Surgeons
Residency: Harvard Combined Orthopaedic Residency Program
Fellowship: Massachusetts General Hospital

OUR RESIDENTS

PGY5 AND CHIEFS

JOMAR ARYEE, M.D.

DANIEL HADDAD, M.D.

JEREMY SILVER, M.D.

PGY4

MATTHEW DIEHL, M.D.

RYAN SCHEER, M.D.

JASON YANG, M.D.

PGY3

JARED SAIN, M.D.

MICHAEL SIMON, M.D.

HANBIN WANG, JR., M.D.

OUR RESIDENTS

PGY2

DANE PIZZO, M.D.

SRIKARAN (KARAN) KALAHASTI, M.D.

PAUL ROMEO, M.D.

PGY1

MATTHEW CHUNG, M.D.

PETER FILTES, M.D.

HANNAH LEE, M.D.

OUR RESIDENTS

RESIDENT ACHIEVEMENTS AND FELLOWSHIPS

We are proud to celebrate the accomplishments of our residents who have chosen to pursue careers in hand surgery, reflecting their dedication to the specialty and their hard work during their training.

Todd Alter, a superb chief resident, began his hand fellowship at the University of Florida in the summer of 2024, where he is continuing to refine his skills and knowledge in the field. Anna Green, also an outstanding chief resident, started her hand fellowship in the summer of 2024, joining the prestigious program at the University of Pittsburgh. Additionally, Dan Haddad, currently serving as a chief resident, will join the University of Pittsburgh for his hand fellowship starting in the summer of 2025.

It is incredibly exciting to see these talented individuals continue their journey in hand surgery, and we are immensely proud of their achievements. Their commitment to excellence will undoubtedly make a lasting impact on the field.

ANNA GREEN, M.D.

TODD ALTER, M.D.

EDUCATION

RESIDENTS ON SERVICE

Jeremy Silver, PGY4	January, February
Hanbin Wang, PGY2	January, February
Jomar Aryee, PGY4	March
Jared Sain, PGY2	March, April, May, June
Dan Haddad, PGY4	May, June
Ryan Scheer, PGY4	July, August, September
Karan Kalahasti, PGY2	July, August, September, October
Jason Yang, PGY4	November, December
Dane Pizzo, PGY2	November, December

Grand Rounds:

Grand Rounds this year provided an exceptional platform for department-wide education, featuring three talks specifically focused on hand and upper extremity surgery. In January, Todd Alter (PGY5) presented on Thumb CMC Arthritis, offering a comprehensive review of pathophysiology, treatment options, and surgical techniques. In April, Dan Haddad (PGY4) explored Orthobiologics in the Hand, discussing emerging therapies and their applications in enhancing healing and functional outcomes. In May, we welcomed Dr. Nate Hoekzema as a visiting professor, who delivered an engaging lecture on elbow trauma, highlighting complex cases and innovative approaches to management. These sessions were invaluable opportunities to deepen knowledge, foster discussion, and strengthen the educational mission of the department.

January – Todd Alter PGY5 – Thumb CMC Arthritis
April – Dan Haddad PGY4 – Orthobiologics in the Hand
May – Dr. Nate Hoekzema – Visiting Professor – elbow trauma

EDUCATION

Fracture Conference:

A cornerstone of the educational experience is the weekly Fracture Conference, held on Mondays at 7:30 a.m. During these sessions, residents present cases from the prior week, many of which involve upper extremity injuries. Our hand faculty members actively engage residents with thought-provoking questions and foster excellent discussions, creating a dynamic environment for learning and critical thinking. To enhance educational value, these conferences are now recorded, allowing for later review of interesting concepts and facilitating stage-appropriate learning for medical students.

Resident Education Days:

March – Distal radius fractures and carpal injuries
Faculty: Dr. Katt, Dr. Kirschenbaum and Dr. Monica

August – Flexor and Extensor Tendon Injuries
Faculty: Dr. Kirschenbaum and Dr. Bielickaa

December – Upper Extremity Pediatric Trauma
Faculty: Dr. Bielicka, Dr. Lopyan and Dr. Herrero

Anatomy:

August – Hand and Forearm
Faculty: Dr. Leddy
September- Humerus and Elbow
Faculty: Dr. Sagebien

EDUCATION

Journal Club:

The Journal Club sessions provided an invaluable platform for discussing recent papers, revisiting historical landmark studies, and fostering a collaborative environment between residents and attendings. These meetings encouraged critical analysis of the literature, enriching both clinical practice and academic growth. These gatherings created a shared space for thoughtful dialogue and the exchange of ideas among all participants.

