



Using Bioabsorbable Fixation Systems in the Treatment of Pediatric Skull Deformities Leads to Good Outcomes and Low Morbidity

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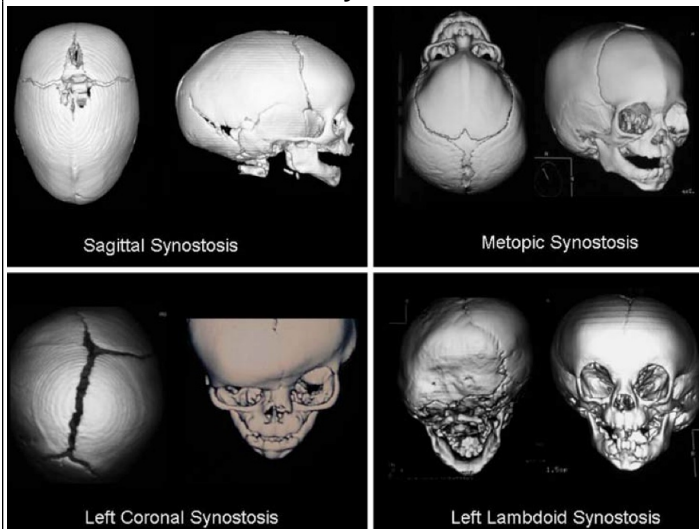
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Introduction

Bioabsorbable fixation systems have been widely employed for use in pediatric patients for cranial reconstruction, obviating the complications of hardware migration and imaging artifact occurring with metallic implants. Recent concern over complications unique to bioabsorbable materials, such as inflammatory reaction and incomplete resorption, necessitates additional conclusive studies to further validate their use in pediatric craniofacial surgery. Likewise, no study to date has looked specifically at the use of these materials in children under two years of age.

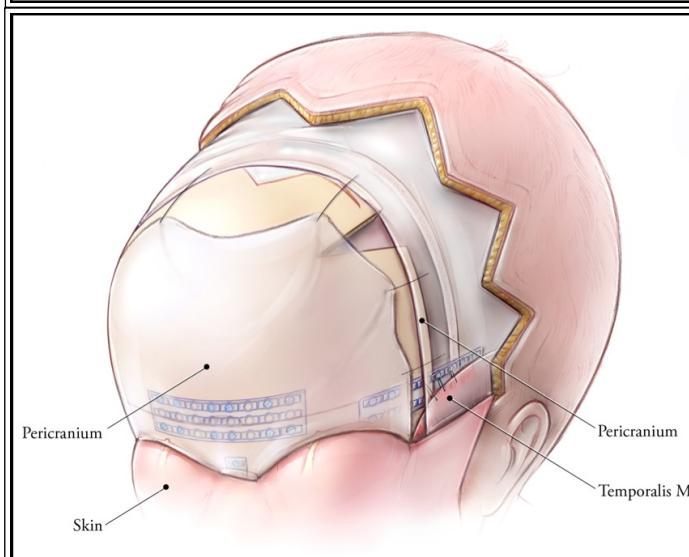
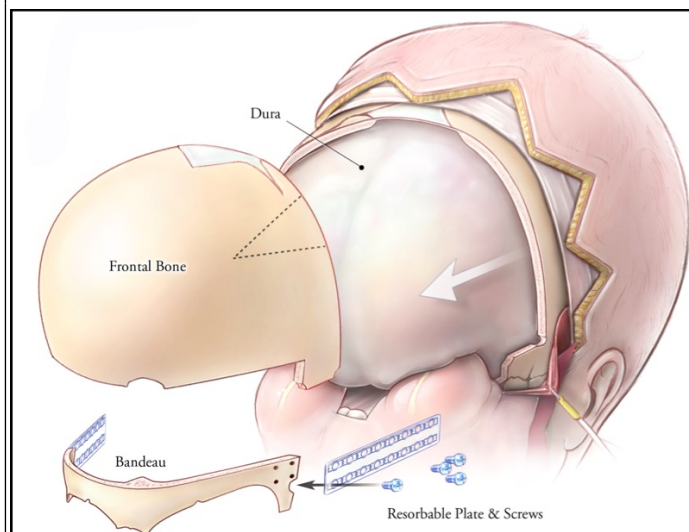
Craniosynostosis



Methods

We included consecutive pediatric patients under the age of two, from Lucile Packard Children's Hospital, who underwent cranial vault reconstruction with the use of bioabsorbable fixation system (Synthes-RapidSorb) between 2003-2010. Hospital records were queried for patient characteristics, intra-operative data, and post-operative complications.

Fronto-Orbital Advancement



Results

98 patients with the following pre-operative pathology were analyzed: craniosynostosis (89), cloverleaf skull (4), frontonasal dysplasia (1), frontonasal encephalocele (1), and removal of a neurofibroma (2) or nasal dermoid (1). Median age was six months. Average case duration was 206 min, with median 156 mL blood loss. 94% of patients had 1-4 plates implanted with 45% receiving 3 plates. The average number of screws used was 60. The average length of hospital stay was five days with an average follow up of 21 months (five post-operative visits). 91% of all cases had no complications. The complications related to hardware implantation included inflammatory reaction (1%) and broken hardware (1%), the latter of which required reoperation.

Conclusions

The bioabsorbable fixation system for cranial vault reconstruction in children less than two years of age is safe with tolerable morbidity rates.

Learning Objectives

To evaluate the outcomes for children receiving bioabsorbable implants for cranial vault reconstruction.

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