

## Maxillary sinusitis caused by the migration of a silastic implant used for an orbital floor reconstruction: a case report

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**Key-words.** Unilateral chronic maxillary sinusitis; foreign body, silastic; orbital floor repair

**Abstract.** *Maxillary sinusitis caused by the migration of a silastic implant used for an orbital floor reconstruction: a case report. Objective:* The authors report on a patient whose unilateral chronic maxillary sinusitis was caused by the migration of a silastic implant used for orbital floor repair.

*Case report:* A 32-year-old woman presented with a three-year history of right-sided maxillary discomfort that was associated with a purulent discharge. Her medical history included chronic allergic rhinitis and the placement of a silastic implant after a right orbital floor fracture at the age of 14. The silastic implant was then removed endoscopically in a right maxillary sinus meatotomy. The symptoms improved within three weeks after surgery.

*Conclusion:* Orbital implant migration is a rare cause of chronic unilateral sinusitis, and it must be suspected on the basis of a careful anamnesis, appropriate clinical examination, and sinus computed tomography. Misdiagnosing such a condition may increase patient morbidity by leading to inappropriate treatment.

### Background

Chronic maxillary sinusitis is a common pathology, affecting 33.7 million people each year in the USA.<sup>1</sup> Almost 5% of cases are induced by foreign bodies, including dental materials (particularly endodontic materials), dental implants, and other implants.<sup>1</sup> In this case report, we describe the clinical history of a patient presenting with chronic maxillary sinusitis caused by the migration of a silastic implant used for orbital floor reconstruction.

### Case report

A 32-year-old woman presented at the ENT consultation with a three-year history of right maxillary discomfort. This symptom was associated with a right-sided, chronic purulent discharge without cacosmia, occurring both anteriorly and postnasally. Her medical history

included chronic allergic rhinitis and a right orbital floor fracture at the age of 14. Before ENT consultation, she had completed three 10-day courses of amoxicillin and clavulanic acid (875 mg twice daily) associated with corticosteroids (32 mg of methylprednisolone once a day for five days and 16 mg once a day for the five following days), which brought only minimal improvement. Upon nasal endoscopy, a purulent discharge was observed in the right middle meatus, while the left side was clear. The remainder of the head and neck examination was normal (without scar, enophthalmia or V2 hypoesthesia). Sinus computed tomography (CT) confirmed the presence of right chronic maxillary sinusitis and revealed the presence of a potential foreign body (i.e., a vertical implant with higher density than the surrounding mucosa) (Figure 1). A dehiscence of the

right orbital floor was also noticed.

The patient underwent a right maxillary meatotomy, allowing removal of a silastic implant from the sinus (Figure 2). The patient did not experience any post-operative complications. By the third week after surgery, there had been a dramatic resolution of the symptoms, and the sinus cavity had healed well by the fifth week, without evidence of residual infection. After 18 months of follow-up, the patient was still free of symptoms, with a healthy right maxillary sinus as visualised by endoscopic examination through the meatotomy.

### Discussion

Unilateral chronic maxillary sinusitis is a common disease characterised by a feeling of discomfort or pressure in the maxillary area and frequently presenting with

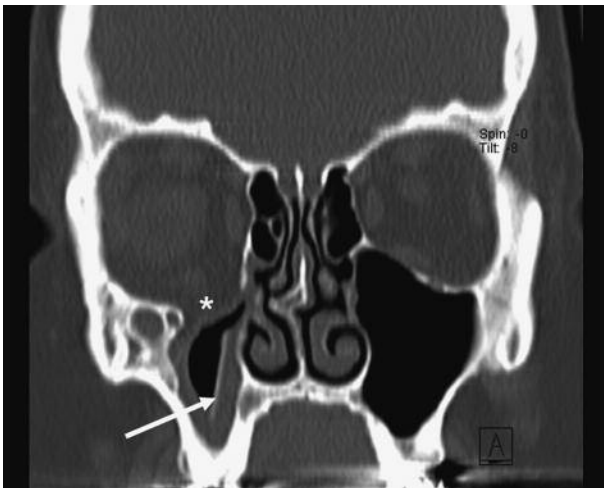


Figure 1

Coronal sinus CT confirmed the presence of right chronic maxillary sinusitis and revealed the presence of a foreign body (arrow) and septa/partitioning of the sinus. Dehiscence of the right orbital floor associated with right enophthalmia was also noticed (\*).

