

Sagittal Craniectomy with Biparietal Morcellation: Outcome Analysis of Age at Surgery and Extended Techniques

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ABSTRACT

Sagittal craniosynostosis is a cranial anomaly treated with surgical intervention that can vary with timing and invasiveness. Although significant differences in protocol exist, current literature indicates that best outcomes result from suturectomy procedures performed before 6 months of age. For infants 6 months or older, the options for intervention may be considered “more invasive”. The purpose of our study is to evaluate outcomes in children with sagittal craniosynostosis treated at Children’s Hospital Colorado (CHC) who underwent sagittal strip craniectomy with biparietal morcellation (SSCBM) with no post-operative helmeting. Our aim is to investigate SSCBM as an acceptable alternative for infants up to 1 year of age at time of surgery. Outcomes in cephalic index (CI), a ratio of maximum cranial width over maximum cranial length, are acquired using the 3dMD imaging system, analyzed with Vectra software, and compared to normal values at 6 month and 1 year post-operative time points. The association between age at surgery and change in CI was assessed using a linear model. Results of this study will provide more information about the efficacy and timing of SSCBM without helmeting in the treatment of sagittal craniosynostosis in patients up to 1 year of age at time of surgery.