Customized Orbital Floor Soft Tissue Retractor

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Abstract For the correction of blow out fractures of the orbit, the retraction of orbital floor contents are necessary. We are here in presenting a customized orbital floor soft tissue retractor to overcome the disadvantages of the conventional Rows orbital floor retractor.

Keywords Blow out fracture · Orbital floor retraction · Spoon retractor · Rows orbital floor retractor · Customized orbital floor soft tissue retractor

Introduction

Mackenzie first described orbital floor fracture in 1844 [1]. Smith and Regan first coined the term “blow-out” fracture [2]. 57.4 % orbital floor fracture occur from zygomaticomaxillary complex fracture injuries out of which 21.4 % represents isolated blow out fracture [3]. Many autogenous and alloplastic materials are used to reconstruct the orbital floor [4, 5]. The retraction upwards of the orbital contents is mandatory to view the orbital floor fracture. Controlled force is required to retract the orbital content to avoid oculocardiac reflex. The aim of this paper is to introduce a customized

orbital floor soft tissue retractor (Rai, Magarkar, Datarkar modification).

Modification

We recommend the use of stainless steel customized orbital floor retractor (Fig. 1) having a slender blade to avoid damage to the soft tissue of orbit, which can easily slide under the orbital periosteum, it also has a short mouldable handle for better adaptation to the orbital floor. Short handle offers an advantage of controlled force which can be applied to the orbital soft tissue for a longer time. The conventionally used orbital retractors do not give any clue to the extent of retraction into the orbit. Hence a need of calibrated retractor was felt, the present retractor has got calibrations at 0–30 mm with markings at 5 mm apart. It offers the advantages of effectiveness, simplicity and low cost. Its dimensions seem to be appropriate for most adult patients (Fig. 2).

Discussion

Kazuhiko Kyoshima et al. [6] had designed a spoon retractor for removing a soft mass in cases of brain tumors. The retractors have flexible shaft and main part is like eggshell and concave in shape, with sizes varying from 5 mm to 4 cm in width. Honig JF and Jackson IT [7] had used a simple teaspoon retractor for exposure of the orbital floor but it was not calibrated, the present customized retractor has calibration of 5 mm distance which is an advantage of modified retractor.

Rowe and Williams [8] stated the use of Rows orbital floor retractor, its disadvantage is its long handle due to

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Fig. 1 Customized orbital floor soft tissue retractor with “RAI et al.” modification

Fig. 2 Photograph showing orbital soft tissue retraction with customized retractor

which surgeon can sometimes lose control over the instrument and its conical edge can cause damage to the orbital soft tissue. Owing to its sturdy make, it is not mouldable but some time a surgeon required to adjust the retractor according to the site of fracture which is feasible in case of modified retractor. There are important anatomical structures like inferior orbital fissure, optic nerve, posterior ethmoidal artery which lies in the posterior region

at varying distances, in such cases an attempt to retract the orbital soft tissue to expose the floor, one can cause damage to these structures if the retractors are not calibrated.

Stassen and Kerawala [9] mentioned the use of orbital copper malleable retractor for orbital floor soft tissue retraction, the advantage of this flat length malleable retractor is that it can be bent to the desired direction. But it is not being calibrated and if greater force is applied it comes to its original position that causes difficulty in retraction and loses accessibility.

Conclusion

To conclude, customized orbital floor retractor (of Rai, Magarkar, Datarkar modification) has got the advantages over other retractors used for orbital floor soft tissue retraction. It has calibrations of 5 mm distance. It is simple and easy to use and prevents vital structure from injury. Moreover, economically it is easily affordable by the surgeons.

Conflict of interest None

References

1. Ng P, Chu C, Young N, Soo M (1996) Imaging of orbital floor fractures. *Australas Radiol* 40(3):264–268
2. Smith B, Regan WF Jr (1957) Blow-out fracture of the orbit; mechanism and correction of internal orbital fracture. *Am J Ophthalmol* 44(6):733–739
3. Seberer M, Sullivan WG, Smith DJ Jr (1989) An analysis of 1423 Facial fractures in 788 patients at an urban trauma center. *J Trauma* 29:388
4. Kelly CP, Cohen AJ, Yavuzer R, Jackson IT (2005) Cranial bone grafting for orbital reconstruction: is it still the best? *J Craniofac Surg* 16:181–185
5. Ioannis L, Nadia TL, Angelos A (2001) Use of membrane and bone grafts in the reconstruction of orbital fractures. *Oral Surg Oral Med Oral Pathol Oral Radiol Endod* 91:281–286
6. Kyoshima K et al (2000) Spoon retractors for soft mass. *J Clin Neurosci* 7(4):328–329
7. Honig JF, Jackson IT (1994) A simple teaspoon retractor for exposure of the orbital floor. *J Oral Maxillofac Surg* 52(9):992–993
8. Rowe N, Williams J (1994) Rowe and Williams maxillofacial injuries, vol 1. Churchill Livingstone, London, p 564
9. Booth PW (ed) (2007) Maxillofacial surgery, vol 1. Elsevier, Amsterdam, p 218