

## Orbit to jejunum- Story of travel of an ophthalmic instrument

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### Abstract

Rhino-orbital-cerebral mucormycosis, lead to a large necrotic areas in the orbit which in turn can result in exenteration of the orbit. Facial reconstruction is done using orbital prosthesis. Here, we report a case of 55 year old male patient, posted for osseointegrated prosthesis, who had an implant slipping into an unusual and unpredictable site.

**Keywords :** Mucormycosis, osseointegrated, exenteration.

### Introduction

Mucormycosis is a devastating, potentially lethal fungal infection caused by a group of moulds called mucormycetes.<sup>1</sup> Incidence of this infection rose sharply in India during the COVID-19 wave in 2021, leading to a surge of cases of rhino-orbital-cerebral mucormycosis (ROCM).<sup>2,3</sup>

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In case of extensive orbital and Central Nervous System (CNS) involvement including large necrotic areas in the orbit orbital exenteration, the most severe form of orbital debridement is performed. Following the devastating aftermath of SARS-CoV-2 and Mucormycosis infection, a huge burden of patients requiring a facial reconstruction is left behind.

The rehabilitative options for these patients include dispensing an orbital prosthesis. The orbital prosthesis can be mounted on a spectacle frame, or retained with an adhesive or could be an osseo-integrated variety where implants with magnetic properties are placed in the orbit and the silicone prosthesis is fit over it to allow an implant retained prosthesis. While the spectacle mounted prosthesis does not provide with a very satisfying cosmetic outcome, the stick-on prosthesis gives a good outcome, but it has its own limitations as the adhesive does not last for more than 4 hours. The osseointegrated prosthesis provides a good outcome but requires a longer period and multiple surgeries.

The fabrication and dispensing of osseointegrated prosthesis is carried out in three stages.

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Pre operatively, appropriate sites for implant placement over healthy bone are determined based on orbital computed tomography (CT) scans. In stage one of the process, implants are fixed over the orbital rim and covered with cover screws. In step two, the cover screws are replaced with abutment screws and in step 3 customised prosthesis is made and dispensed.<sup>4</sup> Here we will discuss an interesting and unpredicted intra operative complication of osseointegrated implant placement.

### **Case Report**

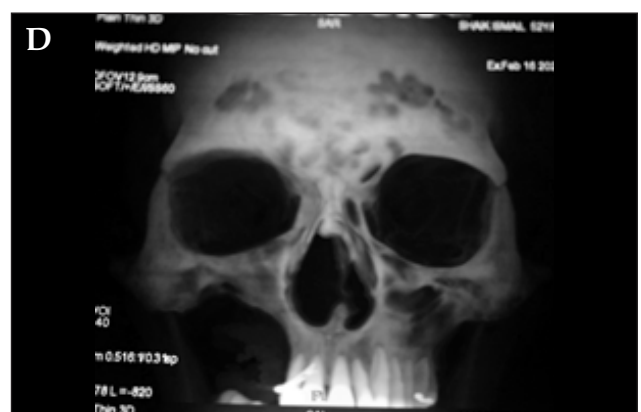
A 55-year-old male patient came to us with history of right-side rhino orbital mucormycosis post COVID 19 infection in April 2021. He underwent right orbital exenteration along with sinus debridement elsewhere and came to us for opinion for cosmetic rehabilitation. On examination, the right socket was exenterated and there was presence of a sino- orbital fistula which was also connected with the naso and oro-pharynx, Figure 1a, 1b and 1c. CT scan of the patient showed healthy orbital rim with deficient orbital floor posteriorly along with deficient anterior maxillary wall, Figure 1d.



*Figure 1a&b Exenterated right socket*



*Figure 1c: Endoscopic view of the orbit showing fistulas*



*Figure 1d: CT scan orbit connecting to the oro pharynx*

Patient was planned for Osseointegrated implant for right eye. During step one, Skin incision was given according to the pre-determined sites and periosteum reflected. Osteotomies were drilled over the orbital rim using a surgical guide and four implants fixed inside the osteotomies as shown in Figure 2a.



Figure 2a(representational): Step 1- Implant (arrow) being fixed in the osteotomy



Figure 2b(representational): Step 1- Cover screw(black arrow) being fixed into the implant

Cover screws were then placed over the implant and fixed to avoid growth of soft tissue over it and the skin was closed, Figure 2b. After 2 months, once the osseointegration was complete and the same was confirmed on CT scan, step 2 was planned.