February - Old Man Rafferty's
Apri - Zoom
June - Zoom
August - The Frog and the Peach
October - Zoom

Hand Resident Reading Curriculum:

This year, we introduced a structured 16-week Hand Resident Reading Curriculum designed to enhance learning through targeted, high-yield articles tailored to the appropriate level of training. Each week, residents review three to four carefully selected articles focusing on essential topics in hand surgery. To reinforce understanding, a quiz accompanies each article, assessing key concepts and promoting active engagement with the material. This innovative approach ensures consistent learning and measurable progress throughout the rotation. We are proud to highlight this addition as a significant enhancement to our educational program in our year-end review.

EDUCATION

Hand Round Table:

The 2024 hand round table conferences served as a collaborative learning platform where residents engaged in meaningful academic discourse. This conference occurred every Friday at 7:10 AM over Zoom, providing a consistent and accessible environment for learning and professional development. Each session followed a structured format designed to promote progressive learning:

-Medical students rotating on the service participated by providing a brief overview of the normal anatomy and physiology related to the topic.
-Junior Residents began by presenting concise summaries of the assigned topics.
-Senior Residents contributed by asking insightful questions, shaped by their pre-conference reading, which deepened the discussion and clarified clinical and surgical nuances.
-Attending Surgeons provided expert perspectives, sharing practical experiences and advanced insights to round out the discussion.

Topics included a wide range of hand and upper extremity conditions such as trigger finger, De Quervain's tenosynovitis, distal radius fractures, thumb CMC arthritis, Dupuytren's disease, and innovative procedures like WALANT. Special 'Indications Conferences' centered on the decision-making process for surgical and non-surgical treatments, using recent cases encountered by residents during their rotation on the service.

EDUCATION

Hand Round Table:

January	Trigger Finger, De Quervain's; Indications Conference; Hand, forearm, arm compartment syndrome; Mallet, Jersey Finger
February	Ganglion cysts, hand/forearm tumors; Distal Radius Fractures; Thumb CMC Arthritis; Indications Conference
March	Rheumatoid disease; Indications Conference; Humeral shaft nonunion, radial nerve palsies; Proximal humerus fractures
April	Humeral shaft fractures; Ganglions; Indications Conference
May	Scaphoid nonunions; Carpal tunnel syndrome; Indications Conference; Cubital Tunnel Syndrome
June	Dupuytren's Disease; Trigger Finger, De Quervain's; Indications Conference
July	Boutonniere, swan neck deformities; Distal Radius Fractures; Indications Conference; High pressure injection injuries
August	Thumb CMC Arthritis; Lateral Epicondylitis; Indications Conference; Dupuytren's Disease; Proximal Humerus Fractures
September	Distal humerus Fractures; WALANT, office-based procedures; Indications Conference
October	Tendon, nerve transfer principles; Indications Conference; Frostbite, burns; Shoulder Bursitis, Rotator Cuff Tears
November	Cuff tear arthritis; Thumb CMC Arthritis; Carpal tunnel syndrome
December	Flexor tendon injuries; Trigger Finger, De Quervain's

The residents' preparation for these conferences through pre-reading facilitated meaningful contributions and thoughtful questions, making the process a valuable learning experience and fostering their growth as future surgeons. Their extraordinary efforts in preparing for each conference, asking pertinent questions, and facilitating open discussions created a robust academic atmosphere. This collaborative format ensured that medical students, residents, and attending surgeons all benefited from the shared insights and diverse perspectives, making the hand round table series an invaluable component of the academic year.

EDUCATION

Medical Student Education:

In addition to advancing resident education, we prioritized training medical students at multiple levels. In collaboration with the Orthopedic Surgery Interest Group (OSIG), our faculty provided hands-on teaching to medical students shadowing in the clinic and operating room during their one-day visits. Faculty members were also actively involved in the Summer Immersion Week, introducing early learners to key concepts in hand surgery. In addition, several M3 students interested in pursuing orthopedic surgery spend time on the service with our hand and upper extremity physicians.

