BIORESORBABLE OSTEOSYNTHESIS FOR RECONSTRUCTIVE SURGERY OF CRANIOSYNOSTOSIS: A COMPARATIVE STUDY BETWEEN ABSORBABLE SUTURES AND A RESORBABLE PLATING SYSTEM

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INTRODUCTION

- **Favorable properties of bioresorbable osteosynthesis materials include: i) sufficient rigidity**
  ii) stability
  iii) biocompatibility
  iv) simple handling
  v) complete uneventful elimination

- **Their implementation is widely adopted in pediatric craniofacial surgery.**

OBJECTIVE

This study was conducted to evaluate and compare the effectiveness of the Polyglactin 910 absorbable sutures and the Poly L-lactide-co-glycolide resorbable fixation system, in two study groups divided according to the material used (50 patients each), in children undergoing open cranial vault reconstruction for craniosynostosis correction.

RESULTS

Tab. 1. Patient demographic characteristics and their osteosynthesis-related complications among the two study groups.

Variable	Polyglactin 910 Absorbable Sutures	Poly L-lactide-co-glycolide Resorbable Plating System
Average Age at Surgery (months)	8,5	8,7
Average Surgical Time (minutes)	186,5	191,3
Average Follow-up Time (months)	36,8	36,9
Stability Complications (type + number of patients)	Dislocation of Bone Fragments - 2	-
Healing Process Complications (type + number of patients)	-	Wound Infection - 1 Inflammatory Skin Reaction - 2

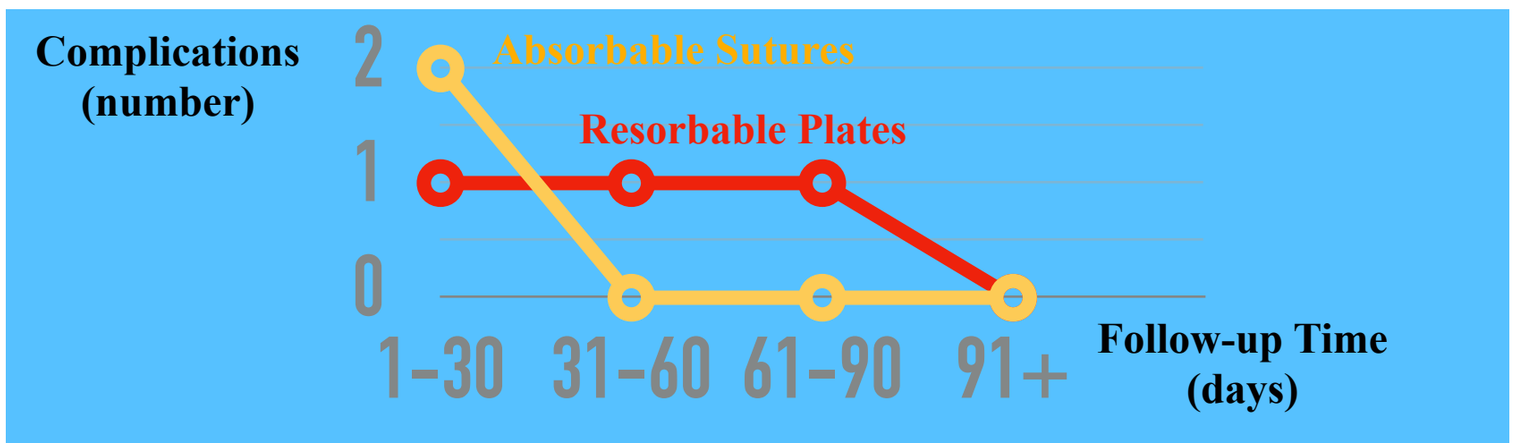


Fig. 1. Number of osteosynthesis-related complications among the two study groups, and their occurrence timeframe after surgery.

