codes. Exclusion criteria included patients who had a wrist ganglion diagnosis before or at the time of arthroscopy, had bilateral wrist pathology, or did not have a diagnosis indicating laterality. Predictor variables included age, gender, comorbidities, and arthroscopic procedure performed. Multivariable logistic regression was used to analyze outcomes.

RESULTS: Among 24,718,751 unique outpatients, 39,832 patients had a diagnosis of a wrist ganglion cyst (0.16%) during encounters from October 2015 to December 2016. A total of 2,420 patients underwent wrist arthroscopy during this time period. Of this group, the majority of patients were women (60.0%) and average age was 40.5 years (SD, 14.9; range, 11–65 years). Rates of diabetes mellitus (0.04%), obesity (0%), nicotine dependence (0.04%), and connective tissue disorder (0%) were low. Indications for arthroscopy most commonly involved osteoarthritis (8.3%), other joint derangements or disorders (78.9%), dislocation and sprain (56.7%), and synovitis (23.2%). Arthroscopic procedures performed included diagnostic arthroscopy with or without synovial biopsy (3.4%); lavage and drainage for infection (0.1%); partial or complete synovectomy (8.1%), triangular fibrocartilage complex excision, repair, and/or joint debridement (80.0%); internal fixation (1.5%); or a combination of these procedures (15.9%). Postoperatively, 30 patients (1.24%) were diagnosed with an ipsilateral wrist ganglion with a mean time to diagnosis of 4.0 months (SD, 2.4; range, 0.2–9.0). Significant predictors of postoperative ganglion diagnosis included female gender (odds ratio, 4.0; \( P < 0.01 \)) and triangular fibrocartilage complex and/or joint debridement (odds ratio, 0.1; \( P < 0.01 \)) as the arthroscopic procedure performed.

CONCLUSIONS: Wrist arthroscopy is associated with a postoperative incidence of ganglion cyst formation that is nearly 8 times the rate of the general population. Surgeons should consider discussing ganglion cyst formation as a possible risk when obtaining informed consent for wrist arthroscopy. Additional studies are needed to investigate techniques that minimize risk.

Reawakening Neuritis of the Median Nerve After Carpal Tunnel Release: Defining and Predicting Patients at Risk

Presenter: John Roberts, MD

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PURPOSE: Patients with longstanding carpal tunnel symptoms can develop neuritis of the median nerve following decompression as increased blood flow “re-awakens” the nerve, resulting in transient and paradoxical, worsened neuropathic pain. We hypothesize that preoperative variables can predict which patients are most at risk for this phenomenon to guide patient counseling and postoperative satisfaction.

METHODS AND MATERIALS: A retrospective chart review was performed on all patients who had undergone either open or endoscopic carpal tunnel release at a single institution between January 2013 and December 2017. Patients demonstrating increased pain with “pins and needles” in the median nerve distribution postoperatively were included. Exclusion criteria included patients under 18 years old, acute carpal tunnel syndrome, concern for incomplete release or need for early revision surgery, and multiple procedures at the time of carpal tunnel release. A control group was randomly selected for comparison. Demographic data, medical history, carpal tunnel history, and EMG/NCS findings were recorded. Matched groups were evaluated with 2-sample \( t \) tests, Wilcoxon rank sum tests, and chi-square analyses.

RESULTS: A total of 647 patients were identified, of which 15 were found to have symptoms consistent with median nerve “reawakening.” All patients either had significant improvement in postoperative EMG/NCS studies or ultimately had resolution in their carpal tunnel symptoms at long-term follow-up. Compared to the matched group, the reawakening cohort was older, had a longer duration of symptoms, and were more likely to have it occur in their dominant hand. Furthermore, EMG findings were more likely to show increased fibrillations and sharp waves in abductor pollicis brevis.

CONCLUSIONS: Median nerve reawakening following carpal tunnel release has not been previously described but occurs in 2.3% of all patients with carpal tunnel. This frequency is much higher in older patients with prolonged symptoms. Other predictors include advanced age, longer duration of symptoms, and evidence of abductor pollicis brevis damage on EMG. Preoperative counseling of patients at high risk for the reawakening phenomenon can help guide postoperative care and increase patient satisfaction when it occurs.