nasal congestion and purulent discharge.<sup>1,2</sup> Displaced implants are uncommon causes of unilateral chronic maxillary sinusitis.<sup>3-12</sup> The presence of a foreign body in the maxillary sinus was suggested by a previous history of orbital floor reconstruction and a sinus CT showing a vertical structure with a higher density than the surrounding mucosa. Tingsgaard and Larsen<sup>12</sup> reported the history of a patient presenting with chronic maxillary sinusitis caused by two silastic sponges left behind from former surgery for an orbital “blowout” fracture. Recently, Groombridge and McGuinness<sup>4</sup> described the case of a patient presenting with an orbital silastic sheet migrating into the nasal cavity. In our opinion, and as was confirmed by other surgeons at our institution, the endoscopic removal of dental filling materials, implants, or foreign bodies located in the maxillary sinus is much safer than the approach through the canine fossa in terms of the

risk of V2 hypo or paresthesia.<sup>5-8,13</sup> This latter method could be considered in particular cases of foreign bodies located in the anterior aspect of the maxillary sinus, making them inaccessible by endoscopy. Unilateral chronic maxillary sinusitis may be caused by other types of foreign bodies. Although dental filling materials and implants are the most frequently cited, the literature also contains reports of sinusitis caused by other foreign bodies, such as plastic tubes and surgical gauze.<sup>5-8</sup> To properly diagnose this rare clinical entity (i.e., metallic and non-metallic foreign bodies), the anamnesis must include a precise maxillofacial surgical and dental history.<sup>14</sup> The association of systematic nasofibroscope with sinus CT seems to be the best approach for the proper diagnosis of this rare complication.<sup>14</sup>

The migration of an orbital silastic implant could be a late complication and it has already been described up to 17 years

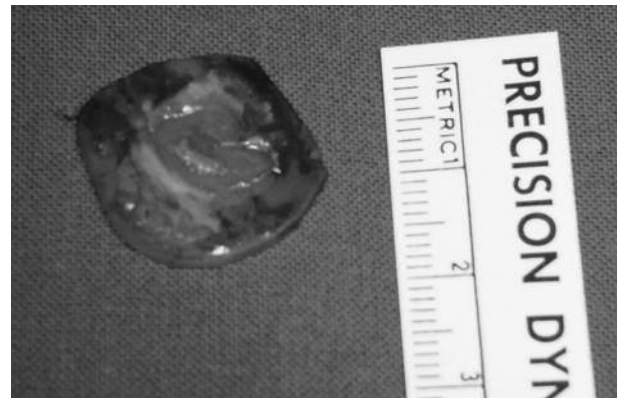


Figure 2

Silastic implant removed from the maxillary sinus

post-operatively.<sup>15</sup> Usually, the implant follows the path of least resistance towards the surgical entry side, towards the orbital wall defect,<sup>15</sup> or towards the maxillary sinus,<sup>4,12</sup> as in the present case. Some authors have reported that silicone implants induce a limited foreign body reaction that ultimately results in the formation of a fibrous pseudocapsule, isolating the implant from the surrounding tissue. Morrison and co-authors described the outcome of 311 silastic orbital implants over a 20-year period and observed that 16% of patients had their implants removed due to complications.<sup>15</sup> Silastic implants seem to carry a significant risk of complications, such as migration many years after surgery, and consideration should therefore be given to the use of other available materials (i.e., autologous grafts).<sup>15</sup>

## Conclusion

Foreign-body-induced chronic maxillary sinusitis is a rare complication, but it is often suggested by the patient’s medical history. Although this disease is frequently misdiagnosed and therefore mistreated, increasing patient

morbidity, surgical treatment quickly cures the disease. In the case of chronic maxillary sinusitis caused by a foreign body, FESS preceded by a sinus CT is an excellent approach, permitting both diagnosis and treatment with minimal surgical trauma.

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