to Nepali patients who underwent burn scar contracture release of the palmar hand and would not be able to return to the hospital for long-term physical therapy after their surgery. Patients were instructed to wear the splint at night for six months and to progressively extend the splint's ratchet mechanism as tolerated. Patients were assessed for range of motion and hand function pre-operatively, one week post-operatively, and three months post-operatively.

**RESULTS:** The initial prototype underwent multiple rounds of iterative design and feedback from patients for comfort, fit, and durability. Patients demonstrated good compliance with the splinting regimen and expressed satisfaction with the fit and durability of the device. Preliminary follow-up suggests that patients using the splint maintain post-operative range of motion without additional re-contracture.

**CONCLUSION:** We have created a hand splint to prevent flexion recontracure following burn scar contracture release of the hand. Ongoing work includes six-month follow-up to ensure maintenance of improved range of motion and testing in other indications including Dupuytren's contracture and stroke.

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**A Viable Alternative to Wrist Fusion: The Motec Arthroplasty**

**Lolade Giwa, BSc, MBBS; Aftab Siqqiqui, MBBS; Greg Packer, MBBS**

**BACKGROUND:** The Motec cementless modular metal-on-metal ball-and-socket wrist arthroplasty is an implant with promising intermediate results. An alternative to primary wrist fusion, total wrist arthroplasty is an option for active patients, who wish to retain their wrist function. It is indicated in cases of degenerative osteoarthritis, post-traumatic arthritis and rheumatoid (inflammatory) arthritis.

**METHODS:** Retrospective case note review of patient demographics, pre and post-operative Disabilities of the Arm Shoulder and Hand (DASH), MAYO scores, range of movement and grip strength, complications and follow-up duration. All complications in follow up were recorded across the 5 year period.

**RESULTS:** 24 implants on 22 patients over 5 years, mean age 58; 8 females and 14 male. Indications were SNAC, SLAC, inflammatory and generalized osteoarthritis. The patients showed large improvements of MAYO and DASH scores post-operatively, alongside increased in range of movement. There was just one case of implant loosening—the radial screw after a wound infection, which was revised with a longer screw. Two implants were converted to Motec fusion due to pain. One implant was dislocated and relo- cated. Only 6 patients were unable to return to work.

**CONCLUSION:** Similar to results of Reigstad et al, this series shows the Motec implant to be a good motion preserving alternative to total wrist fusion.

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**First Report of Bilateral Hand Allotransplantation in a Pediatric Patient**

**David Colen, MD; Lin Lin Gao, MD; Benjamin Chang, MD; L. Scott Levin, MD**

**INTRODUCTION:** In addition to restoration of function, pediatric amputees have much to gain from hand transplantation. These patients may enjoy improved psychological and social development and prove to be better substrates for transplantation compared to their adult counterparts. However, the risks of life-long immunosuppression may outweigh the benefits of transplantation. We report the first bilateral pediatric hand transplant at level of mid-forearm in a patient who is on immunosuppression for his kidney transplant.
METHODS: A candidate was chosen based on strict screening criteria including ongoing immunosuppression, proof of compliance and strong family support. The recipient was an eight-year-old quadriplegic amputee secondary to sepsis with distal forearm amputations who was functional with lower extremity prostheses but had failed upper extremity prostheses. A donor was found with ABO compatibility and negative cross-match; donor and recipient were matched for hand size based on preoperative 3D modeling and skin color. Four separate teams worked simultaneously to prepare the donor and recipient forearms. Custom 3D CT-generated cutting guides were used to plate the radius and ulna. Cellcept was administered and ABO compatibility was verified prior to vascular anastomosis (basilic vein and ulnar artery, cephalic vein and radial artery). Neuroraphies were performed for the median, ulnar, sensory radial and ulnar nerves. Flexor and extensor tendons were repaired in standard fashion and the dorsal veins were coupled prior to skin closure.

RESULTS: Complications included right radial arterial thrombosis that was successfully revised and episodes of grade I-II rejection that resolved with systemic steroid and topical tacrolimus and steroid. Four months after surgery, patient continued to work on active range of motion with emerging pinch and hook grasps. TMS motor mapping showed robust cortical representation of the extrinsic flexors and extensors, consistent with adaptive changes in motor cortex.

CONCLUSIONS: Bilateral hand allotransplantation in a pediatric patient on baseline immunosuppression for solid organ transplant has been successful with recovery of function and cortical remodeling in the early post-operative period. Further follow up is needed to determine long-term outcome.

Analysis of National Institutes of Health Funding in Hand Surgery

Jason Silvestre, BS; Qing Z Ruan, MD; L. Scott Levin, MD; Benjamin Chang, MD

BACKGROUND: Research budgets of the National Institutes of Health (NIH) are decreasing, yet adequate funding is needed to advance biomedical research. Currently, the state of NIH funding in hand surgery is poorly understood. This study elucidates the portfolio of NIH grants to hand surgeons.

METHODS: This was a cross-sectional study of NIH grants awarded to American Society for Surgery of the Hand (ASSH) members during 1992 - 2016. Funding totals, mechanisms, and institutes were obtained from the NIH RePORTER database. Abstracts were categorized by research type (clinical, translational, basic science, education/training) and area of interest. An Internet-based search was conducted to determine principal investigator characteristics.

RESULTS: 2,316 ASSH members were queried and 19 had NIH funding (0.8%). NIH-funded hand surgeons were predominately male (17/19, 89%), full-professors (14/19, 74%), and orthopaedic trained (15/19, 79%). 39 unique grants were awarded for a total of $57,462,753. R01 grants accounted for most costs (84.2%) followed by ZIA intramural grants (6.4%), and K24 (2.1%) grants. The top NIH institutes were the National Institute for Arthritis and Musculoskeletal and Skin Diseases (63.2%) and the National Institute for Neurological Disorders and Stroke (34.1%). Costs supported translational (47.9%), basic science (32.5%), clinical (16.9%), and education/training (2.7%) research. Funded areas of research included peripheral nerve (29.6%), tendon (25.2%), nerve compression (11.4%), bone (18.4%), microvascular (7.8%), and joint (7.6%) diseases. The top funded institutions were Washington University (32.8%), Mayo Clinic (24.9%), and University of Michigan (14.7%).

CONCLUSIONS: Few hand surgeons obtain NIH research grants suggesting a tenuous portfolio for possible budget cuts. Future research should elucidate barriers to NIH funding procurement among academic hand surgeons.

DISCLOSURES: None

Do Plastic Surgery Residents Receive Similar Hand Surgery Training?

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BACKGROUND: Governing bodies of graduate medical education require standardized training of surgical residents. However, efforts to standardize operative hand experience for plastic surgery residents remain challenging. This study assess the variability of hand surgery cases performed by plastic surgery residents in the U.S.

METHODS: National operative case logs of chief residents in plastic surgery were obtained from the Accreditation Council of Graduate Medical Education (2011 - 2015). Cumulative hand surgery cases were compared between integrated and independent residents. The number of cases