Figure 2c(representational): Step 2- Cover screws being removed with the help of a Hex driver (black arrow)

Step 2 of the surgery was planned under local anaesthesia. During the step 2 surgery, the superior two abutment screws were removed using the Hex driver, Figure 2c. The third abutment screw was tightly fitted and, in an attempt to remove it, the driver slipped from the surgeon's grip and fell into the orbital fistula and disappeared in the pre-existing sino-orbital fistulous opening within seconds. An attempt was made to locate the driver but in vain. The patient was made to sit and gag reflex was elicited in an attempt to retrieve the driver which again failed. Laryngoscopy was performed by the anaesthetist to rule out passage of the driver into larynx. As the patient had no difficulty in breathing and there was no foreign body seen on laryngoscopy, it was suspected that the patient had swallowed the driver.

A diagnostic X ray was performed and the implant was seen in the lower oesophagus on X ray, Figure 3a. Following opinion of a gastroenterologist, a repeat X ray was performed and it revealed that the driver was in the epigastrium.

Patient was prepared for an upper GI endoscopy. Upper GI endoscopy was performed and the driver was located to be in the jejunum. It was removed using Rat tooth forceps, Figure 3b and 3c. Patient was doing alright after the procedure and discharged on the same day. Step two of the implant was then completed 2 days later. Prosthesis was prepared for the patient by taking measurements and dispensed.

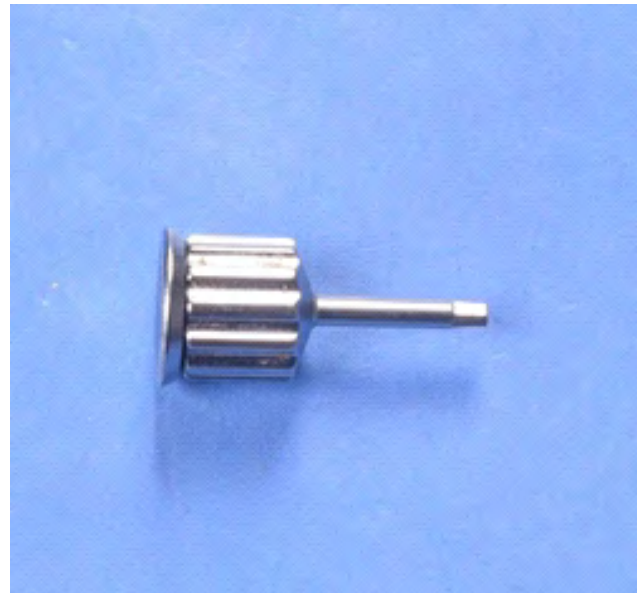


Fig 3c: Showing the Hex driver



Figure 3a: Showing X ray chest and abdomen showing presence of Driver inside the oesophagus

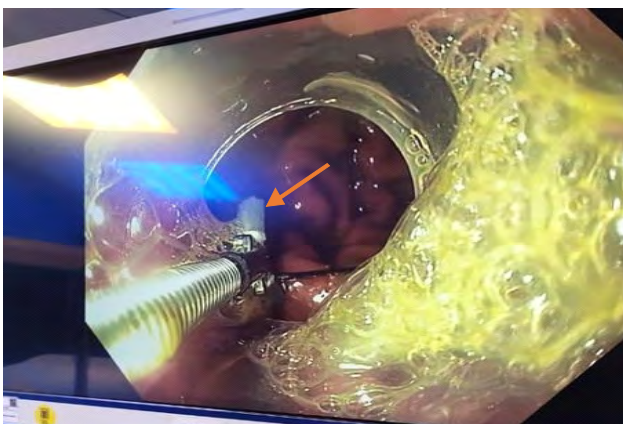


Figure 3b: Endoscopic view: Hex driver being removed using rat tooth forceps

### Discussion

The known complications of osseointegrated implants include cellulitis, skin reaction or peri-implant soft tissue inflammation, and osteonecrosis.<sup>(5)-(8)</sup> To the best of our knowledge, this the first reported case of such intra operative complication of osseointegrated prosthesis. The hex driver used to remove cover screws here was of dimensions of- 2.7x0.9 cm with a long pointed tip. It was surprising to note that the patient instantly swallowed an instrument of this size without discomfort.

To avoid such complications in future, it can be suggested that a gauze piece or eyepad be used to cover the orbital fistulas and to handle the instruments carefully.

### Conflict of interest:

None

### Financial Disclosure:

No financial interest

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