For M4 students, the hand service served as an invaluable setting for their acting internships. These students spent an average of two weeks immersed in the hand and upper extremity service, gaining first-hand experience managing patients and simulating the responsibilities of an intern. Visiting M4 students from outside institutions also participated in these rotations, further enriching the educational environment and providing them with exposure to the clinical and operative aspects of hand surgery here at Rutgers Robert Wood Johnson Medical School. This comprehensive approach highlights our dedication to fostering education and mentorship across all levels of training, creating a dynamic and inclusive learning environment for residents and medical students alike.

RESEARCH

Hand and upper extremity physicians made significant strides in research throughout 2024, focusing on clinical decision-making, long-term treatment outcomes, rare complications, and the integration of technology. These studies highlight a dedication to advancing care and expanding knowledge in the field. Below are key contributions from our studies that were published in 2024:

ChatGPT's Performance on Hand Surgery Self-Assessment Exams. A study evaluated ChatGPT 3.5's ability to tackle hand surgery self-assessment exams. Results revealed the AI performed better on text-based questions (39.2%) than image-based questions (28.7%) but did not achieve passing scores. This study underscored the limitations of current AI tools in specialized medical knowledge and emphasized the importance of human expertise in hand and upper extremity surgery.

Long-Term Efficacy of Corticosteroid Injection for Carpal Tunnel Syndrome. A systematic review assessed the long-term outcomes of corticosteroid injections (CIs) for carpal tunnel syndrome. Findings showed that 41.6% of patients ultimately required surgery, with substantial variability in symptom relief over time. The study highlighted the need for high-quality research to better define the role of CIs in managing carpal tunnel syndrome and guiding patient expectations.

Variability in the Management of Displaced Distal Radius Fractures. This study explored variability in the treatment of well-reduced, displaced distal radius fractures. Factors such as patient age, activity level, surgeon experience, and radiographic instability significantly influenced the choice between surgical and nonsurgical approaches. The findings called for updates to clinical guidelines to address gaps, particularly in prereduction instability, and to standardize care for distal radius fractures.

RESEARCH

Nonoperative Treatment for Comminuted Distal Humerus Fractures in the Elderly. Physicians reviewed the outcomes of nonoperative management for comminuted distal humerus fractures in elderly patients. Using early motion protocols, patients achieved excellent functional outcomes, experienced minimal pain, and reported high satisfaction levels. This research supports nonoperative treatment as a viable option for certain low-demand patients with complex fractures not amenable to fixation.

Patient Expectations and Outcomes After Distal Radius Fractures. A prospective study examined how pretreatment expectations influenced outcomes in patients with distal radius fractures. Results showed that expectations often exceeded actual outcomes, but patients consistently demonstrated functional improvements across all age groups and treatment methods. This study emphasized the importance of managing expectations to improve satisfaction and recovery experiences.

Early Formation of a Tenosynovial Retinacular Cyst After A1 Pulley Release. A case report highlighted the rare occurrence of a tenosynovial retinacular cyst following an A1 pulley release for trigger finger. The cyst was successfully treated with surgical excision, demonstrating effective management of an unusual complication.

Postoperative Splinting and Outcomes After Digital Mucous Cyst Excision. Physicians conducted a retrospective review on the impact of postoperative splinting on infection rates and antibiotic use after digital mucous cyst excision. While splinted patients had fewer infections and received antibiotics less frequently, these findings were not statistically significant. The study emphasized the importance of refining postoperative protocols to ensure optimal care while minimizing unnecessary antibiotic use.

RESEARCH

Capitate Fracture Following Capitolunate Fusion. A case report documented a rare complication of capitate fracture following capitolunate fusion for scapholunate advanced collapse. Revision surgery with bone grafting and screw fixation successfully resolved the issue. The study suggested modifying staple placement techniques to reduce stress and prevent similar complications, providing a practical takeaway for hand and upper extremity surgeons.

