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**PURPOSE:** The transpalpebral “eyelid” approach is a novel alternative to the traditional incisions for supraorbital frontal craniotomy and access to the anterior cranial fossa. Using the natural skin folds of the eyelid, the transpalpebral incision mitigates visible scars to improve postoperative esthetic outcomes. Although this type of approach has been described in the neurosurgery literature, this is the first report of such a surgical technique in the plastic and reconstructive surgery literature for accessing the anterior cranial fossa. Herein, we elucidate our unique surgical technique and results for this approach to the anterior cranial fossa.

**METHODS:** A retrospective review was performed of patients who underwent supraorbital frontal craniotomy using an anterior skull base approach with transpalpebral exposure over 7 years by a single plastic surgeon (D.A.S.). Surgical techniques, medical comorbidities, intraoperative complications, and long-term complications were assessed. Pre- and postoperative imaging were evaluated.

**RESULTS:** Nineteen patients (mean age, 52 ± 12 years, 52% male, 48% female) underwent supraorbital frontal craniotomy using an anterior skull base approach with upper transpalpebral exposure. In terms of operative indications, 80% (15) had anterior communicating aneurysms with a mean aneurysm size of 5.36 ± 1.91 mm, 10% (2) had meningiomas, 5% (1) had a dural fistula, and 5% (1) had an orbital hemangioma. Notably, 58% (11) had a smoking history. No intraoperative complications were encountered, and no cases were converted to traditional open approaches. Mean length of hospital stay was 3.3 ± 1.5 days. Postoperative imaging revealed no residual or recurrent aneurysms, meningiomas, fistulas, or hemangiomas. Mean follow-up time was 47.1 ± 28.4 months. Long-term complications were limited to 2 patients requiring reoperation for esthetic considerations related to palpable hardware with no further sequelae. Specifically, 1 patient had removal of right cranial hardware and cranioplasty with bone paste and temporalis muscle flap advancement, and 1 patient had removal of left cranial hardware and cranioplasty with bone cement. No long-term neurologic complications or infections occurred.

**CONCLUSION:** In conclusion, this transpalpebral technique is an excellent, minimally invasive, and innovative alternative to approach lesions of the anterior cranial fossa. This transpalpebral approach provides dissection in well-defined anatomical planes, affords preservation of the frontalis muscle, avoids injury to the facial nerve branches, and yields superior esthetic outcomes to traditional craniotomy incisions. Furthermore, this novel approach does not limit neurosurgical access or results and led to no neurosurgical complications.

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**The Zygomaticosphenoidal Angle: A Reference for Surgical Navigation in Zygomaticomaxillary Complex Fracture Repair**

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**BACKGROUND:** Alignment of the zygomaticosphenoid (ZS) suture is fundamental to reduction of zygomaticomaxillary complex (ZMC) fractures.\(^1\)\(^2\) Lateral displacement and anteroposterior impaction of the anterior segment must be corrected. Furthermore, to prevent a rotational deformity, the correct angle of the zygoma relative to the cranial base must be restored. Clinically, this can be a challenge, especially when there is comminution of the ZS suture. The purpose of this study was to define normative values for a ZS angle. These data may be used as a reference in conjunction with stereotactic navigation to achieve anatomic orientation of the anterior fracture segment in ZMC fracture reduction. Normative data of this angle could be used in bilateral fractures, and if constant across laterality, patient-specific data could be used as a guide in unilateral injuries.

**METHODS AND MATERIALS:** A single-center retrospective analysis of 100 patients was designed to determine normative ZS angle values. Computed tomography (CT) data of patients with isolated mandibular fractures were used to select for a craniofacial trauma demographic with available CT and intact midface skeletal anatomy. An angle subtended by the midline and a best fit line through the ZS on axial CT was measured bilaterally. The mean value of this measurement for 3 vertically adjacent cuts was calculated with the position of central cut determined by the equator of the globe and trigone of the sphenoid. Measurements and assessment of cuts were performed and verified by 2 investigators to ensure consensus. Demographic data including age, sex, and ethnicity were collected for comparison.

**RESULTS:** The mean ZS angle was 47° (range, 39°–55°). Ninety-seven percent of angles were within 2 SDs (8°) of the mean. Subgroup analysis demonstrated no significant difference of ZS angle across age (\(P = 0.74\)) or sex (\(P = 0.89\)). White patients (45.60°) were found to have more acute ZS angles than black (47.73°; \(P = 0.02\)) or Hispanic (47.45°; \(P = 0.04\)) patients. For each angle, the...
variation across the 3 sample cuts was ≤4.5° in all cases. Patients demonstrated high fidelity of ZS angle bilaterally with a mean difference of 3°.

CONCLUSIONS: The ZS angle is a useful reference, in conjunction with stereotactic navigation, for anatomic reduction of ZMC fractures. Contralaterally obtained patient-specific data may be used to guide unilateral repair. Normative values may serve as reference in bilateral injury.

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Conformity of 3-dimensional Surgical Plans With Actual Results: A Comparison of Virtual Surgical Planning Accuracy Between 5 Different Craniofacial Procedures

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BACKGROUND/PURPOSE: Virtual surgical planning (VSP) is a powerful tool for facial and reconstructive indications in plastic surgery. The purpose of this study is to compare the virtual plan to the actual postoperative result in 5 procedural categories using VSP performed by a single surgeon. We hypothesize that implant cranioplasty will be most conforming and mandibular distraction the least.

METHODS: Stereolithography formats were obtained and reviewed for the plan and the postoperative computed tomography (CT) from patients in 5 categories: implant cranioplasty (I), cranioplasty for craniostenosis (C), orthognathic surgery (O), mandibular reconstruction (M), and mandibular distraction (D). Digital renderings were imported and analyzed using Mimics (Materialise, Leuven, Belgium), volumetric overlays, and linear data. Each category cohort was then compared and stratified. Statistics included analysis of variance testing in SPSS statistical software package (Version 25; IBM, Armonk, N.Y.). Post hoc Bonferroni comparison was carried out for groups that displayed significant variance.

RESULTS: One hundred twenty-four patients (59 orthognathic, 16 mandibular reconstruction, 32 cranioplasty for craniostenosis, 8 implant cranioplasty, and 9 mandibular distraction) with completed VSPs and postoperative CT scans were identified. Average volume discrepancies (%) in each group were the following: I = 6.16 ± 2.5; M = 14.41 ± 11.4; C = 44.1 ± 13.8; O = 20.8 ± 6.2; D = 52.4 ± 25.2. Implant cranioplasty was found to be significantly more conforming when compared to cranioplasty for craniostenosis (P = 1.03E-14), orthognathic surgery (P = 6.98E-18), and mandibular distraction (P = 1.13E-12).

CONCLUSION: Conformity between VSP and actual postoperative result is greatest for implant cranioplasty and least for mandibular distraction. To our knowledge, this is the first study comparing the use of VSP across multiple surgical procedures in the craniofacial realm all performed by one surgeon. Despite imperfect conformity between VSPs and postoperative CTs in all categories, clinical endpoints were universally excellent, indicating that successful reconstruction still relies on a subjective aspect dictated by the comprehensive experience and artistic judgment of the surgeon. Future research directions include the use of this and similar analyses to develop models for process improvement in VSP.

Comparison of Different Surgical Specialties Performing Ablative Resection and Reconstruction of Cutaneous Malignancies of the Head and Neck in 1,901 Patients

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PURPOSE: Despite continued advocacy for primary prevention, skin cancer remains the most common malignancy