currently lack of consensus about the type of surgical repair performed. Most surgical techniques involve excisional otoplasty to achieve normal ear anatomy. However, this traditional approach can lead to further ear deformity and a visible scar. The purpose of this article is to describe our surgical approach, which corrects the 5 distinct problems associated with a Stahl’s ear deformity while avoiding a visible scar and other new deformities.

METHODS: Retrospective review of 4 surgical cases utilizing this new technique performed by 2 surgeons at 2 separate surgery locations with operative outcomes reviewed for each case.

TECHNIQUE: Our otoplasty technique involves an open degloving approach similar to an open rhinoplasty technique with cartilage reshaping maneuvers to create a normal contoured ear while avoiding new deformities and obvious scarring. Principles of the technique involve: (1) Release of abnormal intrinsic muscle causing third crus deformity; (2) Longitudinal cartilage scoring of the concaved surface of the third crus; (3) Placement of concha cartilage strut graft to posterior concave surface of third crus in a transverse orientation; (4) Anterior cartilage scoring with Mustardé sutures for creating superior crus and treating upper pole prominence.

RESULTS: These 4 surgical cases show a normal ear anatomy postoperatively with no recurrence noted and a pleasing aesthetic result.

DISCUSSION: Since Stahl’s ear is a rare deformity, few surgeons give it much thought on how to repair it surgically. Most surgeons and textbooks advocate a cartilage excision technique, which can lead to more anatomical deformities and a visible scar. There are 5 main characteristics of Stahl’s deformity, which require correcting: (1) abnormal third crus; (2) missing superior crus; (3) loss of helical rim contour; (4) widened scapha that is convex; (5) superior pole prominence. Most surgeons address 3 features of the Stahl’s ear deformity and rarely all 5 issues are treated successfully. Our technique aims to treat all 5 features leading to the optimal aesthetic result.

CONCLUSION: Understanding the variations in severity of some ear deformities can help avoid complications. Our technique of an open degloving otoplasty for cartilage reshaping that addresses all 5 features of the deformity is an ideal procedure for a Stahl’s ear repair.

Racial Disparity of Crouzon Syndrome in Skull and Orbit Morphology, and Their Spatial Relationships

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BACKGROUND: Racial disparity in pathological consequences in skull and orbit growth may impact the treatment plan for different patient populations. This study explores skull anatomy for potential differences between Asian and Caucasian cranial morphology in Crouzon syndrome.

METHOD: Ninety-one computed tomographic scans were included (Asian Crouzon, n = 12; Asian controls, n = 22; Caucasian Crouzon, n = 16; Caucasian controls, n = 41), and measured using Mimics and 3-matics software. Unique cephalometric measurements related to the orbit were designed.

RESULTS: The entire cranial base length was reduced 11.92 mm (P = 0.004) in Asian Crouzon patients, and 14.58 mm (P < 0.001) in Caucasian Crouzon patients, compared with respective controls. The cranial base angle on the facial side of basicranium was more narrowed in Crouzon syndrome in both races, with similar changes of degrees (9.61°, P = 0.002, in Asian Crouzon; 9.20°; P = 0.019, in Caucasian Crouzon). However, the intracranial side was statistically more narrowed only in the Asian group (9.86°; P = 0.003). Both Asian and Caucasian Crouzon patients developed reduced posterior fossa volume, by 15% (P = 0.034) and 17% (P = 0.004), respectively. However, Caucasian Crouzon patients developed a more shortened anterior and middle cranial base than that of Asian patients. The separation of lateral pterygoids was only significantly increased in Asian group (9.86°; P = 0.003). Both Asian and Caucasian Crouzon patients developed a more shortened anterior and middle cranial base than that of Asian patients. The separation of lateral pterygoids was only significantly increased in Caucasian patients (5.49°; P < 0.001). The orbital roof anteroposterior length of Caucasian Crouzon syndrome patients was shortened by 4.03 mm (P = 0.009) compared with Caucasian controls. However, this dimension in Asian patients developed normally. The orbital anteroposterior floor length significantly reduced in both Asian and
Caucasian Crouzon syndrome patients, to a similar extent. The medial horizontal angle of single orbit was narrower in Asian patients, compared with Asian controls (19.24°; \(P = 0.002\)), yet only insignificantly reduced in Caucasian patients. The visual axes of Caucasian Crouzon syndrome patients had more inferior rotation, by 5.21° (\(P = 0.005\)) than in Caucasian controls but did not achieve a statistically significant difference in other comparison pairs. A widened ethmoid sinus is the major shortening in the restricted orbit cone angle in Asian Crouzon syndrome patients, while statistically significant widening of the sphenoid is noted only in Caucasian patients.