Effects of Postoperative Physician Phone Calls for Hand and Wrist Fractures: A Prospective, Randomized Controlled Trial

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**PURPOSE:** Hand and wrist fractures are common injuries and lead to significant loss of productivity and ability to perform activities of daily living. Poor compliance with postoperative instructions can predispose to complications, patient dissatisfaction, and permanent disability. We sought to identify whether a phone call by a physician in the week following surgery for hand and wrist fractures improves patient outcomes, satisfaction with treatment, and compliance with treatment recommendations.

**METHODS:** We prospectively enrolled consecutive adult patients undergoing outpatient surgery for isolated hand and wrist fractures in a single, metropolitan level I trauma center from January 2018 to December 2018. Patients were randomized to either a standard postoperative course or to receiving an additional physician phone call reviewing the postoperative instructions during the week following surgery. The primary endpoint was Brief Michigan Hand Questionnaire (bMHQ) score change, which was measured through survey just before surgery and ≥1 month after surgery. Secondary endpoints included overall satisfaction with care on a 5-point Likert scale, compliance with treatment recommendations, and presence of postoperative complications. Patients in the phone call study arm were surveyed for clarity of discharge and follow-up instructions. The surgical team was blinded to treatment arms.

**RESULTS:** The majority of patients were right-handed (70.8%), black (58.3%), male (70.8%), and had an annual income <$30,000 (58.3%). Starting at 1 month following surgery, average change in bMHQ score demonstrated 26% improvement, but there was no difference in the absolute change in bMHQ score between groups (12.2 versus 6.5; \(P = 0.69\)). Similarly, most patients were satisfied with their care preoperatively (89.5%), immediately postoperatively (85.7%), and late postoperatively (73.3%), but the average late postoperative Likert score did not differ between groups (1.4 versus 2.5; \(P = 0.21\)). There was a stronger correlation between patients’ hand function, as measured by bMHQ scores, and satisfaction with care starting 1 month after surgery (\(R^2 = 0.502\); \(P = 0.002\)) than preoperatively (\(R^2 = 0.252\); \(P = 0.029\)). Immediately following surgery, 83% of responding patients reported their follow-up appointment time was clear, all believed their discharge instructions were clear, and 83% felt immobilization instructions were clear. The average readability of discharge instructions was grade 7.7, which was below the average education of the patient population (75% had at least completed high school). Despite this, 13% of patients removed their own cast or Kirschner wires, 67% did not follow-up within a week as recommended, and 63% did not complete the postoperative treatment recommendations to be satisfactorily discharged from care. Thirty-three percent of patients had complications, which included pin site infections, bleeding, delayed wound healing, and pain necessitating emergency room visit.

**CONCLUSIONS:** A postoperative phone call by a physician does not result in enhanced patient satisfaction or improved outcomes among the hand and wrist fracture patient population. Based on these findings, we do not feel that phone call follow-up is an effective use of resources. In certain clinical settings, patients treated for hand and wrist trauma have high rates of noncompliance with treatment, and the need for identifying interventions to improve patient outcomes is paramount.

**Recent Smoking History Is Not Associated With Adverse 30-day Outcomes Following Replantation or Revascularization Procedures of the Upper Extremity**

**Presenter:** Olachi O. Oleru, BS

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**INTRODUCTION:** Cigarette smoking has been associated with complications in general wound healing, but recent studies have reported varied conclusions regarding the impact of smoking on replantation or revascularization outcomes.\(^1\)\(^2\) Upper extremity replantation and revascularization are complex procedures which rely on proper wound healing for optimal success.\(^3\) This study investigated the effects of smoking on 30-day postoperative outcomes following upper extremity replantation/revascularization.

**METHODS:** The American College of Surgeons National Surgical Quality Improvement Program database was queried to identify all patients who underwent upper extremity replantation or revascularization between 2008 and 2016. Patients were identified using Current Procedural Terminology codes that corresponded to replantation procedures of the digit, thumb, hand, forearm, and arm or blood vessel repair of the finger, hand, or upper extremity. Patients with a history of cigarette smoking within 1 year before admission for surgery (smokers, \(n = 89\)) were compared to those without this smoking history (nonsmokers, \(n = 237\)). Univariate analysis was employed to identify possible individual risk factors for 30-day postoperative major and minor complications, readmissions, and reoperations. Multivariate regression models were utilized to calculate odds ratios (ORs) and 95% confidence intervals (95% CIs) to evaluate the impact of risk factors on 30-day outcomes.