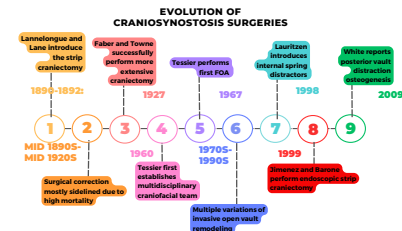


INTRODUCTION

- Since the inception of craniofacial surgery, the surgical correction of craniosynostosis has evolved in a cyclical nature.
- Techniques once abandoned for their morbidity and mortality have resurfaced, albeit modernized and refined. Newer techniques involving less invasive operations have been developed.

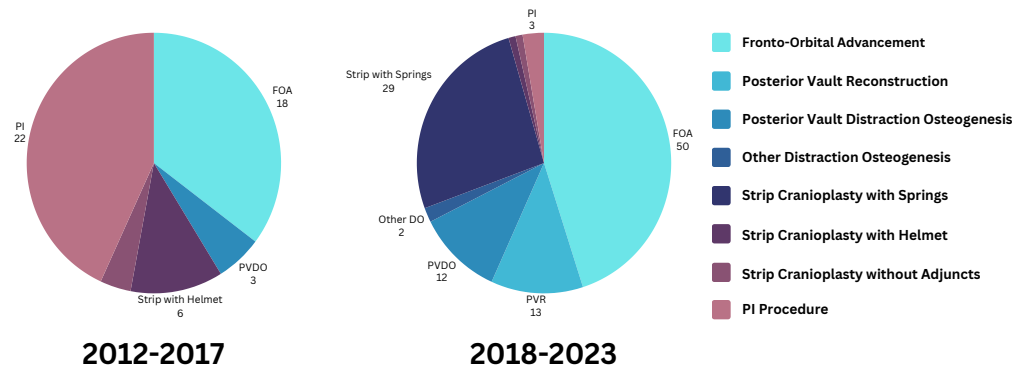


AIM

- This study provides an overview on the history of craniosynostosis and evolution of its surgical correction.
- Document the evolution of craniosynostosis care over an 11-year period at one academic institution and record the outcomes associated with the implementation of evidence-based surgical techniques and protocols.

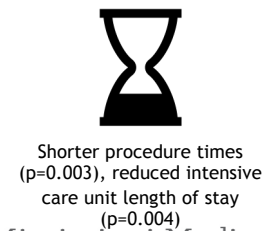
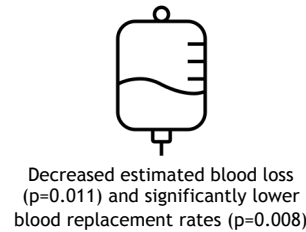
Evolution of Craniosynostosis Care at a Single Institution Over an 11 Year Period

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RESULTS

Spring cranioplasties and their respective protocols were correlated with:



Part of University of Mississippi Medical Center

METHODS

- Patient demographics, operative details, and postoperative courses were collected for patients who received surgical cranial vault remodeling for craniosynostosis at the authors' institution.
- Primary outcomes include estimated blood loss (EBL), blood replacement volumes, length of procedure, length of intensive care unit (ICU) stay, and morphine milliequivalents (MME) given during inpatient stay.
- Chi square tests and independent t-tests were utilized to determine significance (0.05).

RESULTS

- One hundred sixty-eight patients were included. Total vault remodeling, the most common procedure from 2012 - 2017, was performed at a significantly lower rate in 2018 - 2023. Spring assisted cranioplasties accounted for 0% of cases in 2012-2017 and rose to 22.4% of total cranioplasties in 2018 - 2023. Frontal orbital advancement remained a popular choice throughout the examined period accounting for 35.3% of cranioplasties from 2012 - 2017 and 38.8% of cranioplasties from 2018 - 2023. Spring assisted cranioplasties correlated with decreased EBL ($p=0.011$), lower blood replacement rates ($p=0.008$), shorter procedure times ($p=0.003$), reduced intensive care unit length of stay ($p=0.004$), and lower morphine equivalents given per admission ($p=0.002$) compared to traditional techniques.

CONCLUSIONS

- The landscape of craniosynostosis care has evolved considerably over the last decade. This study provides insight into how surgical care for craniosynostosis is adapting to new evidence-based studies and technologies, emphasizing the importance of continuous review and adaptation of treatment protocols.



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