

Project title:

Patient-centered analysis of endoscopic craniectomy with post-operative orthotic therapy

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Research Project Description

Craniosynostosis is the premature fusion of one or more sutures of the calvarium. This can be an isolated event or part of a craniofacial syndrome. Over 150 years ago, Virchow first described the pathophysiology of this process: the suture that is fused restricts growth in the perpendicular direction, thus forcing expansion in the opposite direction and dictating the shape of the skull (47). Since this first description, there have been competing theories regarding the cause of early fusion. Longaker and coworkers (50,51) proposed that the etiology was more likely multifactorial with disruptions in the regulation of growth factors that are known to modify the interaction between the dura and overlying suture. Sagittal craniosynostosis is the most common form of the non-syndromic synostoses.

Explore and examine multiple barriers to the diagnosis of the deformity, including limited physician and patient knowledge of the diagnosis of craniosynostosis and limited access to specialized care. We also believe there may be challenges associated with the helmet therapy for families, including attendance of all required postoperative visits with the orthotist for ongoing helmet adjustments. Our objectives are to identify these barriers, present possible solutions, and create a patient-centered treatment protocol that can be established at our institution and at other treatment centers