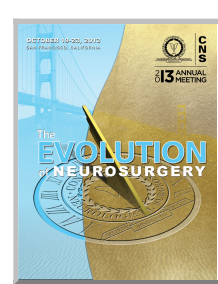


# Symptomatic Recurrence Following the Open Surgical Repair of Nonsyndromic Craniosynostosis: A Sixteen Year Experience

Corey M Mossop; Gary Rogers MD; Michael Boyajian; John S. Myseros MD; Robert F. Keating MD



## Introduction

Recurrence following the open repair of craniosynostosis is a known event that has been described since 1974. However, the prevalence of this complication is poorly reported in the literature. The purpose of this study is to report the prevalence of symptomatic resynostosis following the repair of nonsyndromic craniosynostosis and elucidate any factors associated with this outcome over a sixteen year time period.

## Methods

All nonsyndromic patients undergoing open surgical repair of craniosynostosis between 1997 and 2012 were identified. This population was then examined for symptomatic resynostosis requiring correction in addition to associated factors (such as gender, age at initial surgery, and affected cranial suture[s]). Patients requiring reoperation for other cosmetic issues (such as persistent cranial defects) were not included.

## Results

257 patients with nonsyndromic craniosynostosis underwent surgical repair at a mean age of 10.9 months (2.2-82.9 months). Fourteen (5.4%) patients required further surgery at an average age of 35.4 months (16.6-93.1 months) for a combination of clinical, cosmetic, radiographic, and ophthalmologic evidence of resynostosis. The average length of time between the initial procedure and subsequent reoperation was 29.0 months (11.6-69.5 months). Patients with bicoronal synostosis were significantly more likely to experience recurrent synostosis ( $p < 0.05$ ). Additionally, all patients requiring reoperation had an acceptable cosmetic outcome (defined as a Whitaker Class I or II result) with an average follow-up of 6.2 years in this cohort.

## Learning Objectives

- \*To appreciate factors involved with restenosis of primary craniosynostosis
- \*To recognize the need for long-term follow-up of primary craniosynostosis patients
- \*To recognize the signs and symptoms of intracranial hypertension in the postoperative craniofacial patient

## References

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## Conclusions

This study of recurrence following open surgical repair of nonsyndromic craniosynostosis represents the largest to date. The prevalence in this study of 5.4% is consistent with prior reports. Given the prolonged time interval between initial surgery and recurrence, long-term surveillance for symptomatic resynostosis up to a decade post-operatively should be highly encouraged. Additionally, parents of patients with nonsyndromic bicoronal synostosis should be informed regarding the increased risk of symptomatic recurrence in this population.