Role of External Fixation in Distal Radius Fractures. This review emphasized the importance of external fixation (EF) in cases where internal fixation (IF) is contraindicated, such as patients with soft tissue compromise, polytrauma, or medical instability. EF was shown to be a critical skill for managing complex distal radius fractures, reinforcing the value of proficiency in EF techniques for upper extremity surgeons.

Neurovascular Complications Following Clavicle Fracture Fixation. A review of neurovascular complications associated with clavicle fracture fixation highlighted the increased risks in delayed surgery, nonunion, and malunion cases. Complications such as brachial plexopathy, pseudoaneurysms, and thoracic outlet syndrome were more frequent in delayed cases. This study underscored the importance of timely surgical intervention to minimize risks and improve outcomes.

RESEARCH

Department Research Day: May 30th, 2024

Hand and Upper Extremity Presentations:

Long-Term Efficacy of Corticosteroid Injection for Carpal Tunnel Syndrome: A Systematic Review – **Todd Alter PGY5 (Winner Best Paper 2024)**

Coding Practices in Hand Surgery and Their Relationship to Surgeon Compensation Structure – **Anna Green PGY5**

ChatGPT's Performance on the Hand Surgery Self-Assessment Exam: A Critical Analysis – **Yuri Han MS2**

Bundled Payments in Hand Surgery: An Affordable Solution to Overwhelming Healthcare Costs – **Jared Sain PGY2**

A Substantial Increase in Injuries and Hospitalizations Associated with Playing Pickleball from 2020 to 2022: A National Database Study – **Ryan Cheng MS1**

CONCLUSION

As we reflect on 2024, it is evident that hand and upper extremity service has made meaningful strides in education, research, and clinical care. The collaborative efforts of our faculty, residents, and students have not only resulted in impactful research studies but also fostered a culture of shared learning and innovation. The numerous studies published, accepted, and currently in progress stand as a testament to the productive synergy within our team.

Looking ahead, we aim to build on this momentum, fostering even greater collaboration and innovation. By leveraging the insights gained this year and continuing to nurture a culture of inquiry and professional growth, we are confident in our ability to further elevate the field of hand and upper extremity surgery. Together, we are shaping a future that honors our commitment to excellence and the betterment of patient outcomes.

ChatGPT's Performance on the Hand Surgery Self-Assessment Exam: A Critical Analysis

Published in Journal of Hand Surgery Global Online

Authors: Yuri Han, Hassaam S. Choudhry, Michael E. Simon, Brian M. Katt

Abstract

Purpose: To assess the performance of Chat Generative Pre-Trained Transformer (ChatGPT) when answering self-assessment exam questions in hand surgery and to compare correct results for text-only questions to those for questions that included images.

Methods: This study used 10 self-assessment exams from 2004 to 2013 provided by the American Society for Surgery of the Hand (ASSH). ChatGPT's performance on text-only questions and image-based questions was compared. The primary outcomes were ChatGPT's total score, score on text-only questions, and score on image-based questions. The secondary outcomes were the proportion of questions for which ChatGPT provided additional explanations, the length of those elaborations, and the number of questions for which ChatGPT provided answers with certainty.

Results: Out of 1,583 questions, ChatGPT answered 573 (36.2%) correct. ChatGPT performed better on text-only questions than image-based questions. Out of 1,127 text-only questions, ChatGPT answered 442 (39.2%) correctly. Out of the 456 image-based questions, it answered 131 (28.7%) correctly. There was no difference between the proportion of elaborations among text-only and image-based questions. Although there was no difference between the length of elaborations for questions ChatGPT got correct and incorrect, the length of elaborations provided for image-based questions were longer than those provided for text-only questions. Out of 1,441 confident answers, 548 (38.0%) were correct; out of 142 unconfident answers, 25 (17.6%) were correct.

Conclusions: ChatGPT performed poorly on the ASSH self-assessment exams from 2004 to 2013. It performed better on text-only questions. Even with its highest score of 42% for the year 2012, the AI platform would not have received continuing medical education credit from ASSH or the American Board of Surgery. Even when only considering questions without images, ChatGPT's high score of 44% correct would not have "passed" the examination.

Clinical relevance: At this time, medical professionals, trainees, and patients should use ChatGPT with caution as the program has not yet developed proficiency with hand subspecialty knowledge.

