

Short communication

Intraconal orbital displacement of a dental implant treated with an endoscopically-assisted approach[☆]G. Bocchialini^{a,*}, S. Negrini^a, A. Bolzoni Villaret^b, L. Pianta^b^a Maxillo-Facial Surgery Unit, Asst Spedali Civili – Brescia, Italy^b Department of Otorhinolaryngology, University of Brescia, Asst Spedali Civili – Brescia, Italy

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Abstract

Foreign bodies in the orbit are uncommon, and dental intraconal displacement is even more rare. We aim to present and discuss what is to our knowledge the first case and its management. A 55-year-old woman had a dental implant placed in the upper right maxilla, but during the procedure it was displaced into the orbit. It was removed reliably and safely through an enlarged endoscopic medial maxillectomy.

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Introduction

Prosthetic implant rehabilitation is one of the most common dental procedures, and rarely involves serious complications.¹ However, the accidental displacement of dental implants can occur, and the most common areas of displacement include the maxillary,² ethmoid, and sphenoid sinuses, the nose, and anterior cranial fossa.^{3–5} To the best of our knowledge, there are no previously reported cases of dental implants being displaced into the orbital intraconal compartment.⁶ We aim to present and discuss the aetiology and management of such a rare case.

Case report

A 55-year-old woman was referred by her dentist to the department of maxillofacial surgery, ASST Civil Hospital, Brescia, Italy. During the same afternoon, she had had several dental implants placed in the upper right maxilla. During the procedure, one of the implants was displaced into the sinus, after which the anterior wall of the maxillary sinus was opened to remove it. Unfortunately, the dental practitioner was not able to see or remove the implant. The patient was therefore referred to the hospital for orthopantomography, which showed the implant, but not in an optimal view. A computed tomographic (CT) scan was done and showed that the implant had completely migrated 2 cm into the intraconal compartment of the right orbit. It was located between the posterior ocular globe, the inferior rectum, and the medial rectum, laterally to, and in contact with, the optic nerve. Superiorly, the apex of the implant was adjacent to the intraorbital vessels (Figs. 1 and 2).

The patient did not experience any visual loss or diplopia. She had limited movement of the eye muscles, and some pain and scotoma during ocular examination. The course

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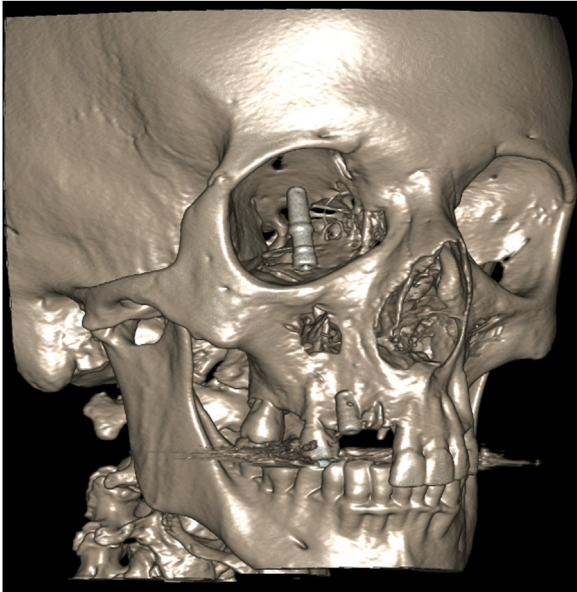


Fig. 1. Preoperative three-dimensional computed tomogram.



Fig. 2. Preoperative computed tomogram.

of treatment was planned in cooperation with the otolaryngology department, with the goal of removing the implant endoscopically to prevent infection or damage to the optic nerve.

Under general anaesthesia with orotracheal intubation, we did an antrostomy, ethmoidectomy, frontal tenotomy, and sphenoidotomy. After endoscopic inspection of the maxillary sinus, the proximal end of the implant was identified and deemed unremovable with a conservative approach. We did an enlarged endoscopic medial maxillectomy with a nasolacrimal duct resection, and removed the medial portion of the orbital floor and the lower portion of the papyrus lamina (Fig. 3). This approach made it possible to progressively mobilise the implant and extract it with no intraconal bleeding. The postoperative course was uneventful, and she was discharged after two days.

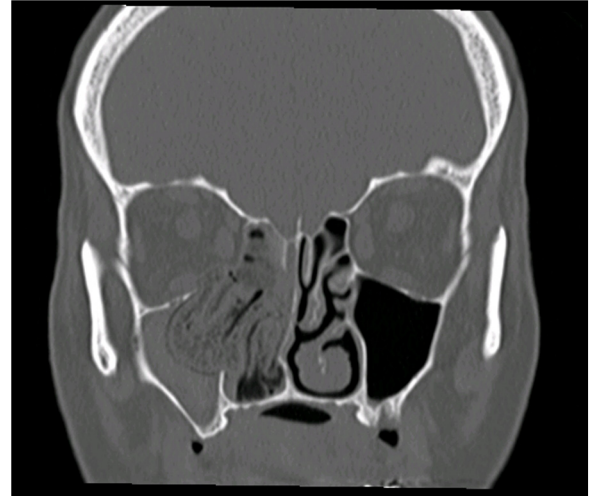


Fig. 3. Postoperative computed tomogram.

Discussion and conclusion

Displacement of dental implants has been reported and can lead to serious complications such as sinusitis, rhinorrhoea, and oroantral fistulae.⁵ In the last two decades, minimally-invasive endoscopic surgery has been developed for various indications in the craniomaxillofacial area.¹ Endoscopy is an important aid for the removal of foreign bodies, such as implants from the paranasal sinus, because it allows clear visualisation of the surgical field with minimal morbidity and reduced recovery time for the patient.⁷ It also minimises trauma in the orbit and lowers the risk of complications such as damage to the optic nerve or muscles.⁸ In this case, an additional factor was the risk of retrobulbar haematoma because of the location of the displaced implant. In our opinion, open access in this case would have been an additional risk because of the possible movement of the dental implants — the real challenge was to remove the implant without causing further migration into the intraconal compartment.

Conflict of interest

We have no conflicts of interest.

Ethics statement/confirmation of patients' permission

Not applicable.

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