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Sir,

An unusual late complication of orbital floor fracture repair

We read with interest the recent article by Vose *et al*[1] about an unusual late complication of orbital fracture. As mentioned in their article, complications associated with alloplastic implants are rare.[2] When complications occur years after the initial surgery, the new symptoms may not be immediately associated with the previous orbital floor fracture repair. We report here another case of unusual late complication of orbital floor fracture repaired 25 years ago.

Case report

A 69-year-old, previously fit female presented to the eye casualty with recurrent episodes of right lower lid swelling with purulent discharge (Figure 1). Visual acuities were normal, with no evidence of proptosis, chemosis, or ocular motility disturbance. She was treated as preseptal cellulitis with oral antibiotics. With each course of antibiotics, the cellulitis subsided but subsequently recurred with purulent discharge. After multiple casualty visits over a 6-month period, the possibility of a fistula was raised and referred to the oculoplastic clinic. On further questioning, the patient recalled right orbital floor fracture sustained during a road traffic accident 25 years ago, which was repaired with a silastic implant.

A computed tomography scan of the orbits and sinuses showed persistent defect in the right orbital floor. There was a displaced curvilinear intermediate-density structure lying freely in the right maxillary sinus, suggesting silastic implant. There was also complete opacification of the right maxillary sinus (Figure 2).

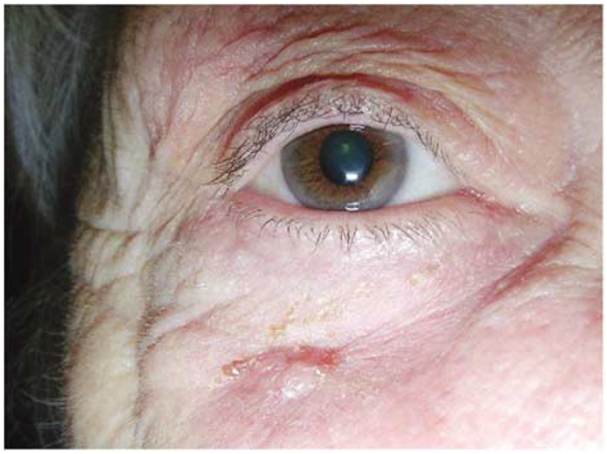

Figure 1 Right lower lid fistula.

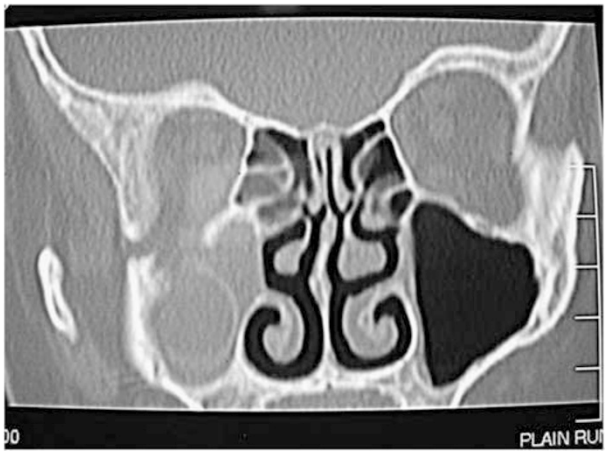

Figure 2 Coronal view of CT scan orbits and sinuses showing a defect in the right orbital floor and a curvilinear opacity of intermediate density lying freely in the right maxillary sinus. There is complete opacification of the maxillary sinus.

The case was managed on a multidisciplinary basis with the ear, nose, and throat surgeons. This was followed by removal of the displaced implant through an endonasal approach with washout of the maxillary sinus. The implant was sent for culture, which grew *Staphylococcus aureus*. At 3 months postoperatively, the patient was noted to have complete resolution of symptoms with healed fistula.

Comment

Orbital floor fractures are a common result of orbital injury. Recognized sequelae of orbital floor fractures include enophthalmos, diplopia from extraocular muscle dysfunction (entrapment, ischameia, haemorrhage, or nerve injury), and infraorbital nerve anaesthesia.[3]

A wide variety of materials including autogenous grafts and alloplastic implants (Silicone/Silastic/Supramid/Medpor) (Stryker UK Ltd, Newbury, UK) are used for orbital floor fractures. Displacement of the implant into the maxillary sinus is a rare complication and it occurred 25 years after the original procedure leading to persistent infection. While facial cellulitis is a condition that commonly presents itself to the eye casualty, it is important to be vigilant of potentially rare underlying causes of the infection and to take a careful ophthalmic and general medical history.

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Sir,

Nanophthalmology: new frontier in fighting blindness?

Nanophthalmology, an offshoot of nanotechnology, refers to highly specific ophthalmic intervention at the molecular scale. A nanometer is one-billionth of a meter, and it is at this size scale biological molecules and structures inside ocular cells operate. One near-term focus of nanophthalmology is drug delivery. FDA approval for nanophthalmology products has already been achieved. BioSante has developed a calcium phosphate-based nanoparticle platform for treatment of glaucoma. NUCRYST is marketing Silcryst, a burn and wound dressing based on nanocrystalline silver.[1]

The nanoparticles are found to be suitable as coating for living cells or artificial retinal implants to prevent immune response.[2] A silicon chip retinal implant developed by Second Sight make use of ultrananocrystalline diamond film that is reported to be safe, long-lasting, electrically insulating, and extremely tough.[3] Further, an NIH funded center is designing a class of nanodevices for generating electric power—nanobiobatteries—for an implantable artificial retina.[4]

With their onboard sensors, nanoscale materials and devices known as nanorobots will react to the same molecular signals that the immune system does, but with greater discrimination.[5] When an invading harmful virus or bacteria is identified, it can be punctured, letting its contents spill out and ending its effectiveness. If the contents were known to be hazardous by themselves, then the nanorobots could hold on to it long enough to dismantle it completely.[6] As the technology becomes more sophisticated, new types of 'nanosurgery' will be ultimately developed.[7]

Challenges

Manufacturing standards and quality control measures for nanomaterials are yet to evolve. Nanophthalmology also faces negative public perceptions about the possible toxic effects of nanoparticles.[8,9] Nanoparticles and technology still need to be proven safe towards human health and also to the environment.

To conclude, we are on the verge of a revolution in eyecare. Advances in computational capabilities, developments in nanodevices and remote