Long-term Efficacy of Corticosteroid Injection for Carpal Tunnel Syndrome: A Systematic Review

Published in HAND

Authors: Peter Y. W. Chan, Adrian Santana, Todd Alter, Matthew Shiffer, Srikaran Kalahasti, Brian M. Katt

Abstract

Carpal tunnel syndrome (CTS) is a debilitating condition that can cause significant morbidity. Corticosteroid injection (CI) is a popular treatment for CTS. Short-term benefits of CI for CTS have been reported, but there is little evidence on long-term outcomes. We performed a systematic review in the PubMed/MEDLINE and Cochrane Library databases to identify studies which reported outcomes of CI for CTS with at least 1-year follow-up. We identified 20 total studies and extracted data on outcomes such as number of patients needing eventual surgery or reinjection, complications, and functional scores. In included studies, 41.6% of patients underwent eventual carpal tunnel release surgery (CTRS), 29% underwent reinjection, there were no major and approximately 34/1133 (3.0%) minor complications, and median/mean time from CI to eventual CTRS ranged from 128 to 446 days. There was disparity on the long-term efficacy of CI for functional outcomes. The evidence indicates that CI is a very low risk procedure that has potential to improve symptoms enough to either prevent or, in most cases, delay the need for further reintervention. However, our conclusions are limited by the heterogeneity of available studies. There is a need for further, high-quality research on this topic.

PUBLISHED ARTICLES IN 2024

Understanding Variations in the Management of Displaced Distal Radius Fractures With Satisfactory Reduction

Published in HAND

Authors: Jomar N. A. Aryee, Giulia C. Frias, Daniel K. Haddad, Kevin D. Guerrero, Vivian Chen, Fan Ling, David Kirschenbaum, James T. Monica, Brian M. Katt

Abstract

Background: The American Academy of Orthopaedic Surgeons has set forth Clinical Practice Guidelines (CPGs) to help guide management of closed, displaced distal radius fractures (DRFs). There still exists variation in practice regarding operative vs nonoperative decision-making. This study aims to identify which factors influence the decision to treat DRFs not indicated for surgery by the CPGs after initial closed reduction.

Methods: Fifteen sets of DRFs and clinical vignettes were distributed via email to over 75 orthopedic residency programs, Orthopaedic Trauma Association, and New York Society for Surgery of the Hand membership. A Qualtrics survey collected respondent demographics, choice of treatment, and rationale.

Results: Responses were received from 106 surgeons and resident trainees. The odds of selecting operative management for fractures with 5 or more radiographic instability signs versus 3 or 4 was 3.11 ($P < .05$). Age over 65, higher patient activity level, and dominant-hand injury were associated with greater odds of operative management (3.4, 30.28, and 2.54, respectively). In addition, surgeons with more years in practice and high-volume surgeons had greater odds of selecting operative management (2.43 and 2.11, respectively).

Conclusions: Assessment of instability at the time of injury, patient age and activity level, as well as surgeon volume and time in practice independently affect the decision to manage well-reduced DRF with surgical or nonsurgical treatment. The source of heterogeneity in the treatment of these fractures is borne at least in part from a lack of formal direction on the importance of prereduction instability from the CPGs.

PUBLISHED ARTICLES IN 2024

The "Bag of Bones" Treatment of Comminuted Intra-articular Distal Humerus Fractures in the Elderly

Published in HAND

Authors: Rohit Garg, Peter S. Vezeridis, James T. Monica, Chaitanya S. Mudgal

Abstract

Background: Extensively comminuted intra-articular distal humerus fractures in the elderly present a challenging therapeutic dilemma. The purpose of this study was to investigate the results of nonoperative treatment of these fractures in a select subset of patients.

Methods: Patients treated with nonoperative management for a comminuted intra-articular distal humerus fracture between 2007 and 2018 were reviewed. Patients were administered 3 elbow-specific functional outcomes instruments.

