

Silent sinus syndrome: CT and MRI findings

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DESCRIPTION

A 27-year-old man presented with a chief complaint of right eye enophthalmos. He had no visual symptoms and detailed ophthalmic examination showed a right-sided enophthalmos with hypoglobus, giving a sunken sulcus appearance to the right upper lid. The clinical picture was inferior displacement of orbital floor without recent history of orbital trauma. The patient also had no recent history of sinusitis.

A subsequent CT and MR scan of the orbits and sinuses confirmed right enophthalmos with the globe retracted inferiorly (figure 1). Retro-orbital structures were normal. Extensive generalised mucosal opacification with downward bowing of the roof of the right maxillary sinus was noted, which resulted in narrowing of the infundibulum (figure 2). All other sinuses were found to be normal. The radiological appearance was consistent with silent sinus syndrome.

Imaging reveals a fully developed but opacified maxillary sinus. Maxillary infundibular occlusion is seen secondary to lateral retraction of the uncinate process with subsequent apposition against the inferomedial aspect of the orbital wall. Although

the exact mechanism remains unclear, it is thought that the infundibular occlusion leads to gas resorption and negative pressure formation. The occlusion also causes build-up of mucous within the sinus. The retained mucous causes a low-grade inflammatory reaction and osteolysis of the sinus walls, which are then pulled inward by the negative pressure.¹

Learning points

- ▶ Silent sinus syndrome is characterised by painless enophthalmos associated with involution of the maxillary sinus after infundibular occlusion.
- ▶ It is well recognised among otorhinolaryngologists and ophthalmologists but remains relatively unknown among radiologists.
- ▶ Patients commonly present with painless facial asymmetry with no history of orbital trauma. Maxillary sinusitis may or may not be present.

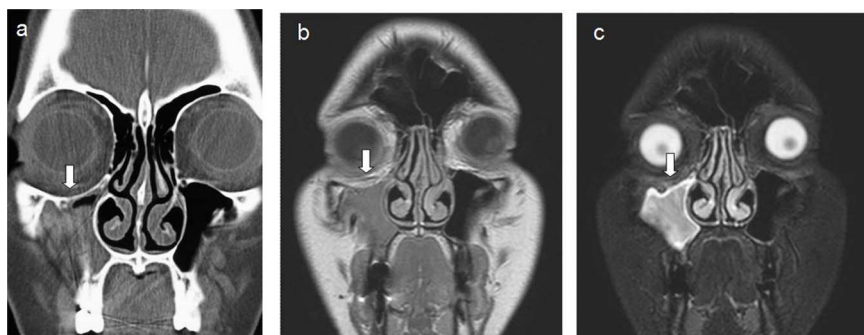


Figure 1 Coronal reformatted CT image (A) and coronal T1-weighted (B) and T2-weighted fat-saturated (C) MRI show some characteristic findings of silent sinus syndrome: complete opacification of the right maxillary sinus and downwards bowing of the ipsilateral orbital floor (arrow).



Figure 2 Coronal reformatted CT image (A) and coronal T1-weighted (B) and T2-weighted fat-saturated (C) MRI demonstrate lateral retraction of the uncinate process in the affected sinus (arrow) in comparison to the other side (arrow head).

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Competing interests None.

Patient consent Obtained.

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