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Short communication

Orbitomaxillary mass after repair of the orbital floor

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Abstract

A 48-year-old man presented with an orbitomaxillary mass 31 years after repair of the orbital floor. He gave a history of progressive diplopia and paraesthesiae of the right infraorbital nerve. He also noted improvement in his long-standing post-traumatic enophthalmos. Imaging showed a large orbitomaxillary cystic mass, which was thought to be secondary to a silicone implant. The implant and the cystic mass were removed, and the orbital floor was reconstructed with titanium mesh. Histological examination confirmed an inclusion cyst. Maxillary antral lesions can present with symptoms such as sinusitis, paraesthesiae, diplopia, and orofacial pain, and they may arise from the lining of the sinus, or from surrounding structures such as the orbit, nose, or maxilla. This was a late complication of silicone elastomeric implants, and there are alternative treatments for defects of the orbital floor.
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Introduction

Lesions of the maxillary sinus can result in sinusitis, paraesthesiae, and ocular symptoms, and the sinus and its neighbouring structures must be carefully evaluated. A detailed history, including previous operations, may also shed light on the cause, as complications can develop many years after the initial intervention.

Case report

A 48-year-old man presented with a 6-week history of progressive diplopia, pain, and paraesthesia of the right cheek. He had also noted improvement of his pre-existing enophthalmos. He gave a history of a motorbike accident 31 years previously, which had resulted in a fracture of the right orbital floor and zygomatic complex and had been repaired with a silicone elastomeric implant and wire ligatures. Postoperatively he had had enophthalmos and diplopia, and the diplopia had improved during subsequent years.Initial imaging included an orthopantomogram and computed tomography (CT) (Fig. 1) which showed an orbitomaxillary mass with bony erosion adjacent to the silicone implant. The mass was well-circumscribed and homogeneous.

Magnetic resonance imaging (MRI) (Fig. 2) showed that the well-circumscribed lesion was projecting up into the orbit causing mild deformation of the globe, and down into the maxillary sinus where it was displacing the respiratory mucosa inferomedially. Contrast resulted in enhancement of a thin ring around the lesion, which suggested slow growth. There was no sign of perineural invasion or metastatic spread.

The mass was biopsied through a vestibular approach to the maxillary sinus. Macroscopically it was a thick walled cyst, and histopathological examination confirmed a surgical ciliated cyst with focal squamous metaplasia. The patient

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Fig. 1. Computed tomography of facial bones showing an extensive mass in the right orbit that has expanded inferiorly into the right maxillary sinus and posteriorly behind the globe. The coronal view shows the residual maxillary sinus.

reported that his diplopia improved and paraesthesia of the infraorbital nerve persisted after the biopsy.

We approached the lesion through subtarsal and intraoral incisions. The silicone implant was mobilised easily, and the cyst dissected and completely removed. The defect was repaired with preformed titanium mesh. Histological examination confirmed a benign inclusion cyst, probably secondary to the silicone implant, the lining of which was flattened epithelium with no nuclear atypia. It contained haemosiderin macrophages, mixed acute and chronic inflammatory cells, and ciliated respiratory epithelial cells.

Postoperatively his enophthalmos improved, but he had persistent infraorbital paraesthesiae. MRI at one month and six months' postoperatively showed no recurrence.

Discussion

There are several options available for the reconstruction of defects of the orbital floor, including autologous bone grafts, silicone elastomer, porous polyethylene, and titanium mesh. Silicone implants have been reported in the literature since 1977.[1] There have since been many reports of complications associated with them including infection, migration,[2,3] and orbitomaxillary communications.[4] Despite these, silicone remains readily available. Formation of cysts have not yet been well-documented.[5–7]

We have found reports of complications up to 13 years after implantation,[8,9] but we know of no report of an inclusion cyst that presented as late as 31 years (as this did).

Surgical inclusion cysts are benign, and form as a reaction to epidermal cells being implanted into deeper tissues. The histological picture in this case showed squamous epithelial cells and ciliated respiratory epithelium. These cells may have been deposited around the silicone implant during the initial injury or its repair. A fibrous tissue reaction around the

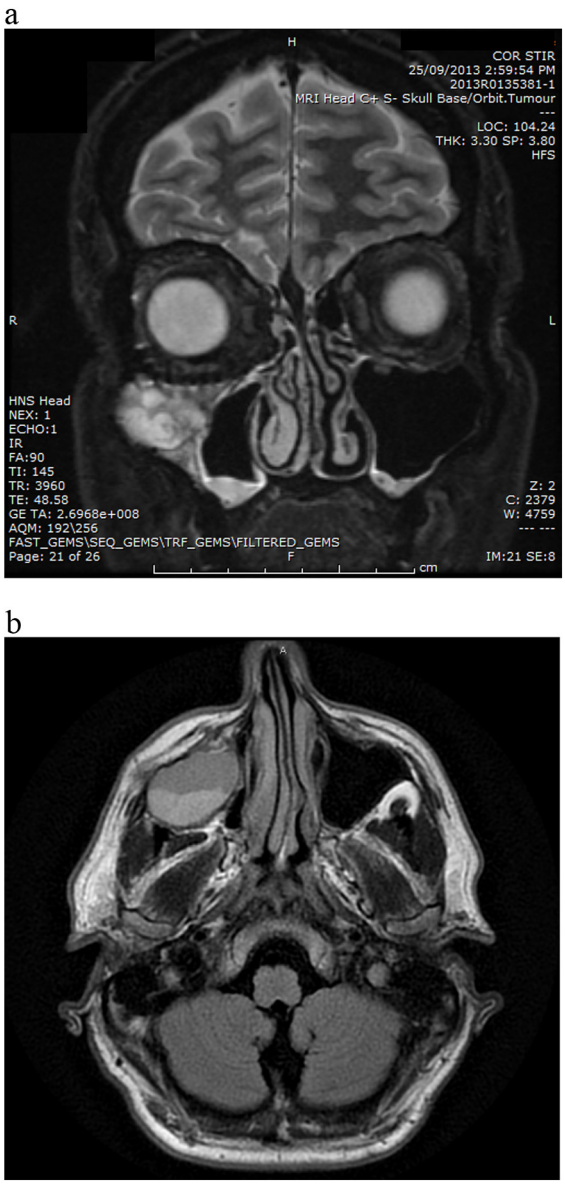

Fig. 2. Magnetic resonance image showing a well-demarcated lesion 35 x 35 x 35 mm that looks like a cyst; (a) coronal view, and (b) axial view.

silicone implant[7] may then have contributed to formation of the cyst.

As there are other materials available such as porous polyethylene and titanium mesh, silicone implants should be avoided in the reconstruction of orbital floor defects.[10] Silicone should always be considered as a cause of orbitomaxillary cysts, even when they present many years after implantation. Removal of these cysts is warranted as they can cause symptoms of pressure such as diplopia and paraesthesia of the infraorbital nerve.

Conflict of Interest

We have no conflict of interest.

Ethics statement/confirmation of patient's permission

The patient has not been identified.

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