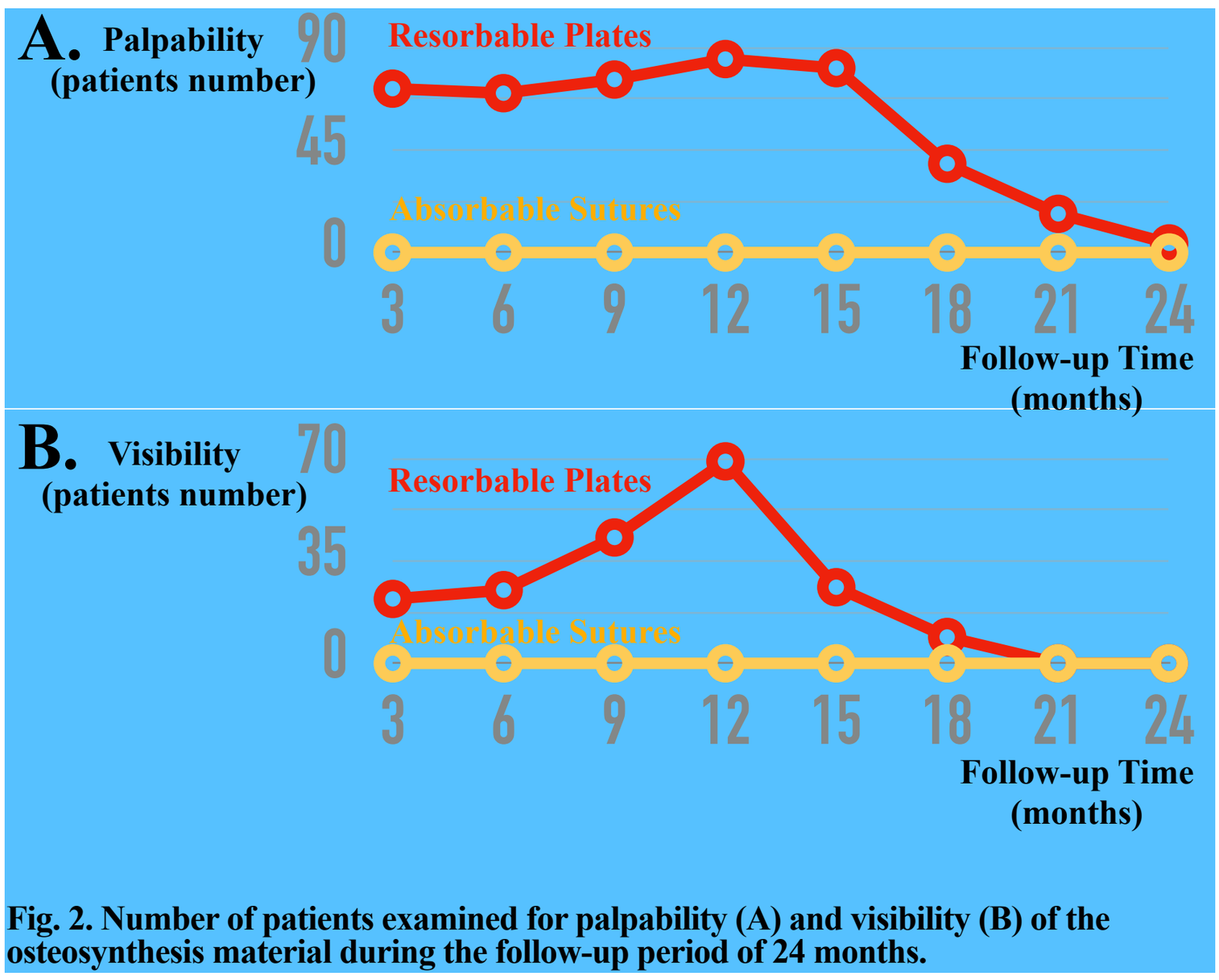
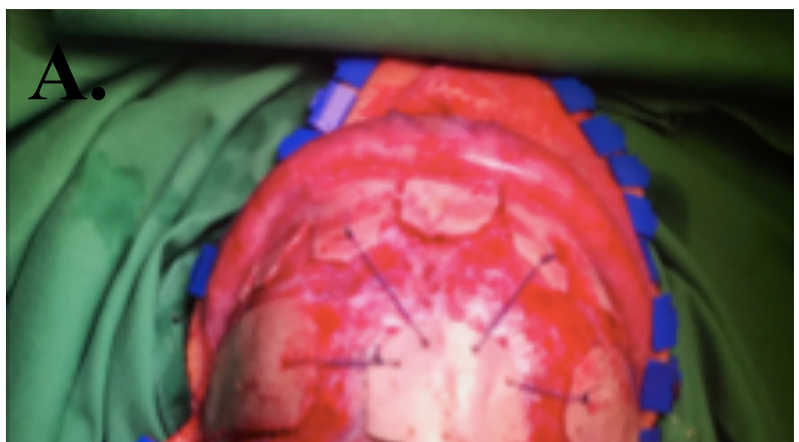


Fig. 2. Number of patients examined for palpability (A) and visibility (B) of the osteosynthesis material during the follow-up period of 24 months.



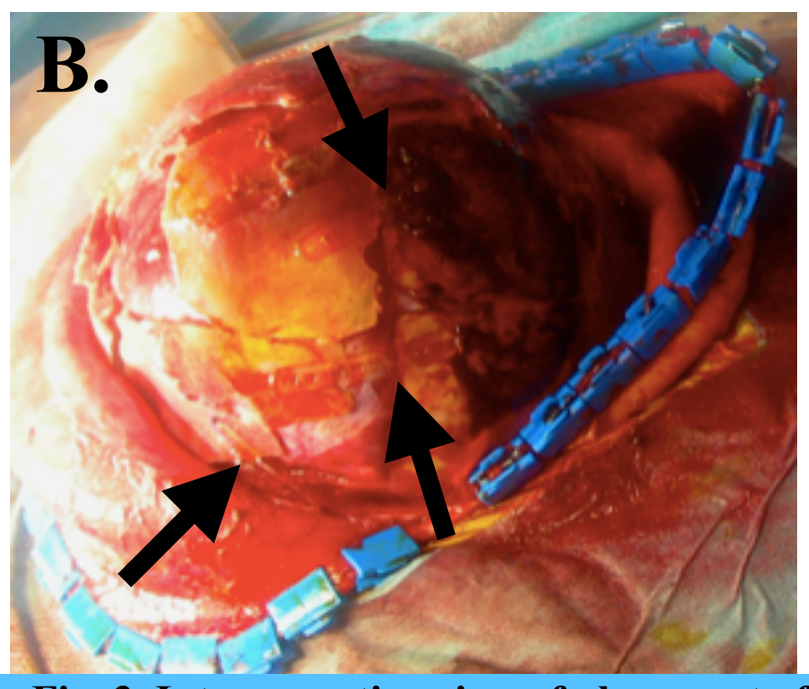


Fig. 3. Intraoperative view of placement of absorbable sutures (A), and resorbable plates (B) for osteosynthesis of bone fragments during open cranial vault reconstruction.

CONCLUSION

- **In our series, the Poly L-lactide-co-glycolide resorbable fixation system demonstrated superior stability, but inferior wound healing process compared to the Polyglactin 910 suture material.**

- **With an overall minimal complication rate, both resorbable osteosynthesis materials provided an effective and well-tolerated fixation method, supporting their routine use in pediatric craniofacial surgery.**

The author declares no conflicts of interest related to this study.