paucity of research on TXA in breast reconstruction. The aim of this study was to investigate whether intravenous TXA reduces the risk of postoperative hematoma following immediate implant-based breast reconstruction.

Methods: A single-center retrospective cohort study was performed to analyze all consecutive patients undergoing immediate implant-based breast reconstruction following mastectomy over two years (2015-2016). The authors reviewed the incidence of postoperative hematomas amongst all patients who either did, or who did not receive intravenous TXA at the time of surgery. The patients in the intervention group received 1000 mg of intravenous TXA prior to incision and 1000 mg at the conclusion of the procedure. Demographic and surgical characteristics were collected for all patients. The primary outcome measure was hematoma. Additionally, adverse events, such as thromboembolic occurrences were captured. Logistic regression analysis was performed using Fisher's exact test and the Mann-Whitney-Wilcoxon test. Results with a p value of <0.05 were considered significant.

Results: A total of 499 patients were included in this study. Overall, 116 patients (217 breasts) received intravenous TXA, whereas 383 patients (651 breasts) did not. Patient characteristics and comorbidities were similar amongst the two groups. After controlling for age, hypertension, type of reconstruction (pre-pectoral or sub-pectoral), and mastectomy type (nipple-sparing or skin-sparing), patients who received intravenous TXA were less likely to develop hematomas (n=1; 0.46%) than patients who did not receive TXA (n=19; 2.9%) [p=0.018]. Adverse effects of intravenous TXA, including thromboembolic phenomena were not observed.

Conclusion: The use of tranexamic acid in immediate implant-based breast reconstruction is associated with a decreased risk of hematoma, with an acceptable safety profile. Further prospective randomized studies are warranted to further corroborate these findings.

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Non-invasive 3d High Resolution Imaging And Scarless 0.33mm Microbiopsy For Ultrastructural And Molecular Analysis Of Laser Treated Facial Skin

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Purpose: Currently, the outcomes of aesthetic facial treatments are limited to patient-reported satisfaction and patient, clinician, or observer rating scales. These assessments are highly subjective and incapable of evaluating skin function and structure below the superficial epidermis. The purpose of this study was to determine the practicality of non-invasive 3D imaging and 0.33mm microbiopsy methods for the objective assessment of facial skin following laser treatment. In addition, we evaluated skin repair following microbiopsy extraction.

Methods: Twelve patients received a single facial treatment with a 1470nm/2940nm laser. Assessments were performed before treatment, seven days, three weeks, and three months post-treatment. VISIA imaging was used to assess skin texture. High-resolution, non-invasive 3D skin imaging- ultrasoundography and optical coherence tomography (OCT)- were used to measure epidermal/dermal thickness, blood flow, surface roughness, wrinkle depth and attenuation coefficient. 0.33mm diameter microbiopsies were collected for histological and gene expression evaluation. In order to assess scar formation following microbiopsy, fifteen subjects were randomized to receive no biopsy, biopsy on the left nasolabial fold, or biopsy on the right nasolabial fold. Six blinded raters assessed subject facial photos at baseline, one month, and three months post-biopsy to evaluate for a visualized scar.

Results: The non-invasive measurements were able to detect significant changes after treatment in a variety of parameters, including improvements in skin surface, a decrease in attenuation coefficient at 3 weeks (p<0.05), and an increase in blood flow 0.5mm to 0.7mm deep during the 5 day- to 3 week-period following treatment. (p<0.05). Microbiopsy analysis revealed an increase in epidermal hyaluronic acid expression assessed by immunostaining and increased expression of inflammatory genes IL-1 beta at seven days post-treatment compared to untreated or three months post-treatment. No subjects exhibited scar formation post-biopsy. There was no visible evidence at the biopsy site seven days after the procedure, and OCT imaging showed a complete closing of the column created by the biopsy punch approximately 48 hours post-biopsy. At both one-month and three-months post-biopsy, six blinded photography reviewers were unable to determine whether a scar was present based on statistical analysis.
Conclusions: Non-invasive imaging successfully provides objective measurements of skin structure, texture, and blood flow to assess the effectiveness of facial skin rejuvenation treatments. Furthermore, microbiopsies can objectively evaluate the effects of these treatments at molecular level without scarring or pain. A single treatment with the 1470nm/2940nm laser significantly improved skin appearance at three weeks following treatments without significant changes in the tissue at the molecular level, as assessed by microbiopsy.

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Dedicated High-resolution Maxillo-facial Computed Tomography In Determining The Operative Management Of Facial Trauma Patients: Is It Necessary?

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Introduction: Computed tomography (CT) has become invaluable in the diagnosis of craniofacial pathology. For trauma patients, CT head (CTH) scans obtained to assess for intracranial injury may reveal facial fractures. Patients without simultaneous CT maxillofacial (CTMF) scans often undergo additional imaging to fully characterize the injury, increasing exposure to ionizing radiation. The aim of this study was to assess differences in fracture detection between the two scans and, more importantly, whether obtaining CTMF in addition to CTH would change management decisions.

Methods: A retrospective chart review of all patients presenting with facial trauma between January 2009 to May 2019. CTH and CTMF scans were reviewed. Demographics, injury mechanism were collected. Fractures detected by CTH and CTMF scans were identified, and operative status was determined by radiographic criteria. Fractures were categorized as skull, frontal sinus, and midface (orbital, nasal, naso-orbito-ethmoid, zygoma, and maxilla). Mandible fractures were not assessed as they are not reliably captured by CTH. Differences in the fractures identified by each scan were compared to determine if management changed as a result. Univariate analysis was performed using a paired-samples t-test and a Chi square test.

Results: Data are reported from 899 patients. Patients were predominantly male (75.3%) with median age 39.8-years-old. The most common mechanisms of injury were motor vehicle accident (35.9%), fall (21.8%), motorcycle accident (9.7%), and pedestrian struck (9.0%). The most commonly identified fractures involved the orbit, nasal bones, and maxilla. CTMF detected a total of 960 more midface fractures ($p<0.001$) than CTH. Specifically significantly greater numbers of all midface fracture types were detected with CTH ($p<0.001$). Additionally, CTMF identified 21 more frontal sinus fractures ($p=0.001$) No significant difference was seen in skull fractures. Change in operative status occurred in 27.3% of cases.

Conclusion: This study represents the largest direct comparison of CTH and CTMF in identifying facial fractures. CTMF is unsurprisingly superior in identifying all facial fractures, especially those of the orbit, nasal bones, and maxilla. This difference results in meaningful change in management. Serious consideration should be given to obtaining CTMF scans concurrently with CTH in facial trauma patients to prevent delay in diagnosis and reduce overall radiation dose.

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Clinical Practice Patterns And Evidence-based Medicine In Cleft Palate Repair: A Sixteen-year Review Of Maintenance Of Certification Tracer Data From The American Board Of Plastic Surgery

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Purpose: As a component of the Maintenance of Certification (MOC) process from 2003 to 2019, the American Board of Plastic Surgery (ABPS) tracked 20 common plastic surgery operations, or tracer procedures. By evaluating the data collected over 16 years, we are able to examine the practice patterns of pediatric/craniofacial surgeons in the United States.

Methods: Cumulative data for the tracer procedure on primary cleft palate repair that had been accumulated since 2003 were reviewed as of April, 2014 and September, 2019. To assess points covered by evidence-based medicine articles, cleft palate Evidence-Based Medicine (EBM) articles