

Another brick in the wall

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Key words: Bone cement, dystopia, orbital fracture, polymethyl methacrylate

Case

A 35-year-old male patient presented with loss of vision in the left eye following road traffic accident 1 year back. The patient had undergone left orbital floor reconstruction by a

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team of plastic surgeons elsewhere. On examination, his visual acuity was 6/6; N6 in the right eye and no light perception in the left. Facial asymmetry was present with left hyperglobus, enophthalmos, restricted ocular motility in all gazes, and retraction of the left lower eyelid [Fig. 1]. Fundus examination revealed left optic nerve head avulsion. Computerized tomography scans revealed a large, solid, hyper-dense mass on the floor of the left orbit displacing the globe superiorly. The left inferior rectus was not identified separately. Plates and screws were seen in the anterior walls of the maxilla and zygoma bilaterally [Fig. 2]. On review of his surgical notes, the material filling the left orbit was found to be bone cement. The patient was counseled about removal of the same but he refused further intervention.

Discussion

Bone cement is used to anchor artificial joints filling the free space between the prosthesis and the bone to absorb the forces acting on the joints. Chemically, it consists of polymethyl methacrylate, which undergoes an exothermic polymerization process and reaches temperatures of around 82°C–86°C. To

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Figure 1: Clinical picture of patient in nine cardinal positions of gaze Above: Worm's hole view showing enophthalmos of the left orbit

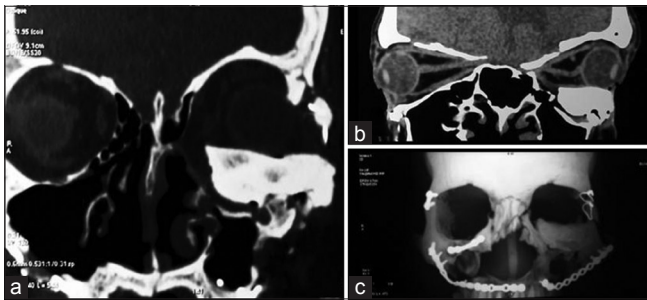


Figure 2: (a) Coronal computerized tomography scan showing a hyperdense mass on the left orbital floor, (b) reconstructed parasagittal CT scan showing inferiorly displaced left orbital floor fracture fragment into maxillary sinus with the mass extending from rim beyond the mid-orbit level pushing the globe superiorly, (c) 3D reconstructed CT scan showing plates and screws placed in both anterior walls of the maxilla; right inferior orbital rim and bilateral fronto-zygomatic sutures

keep the temperature low, the cement coating should not exceed 5 mm in thickness.^[1] Bone cement is also a significant cause of morbidity due to bone cement implantation syndrome, characterized by hypoxia, hypotension, and/or unexpected loss of consciousness.^[2] Precise knowledge about the side effects and toxicity of bone cement is of vital importance for non-orbital surgeons who attempt to manage orbital fractures. Hydroxyapatite cement, on the other hand, is biocompatible and can be safely used in the orbit as an inlay implant to improve volume deficit in secondary reconstructions.^[3] However, its use is limited in its application due to availability and cost.

Conclusion

In view of easy availability of a wide variety of reliable orbital implants, it is preferable not to use materials without any perceivable advantage.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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Nil.

Conflicts of interest

There are no conflicts of interest.

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