

## A new option for the reconstruction of orbital floor defects with heterologous cortical bone

### ABSTRACT

The orbital floor is one of the most frequently injured areas of the maxillofacial skeleton during facial trauma and blow-out fractures are the most frequent consequences of maxillofacial trauma.

The aim of the management of orbital fractures is to stabilize and reconstruct the orbital wall, while repairing orbital soft tissues. Autogenous, allogenic or alloplastic materials have been used to replace the damaged bone sites, each with its own advantages and disadvantages. In this study, the Authors present their experience with heterologous cortical bone for the treatment of orbital floor fractures and discuss the potential advantages and disadvantages of this alloplastic material. Twenty-one patients (16 men and 5 women; mean age 33 years; range 9-57) with a traumatic orbital floor underwent reconstruction with heterologous cortical bone. A laminar, cortical, equine bone graft (OsteoBiol® *Lamina*, Tecnos®, Giaveno, Italy) with dimensions of 35 x 35 x 1 mm was used. The lamina was hydrated in sterile physiological solution and was later shaped according to the template with sterile scissors until the desired size and shape. As highlighted by the Authors, the main advantages of this material are the optimal integration to surrounding tissues and its use in rather wide fractures. Moreover, it is slightly radiopaque, which means that it can be visualized radiographically. All patients underwent clinical and radiological follow-up examinations at 1, 3, 6 and 12 months. Computed tomographic scans were taken at the postoperative 6th month, and at the first postoperative year if needed.

None of the patients showed impaired visual acuity preoperatively or post-operatively and all patients had a negative intraoperative forced duction test demonstrating free globe movement. There was no graft extrusion, resorption or displacement during the follow-up period.

### CONCLUSIONS

According to the results, equine-derived heterologous laminar cortical bone grafts can be easily used and are also safe and efficient. As stated by the Authors *"equine-derived heterologous laminar cortical bone grafts are a good alternative for the reconstruction of blowout fractures due to their plasticity and biocompatible structure. Without donor area morbidity, it is a safe and appropriate heterologous bone graft material for maxillofacial applications such as orbital floor reconstruction. Its use in near-total and total orbital floor defects should be avoided as it is not indicated for use in load-bearing circumstances"*. The Authors declare that they have no conflicts of interest.

### MAXILLOFACIAL

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