Results: A total of 8 patients (2 men, 6 women) were treated with brief immobilization followed by early range of motion. All had fractures with extensive comminution of the articular surface such that open reduction and internal fixation was not feasible. Average age was 70 years. At an average of 33 months postinjury, average flexion was 124°, and extension was -27°, with full forearm rotation. No patients required pain medications at the latest follow-up. At 33 months of follow-up, the average Mayo Elbow Performance Score was 92/100 (100 optimal), Oxford Elbow Score was 43/48 (48 optimal), and Quick Disabilities of the Arm, Shoulder, and Hand Score was 10/100 (0 optimal). All patients were satisfied with the nonsurgical treatment that they received.

Conclusions: Nonoperative treatment for comminuted intra-articular distal humerus fractures results in acceptable functional outcome in elderly patients and should be considered when the fracture is not amenable to internal fixation and in lower-demand patients with higher surgical risk.

PUBLISHED ARTICLES IN 2024

Evaluation of Patient Expectations and Outcomes after Distal Radius Fractures

Published in HAND

Authors: Anna H. Green, Todd H. Alter, Bobby B. Varghese, Fernando Ferrera, Thomas Doss, Joseph Hawes, Giulia C. Frias, Kevin D. Guerrero, Amr M. Tawfik, Brian M. Katt, James T. Monica

Abstract

Background: Patient expectations influence patient-reported outcomes after musculoskeletal injuries. The goal of this study is to determine how pretreatment expectations correlate with outcomes in patients with distal radius fractures.

Methods: Seventy-five patients with an isolated distal radius fracture were prospectively enrolled into nonoperative and operative cohorts. The Trauma Expectation Factor-Trauma Outcome Measure (TEF-TOM) score was the primary outcome measure. Trauma Expectation Factor scores were recorded at the time of enrollment, and TOM scores were recorded at 3, 6, and 12 months. Quick Disabilities of the Arm, Shoulder, and Hand (qDASH) and Patient-Rated Wrist Evaluation (PRWE) scores were also recorded.

Results: Trauma Outcome Measure scores at all time points were worse than expected ($P < .01$). Expectations were higher for patients younger than 65 years than for the 65+ group ($P = .02$). In patients aged 65+ years, mean TOM at 3 months was not significantly different than expected ($P = .11$) but decreased by 6 ($P = .04$) and 12 months ($P < .01$). Baseline TEF and TEF-TOM scores were not significantly different between operative and nonoperative groups ($P = .37$). Quick Disabilities of the Arm, Shoulder, and Hand and PRWE scores were not significantly different between age or treatment groups at the final follow-up.

Conclusions: The overall treatment of distal radial injuries in our study did not meet patient expectations. Patients aged 65 years or older had lower expectations but were not able to predict their outcomes better than patients aged <65 years. There were no differences in TEF or TOM by treatment method. Patients demonstrated improved functional outcomes (qDASH/PRWE) at all time points regardless of age and treatment method.

PUBLISHED ARTICLES IN 2024

Early Formation of a Tenosynovial Retinacular Cyst Between A1 and A2 Pulleys After Open A1 Pulley Release

Published in JBJS Case Connector

Authors: Daniel K. Haddad, Ryan C. Scheer, Peter Filtes, Ryan M. Coyle

Case: A 66-year-old woman presented with a left middle trigger finger and underwent a proximal annular pulley (A1) release. Four weeks later, she presented with a new mass in the same finger without recurrent triggering. She was found to have a tenosynovial retinacular cyst, which was surgically excised. Conclusion: This case demonstrates early ganglion cyst formation between A1 and A2 pulleys after A1 pulley release. Although the etiology is unclear, this case illustrates effective treatment strategies.

PUBLISHED ARTICLES IN 2024

Effects of Postoperative Splinting on Outcomes Following Digital Mucous Cyst Excision: A Retrospective Review

Published in the Journal of Hand and Microsurgery

Authors: Aneesh G. Patankar, John P. Avendano, Pasquale Gencarelli Jr., Amr M. Tawfik, Todd H. Alter, Brian M. Katt

Abstract

Background: Digital mucous cysts (DMCs) are masses on the fingers that can be definitively managed with surgical excision. Though uncommon, surgical site infections can develop into septic arthritis. We sought to determine whether postoperative splinting decreases rates of postoperative infection and the need for postoperative antibiotics. We also explored the effect of age, gender, obesity, and preoperative antibiotic administration on infectious complications.