CONCLUSION: The influence of Crouzon syndrome on cranial and orbital malformation is race influenced. Asian Crouzon patients developed more kyphotic basi-cranium evaluated intracranially, whereas Caucasian Crouzon patients developed more widened lateral pterygoid bones. The unaffected orbital roof length and shortened orbital floor in Asian Crouzon syndrome patients indicates the Lefort III osteotomy probably is more beneficial in this group of patients than in monobloc advancement.

The Use of Periorbital Steroids to Reduce Postoperative Swelling in Fronto-orbital Advancement: An Analysis of Outcomes

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PURPOSE: Marked facial swelling is a known consequence following fronto-orbital advancement (FOA), which can result in prolonged eye closure, patient discomfort, and postoperative hospitalization. There are limited reports on the efficacy and safety of periorbital steroids to help reduce facial swelling in craniofacial surgery, which has become standard practice at some centers. The purpose of this study is to compare outcomes with and without the use of periorbital steroids in patients undergoing FOA.

METHODS: A retrospective chart review of patients who underwent FOA at Seattle Children’s Hospital between January 2012 and December 2019 was completed. All procedures were performed by 2 senior surgeons (R.A.H. and C.B.B.) in conjunction with a pediatric neurosurgeon. All patients received pre-, intra-, and postoperative care via a standardized clinical care pathway. In the periorbital steroid cohort, triamcinolone was administered as an injection into the subcutaneous tissues or soaked in gelfoam and placed in the frontal/periorbital region before closure of the scalp. Statistical significance between outcomes measures was determined using a 2-tailed unpaired Student’s \(t\) test or chi-square test as appropriate.

RESULTS: A total of 167 patients were included in this study (80 control, 87 periorbital steroid). The majority of these patients underwent FOA for isolated metopic synostosis (52.1%) followed by multisuture synostosis (23.9%) and isolated unicoronal synostosis (18%). 15.6% of patients had craniosynostosis as part of a diagnosed craniofacial syndrome. The average postoperative length of stay following FOA was 4.3 ± 2.0 days. Criteria for discharge including adequate PO intake, appropriate pain control, removal of the surgical drain, and improvement in facial swelling with opening of at least 1 eye. The use of periorbital steroids resulted in a statistically significant decrease in the hospital length of stay (LOS) compared with controls for isolated metopic (12.5 hours; \(P = 0.031\)) and unicoronal (12 hours; \(P = 0.015\)) craniosynostosis; there was no statistically significant difference in LOS for multisuture craniosynostosis (5.2 hours; \(P = 0.329\)). There was a significantly higher rate of surgical site infection in patients who received periorbital steroids compared to controls (10.2% versus 2.5%; \(P = 0.041\)). All of these complications represented scalp wound infections requiring operative intervention. Ninety-one percent of patients required hospital readmission with an average LOS of 17.6 days and 36% required subsequent revision cranioplasty. There was no association between specific suture involvement, craniofacial syndrome, or age at FOA with infectious complications.

CONCLUSIONS: The use of periorbital steroids has been reported in the literature to reduce facial swelling and shorten convalescence following FOA. This study demonstrates that there is a statistically significant decrease in hospital LOS with the use of periorbital steroids in isolated suture craniosynostosis. However, it is associated with a significantly higher rate of infectious complications requiring operative intervention, extended hospital readmissions, prolonged antibiotic therapy, and secondary reconstruction.