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Cranioplasty with prefabricated Polymethyl-methacrylate implant after decompressive craniectomy. Case report and literature review.

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Objective

Publicize this work protocol to manufacture the implant before surgery, reducing surgical time and improving the aesthetic result.

Introduction

We present a male patient after a decompressive craniectomy, currently with a defect on the left temporal region.

Discussion

The benefits for the patient are mainly aesthetic, in addition to brain protection. The materials for the manufacture of the implant are diverse, however, PMMA offers advantages for its manufacture at low cost compared to other materials.

3D CT

Preoperative | Posoperative

Treatment

A prototype is made based on a computer-designed stereolithographic model. The implant is made of PMMA using the prototype as a model. The implant fixed with miniplates is placed.

Conclusion

Preoperative fabrication of the PMMA implant considerably reduces complications related to exothermic reaction. This material offers characteristics such as resistance, aesthetics, low cost and accessibility in the manufacture of the implant.

References

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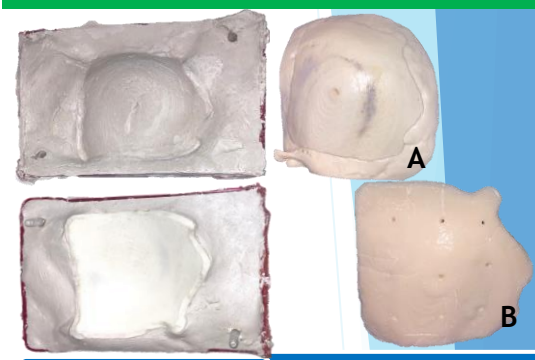
3.- Leão RS, Maior JRS, Lemos CAA, Vasconcelos BCE, Montes MAJ, Pellizzer EP et al. Complications with PMMA compared with other materials used in cranioplasty: a systematic review and meta-analysis Braz. Oral Res. 2018;32:e31

Implant fabrication



Manufacturing | A. Prototype 3D Printed B. PMMA implant

Literature review

Polymethylmethacrylate cranioplasty is a widely performed maxillofacial procedure with good cosmetic results and few implant-related complications when performed at the right time and with the right techniques.

Surgery

Bone defect | Application of PMMA implant

Clinical photographs

Preoperative | Posoperative

Declaration of conflict of interest

The authors declare no conflict of interest