fractures (42.9% vs. 10.8%, p=0.002). There was no difference in outcome obtained between the two groups.

CONCLUSION: Despite their similarities in clinical and radiographic presentation, pediatric JE phalangeal fractures are a distinct entity from SH2 fractures. Presenting with significantly more radiographic angulation and clinical instability, JE fractures more frequently required operative fixation compared to SH2 fractures. This distinction is important when determining the treatment strategy employed (operative fixation versus nonoperative management) as well as potential length and degree of immobilization/stabilization for nonoperative management to increase the success of treatment.

26.

BIOFILM MANAGEMENT: ATTACK THE MATRIX WITH ULTRASOUND

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PURPOSE: Implant infections are highly morbid and costly. \textit{Staph} species are the primary agents. Despite extensive efforts, satisfactory treatment is elusive, largely due to the persistence of biofilm. Ultrasound is a known biofilm disrupter. A new low frequency direct contact ultrasound (LFDCU) device is available for wound debridement. This study is meant to determine if the energy levels available in this instrument are effective in dispersing biofilm.

METHODS: \textit{Staph. epidermidis} biofilm was grown on one centimeter diameter metallic discs of both medical grade stainless steel and titanium. The discs were treated in wells with the LFDCU for ten seconds at a three different power levels. The discs were stained with crystal violet and effluent was cultured. The study was repeated with hypochlorous acid as the device irrigant. Controls were performed.

RESULTS: Biofilm was completely removed at all power levels. With saline irrigant, the effluent had viable planktonic bacteria. With hypochlorous acid irrigant, the effluent was sterile.

CONCLUSION: The new LFDCU completely disperses biofilm from metallic discs at all energy levels. This suggests that biofilm can potentially be cleared from infected metallic implants even at low energy levels. In such cases, hypocholous acid device irrigation can remove any loosened bacteria.

27.

THE USE OF LIPOSOMAL BUPIVACAINE IN PATIENTS UNDERGOING ABDOMINALLY-BASED AUTOLOGOUS AND IMPLANT-BASED BREAST RECONSTRUCTION

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PURPOSE: Federal mandates to reduce opioid use have placed analgesia management in the national conversation. Liposomal bupivacaine (LB) is an effective analgesic in the immediate postoperative period. This study explores the effect of LB on postoperative narcotic use, length of stay (LOS), and patient satisfaction in women undergoing autologous and implant-based breast reconstruction.

METHODS: In our previous study, patients undergoing autologous (n=37) and implant-based reconstruction (n=20) who were injected with LB demonstrated significantly decreased total and oral narcotic use compared to controls. We subsequently changed our post-operative protocol and examined these changes over a 90-day implementation period. Patients undergoing abdominally-based autologous reconstruction (n=9) were transitioned to oral narcotics on post-operative day (POD) 2 rather than POD 3. Patient controlled analgesia (PCA) was eliminated from post-operative protocol in patients undergoing implant-based reconstruction (n=16). These patients were discharged on POD 1
rather than POD 2. Both patient groups were injected with LB and compared to historic controls. We examined LOS and patient satisfaction as primary outcomes within these populations.

RESULTS: Patients undergoing implant-based reconstruction, subjected to the new protocol, demonstrated a decreased length of stay. Utilizing standardized surveys, improvements in pain control were demonstrated with a percentile ranking change from 88th to 99th percentile, pain management summary score improvement from 62nd to 99th percentile, and improvement in pain control ranking from 27th to 99th percentile.

CONCLUSION: This study demonstrates patients undergoing implant and autologous-based breast reconstruction, who receive regional block with LB, use significantly fewer narcotics with decreased LOS and improved satisfaction.

28.

NOVEL ORAL ANTICOAGULANTS (NOACS) IN MICROSURGERY: A REVIEW

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PURPOSE: Thrombosis of the vascular anastomosis or distal flap microcirculation is the most common cause of microvascular free tissue transfer failure. The large volume of existing literature has not yet reached a consensus on the ideal anticoagulation regimen to prevent thrombosis following microsurgery. Dabigatran, rivaroxaban, and apixaban are novel oral anticoagulants (NOACs) with an efficacy and safety profile equivalent or superior to standard agents such as warfarin. However, published reports of the use of NOACs in microsurgery are limited. This review aims to summarize current knowledge regarding the use of NOACs in microsurgery and provide clinical recommendations based on each agent’s pharmacodynamics.

METHODS: A systematic literature review was performed using the PubMed, Cochrane, and Google Scholar databases. Inclusion criteria were case reports and series of the use of NOACs in microsurgery.

RESULTS: Five articles describing the use of NOACs in microsurgery were fully reviewed. A total of 32 patients undergoing 46 microsurgical procedures with either dabigatran or rivaroxaban were studied, with adverse effects occurring in 3 (6.5%). The most common adverse effect was hemorrhage, two of which were mild cases. No articles describing the use of apixaban were found. The risk of bleeding increased with concurrent administration of NSAIDs or other anticoagulants.

CONCLUSION: Preoperative administration of NOACs in microsurgery is safe and has a low side-effect profile compared to standard anticoagulants. However, current administration protocols remain varied. Further research is warranted to elucidate the risks and benefits of NOACs in microsurgery, and to establish management guidelines for improved microsurgical outcomes.

29.

TO OPERATE OR NOT?: SURGICAL DECISION-MAKING CONCERNING THE SPECTRUM OF ORBITOFRONTAL DEFORMITY ASSOCIATED WITH METOPIC SUTURE CLOSURE

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PURPOSE: Metopic suture closure can manifest from benign metopic ridge, a benign variant of normal, to “true” metopic craniosynostosis (MCS), a severe trigonocephaly. Currently, there is no gold standard for how much associated orbitofrontal dysmorphology should trigger surgical intervention. In our study, we used a semi-automated three-dimensional (3D) curvature analysis to separate the phenotypes along the spectrum, and have employed it in conjunction with cluster analysis to compare surgeons’ thresholds for operation at one tertiary care craniofacial center.

METHODS: Retrospective chart review was performed identifying patients who presented with an early metopic