Methods: Patients who underwent DMC excision between 2011 and 2021 were retrospectively identified. Chi-squared and Fisher's exact tests were used to analyze the complication rates including documented infection, postoperative antibiotic administration, mass recurrence, and return to operating room. Associations were analyzed between both preoperative antibiotic administration and postoperative splinting with respect to postsurgical complications.

Results: The database search identified 373 patients who underwent 394 DMC excisions. Postoperative antibiotics were given in splinted patients at lower rates than their nonsplinted counterparts with a small-to-moderate effect size, but the difference was not statistically significant (2.7 vs. 7.5%). Preoperative antibiotic administration was not found to significantly affect the prescription of postoperative antibiotics. Splinting did not reduce rates of DMC recurrence. Patients who were splinted were more likely to have also received preoperative antibiotics. Males were given postoperative antibiotics more frequently than females (12.6 vs. 4.0%).

Conclusions: Though not statistically significant, splinted patients were prescribed postoperative antibiotics less frequently. Postoperative antibiotics were utilized more frequently than the rate of infections typically reported following this procedure, possibly indicating overcautious prescription habits or underreported suspected infections.

PUBLISHED ARTICLES IN 2024

Capitate Fracture Subsequent to Capitolunate Staple Fusion: A Case Report

Published in the Journal of Hand and Microsurgery

Authors: Anna Zakusylo, Jared A. Escobar, Gregory R. Toci, Michael N. Nakashian, Daniel Fletcher, Brian M. Katt

Abstract

We report a case of a 71-year-old man who underwent capitolunate fusion for scapholunate advanced collapse. At the patient's 4-month follow-up, there was evidence of a fracture at the distal staple tine. He subsequently underwent removal of staple hardware with revision open reduction internal fixation using headless compression screw fixation and bone grafting. The literature review aimed to identify possible mechanisms and analyze similar cases of this complication. We presume that the fracture resulted from increased stress on the bone from both drill holes and the orientation of the staples. Placing the tines in different planes may decrease the risk of this complication.

PUBLISHED ARTICLES IN 2024

The Role of External Fixation in the Treatment of Distal Radius Fractures

Published in Cureus

Authors: Robert Kamil, Elise McKenna, Paul Romeo, Orett Burke, Anna Zakusylo, Aman Andemichael, Nicole Badalyan, Thomas Stamos, Ajul Shah, Brian M. Katt

Abstract

There are numerous internal fixation (IF) options available for distal radius fractures (DRFs). The choice of fixation method depends on factors such as fracture morphology, soft tissue integrity, the patient's clinical status, and the surgeon's training. While volar plate fixation has become the primary approach for addressing these fractures, alternative IF methods like K-wire fixation, fragment-specific fixation, and dorsal bridge plating continue to be effective. Despite the versatility of IF, there are certain clinical situations where prompt and conclusive management through open reduction and internal fixation (ORIF) is not suitable. These instances include the treatment of polytraumatized patients, individuals with compromised soft tissues, or those medically unstable to tolerate lengthy anesthesia. In such cases, proficiency in closed reduction and external fixation (EF) proves invaluable. Being able to identify these clinical scenarios and comprehend the efficacy and safety of EF in addressing DRFs is valuable for any surgeon handling such injuries.

PUBLISHED ARTICLES IN 2024

Neurovascular Complications Following Clavicle Fracture Fixation: Timing, Mechanisms, and Clinical Implications

Published in Cureus

Authors: Aryan Borole, Diana Vitkovska, Jason Yang, John P. Avendano, James Monica, Brian M. Katt

Abstract

This review addresses the neurovascular complications associated with the surgical treatment of clavicle fractures through open reduction and internal fixation (ORIF). Despite being a generally safe procedure, it can lead to severe complications including brachial plexopathy, pseudoaneurysm, arteriovenous fistulas (AVF), deep vein thrombosis (DVTs), and thoracic outlet syndrome (TOS). One significant observation, not often highlighted in previous literature, is that neurovascular complications are more common in cases involving delayed fixation, nonunion, or malunion, compared to those treated acutely. This review emphasizes the impact of the timing of surgery on the frequency of these rare complications and examines their underlying mechanisms.


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