Factors Associated with Delayed Presentation of Patients with Craniosynostosis

Michelle G. Roy,1,2 Han Zhuang Beh,1,2 Andrew M. Ferry,1,2 Rami P. Dibbs,1,2 Edward P. Buchanan,1,2 Laura A. Monson1,2

1Division of Plastic Surgery, Michael E. DeBakey Department of Surgery, Baylor College of Medicine, Houston, TX, 2Division of Plastic Surgery, Department of Surgery, Texas Children’s Hospital, Houston, TX.

Background

- Craniosynostosis is a rare condition characterized by cranial deformities that occur secondary to premature fusion of the cranial sutures
- Some procedures, such as endoscopic strip craniectomy with post-operative helmeting, are time sensitive as their efficacy wanes as the calvarium becomes more rigid with age. Generally, this procedure is performed prior to 6 months of age.
- Should patients not undergo this procedure by 6 months of age, there may be surgical correction using more invasive techniques to correct their deformity.
- The purpose of this study is to identify risk factors for delayed presentation to craniofacial clinics that would obviate certain surgical options for patients.

Methods

- Retrospective chart review was performed
  - Study Period: November 2011-September 2018
  - Inclusion: Patients with non-syndromic craniosynostosis who were surgically naïve
  - Exclusion: Patients with a diagnosis of craniosynostosis-associated syndrome
  - Patients were stratified into delayed and non-delayed presentation cohorts and comparative analysis was performed.
  - Delayed Presentation: ≥ 6 months-of-age
- Variables analyzed included were related to patient/family demographics, family structure, adoption status, health insurance, and past medical history

Results

- Figure 1. Statistically significant differences observed between patients with delayed and timely presentation. Race (A), Insurance type (B), Comorbid Conditions (C), Developmental Abnormalities (D), and Signs of Elevated Intracranial Pressure at Primary Visit.

Discussion

- Delayed presentation of patients with non-syndromic craniosynostosis occurs frequently with minority patients. Additionally, patients with Medicaid insurance coverage are particularly at risk.
- Lack of timely care in delayed patients may explain additional neurologic sequelae.
- More studies are needed to explain why certain patient demographics are particularly at risk for presenting in delayed fashion and to develop strategies to improve outreach to these patients.

References