

Silent Sinus Syndrome: A Rare Clinico-Radiological Entity

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A B S T R A C T

Introduction: ‘Silent sinus syndrome’ is well known among otolaryngologists, it is a common, yet underdiagnosed condition in the field of radiology. Chronic occlusion of the infundibulum leads to involution of the maxillary sinus leading to painless enophthalmos.¹ Maxillary sinus atelectasis is due to built-up of negative pressure within the sinus.

Case Report: We report a case of silent sinus syndrome with classic CT features in a 17 year old female patient who had facial asymmetry which revealed reduced volume of right maxillary sinus with infundibular block and convex walls with inferior bowing of floor of right orbit. Patient underwent middle metal antrostomy and was advised follow-up

Conclusion: Otolaryngologists must be aware of this condition as infundibulum retraction may lead to unintentional orbital penetration when uncinectomy is performed

Keywords: Silent Sinus Syndrome, Maxillary Sinus, Computed Tomography, Enophthalmos

INTRODUCTION

Although the entity, ‘silent sinus syndrome’ is well known among otolaryngologists, it is a common, yet underdiagnosed condition in the field of radiology. Chronic occlusion of the infundibulum leads to involution of the maxillary sinus leading to painless enophthalmos.¹ Maxillary sinus atelectasis is due to built-up of negative pressure within the sinus. Imaging features include maxillary sinus opacification and progressive volume loss. It occurs most commonly in the third and fourth decade with no significant gender predilection.²

It is important to rule out any antecedent trauma as that can lead to a similar presentation.

CASE REPORT

A seventeen-year old female presented with right sided facial asymmetry. She had no complaints of nasal congestion, headache, fever, facial pain or decrease in vision. She had no history of trauma or surgery. On examination mild ptosis was seen on the right side.

A subsequent plain computed tomography (CT) of the paranasal sinuses was performed and thin section reformatted images were viewed in the axial, sagittal and coronal planes. There were no facial fractures or bony erosions. Right maxillary sinus showed diffuse opacification with thickened walls and infundibular block. Rest of the paranasal sinuses appeared normal. Right enophthalmos was seen with mild inferior bowing of floor of the right orbit. (Figure 1, Figure 2)

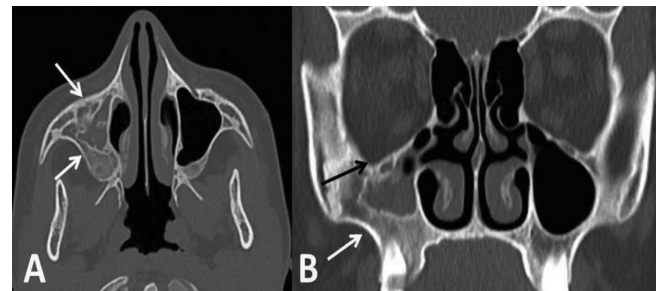


Figure-1: Axial and coronal CT of paranasal sinuses showing a small right maxillary sinus with convex outer walls (A and B white arrow) and inferior margin of the right orbit slightly lower than that of the left orbit.

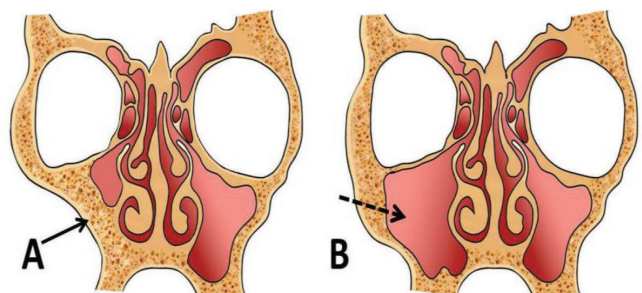


Figure-2: Graphic illustration of silent sinus syndrome showing convex walls (black arrow) of right maxillary sinus (A) compared to a (B) normal maxillary sinus (dashed arrow)

The patient underwent endoscopic middle meatal antrostomy at another institution and was advised follow-up.

DISCUSSION

Patients with the “silent sinus syndrome” seem to develop enophthalmos differently from those with mucoceles or active sinus infections. They commonly present with painless facial asymmetry without any history of trauma. On imaging, enophthalmos with ipsilateral inferior displacement of orbital floor is seen. Extensive opacification of the maxillary sinus with soft tissue is seen on computed tomography (CT) and magnetic resonance imaging (MRI).³ Patients may present with ptosis as a primary complaint, leading to an MRI of the brain to rule out neurological cause. Most of them in fact do not have history or presenting complaints suggestive of sinusitis. The diagnosis can be confirmed only on imaging.⁴ On clinical examination, the other differential diagnosis to be considered are other causes of spontaneous enophthalmos such as Parry- Romberg syndrome and linear scleroderma.⁵ Chronic maxillary sinusitis shows diffuse sinus opacification on imaging. Walls of the maxillary sinus may be thickened in the former also while the latter shows expansion of the sinus. Symptoms of congestion and headache help to differentiate silent sinus syndrome from sinusitis. Another differential is hypoplastic maxillary sinus; however, it does not show any sinus wall thickening.

CT is sufficient to establish the diagnosis. Aerobic and anaerobic bacterial and fungal cultures of sinus mucosal will be negative. If conservative management does not suffice then definitive treatment consists of functional endoscopic sinus surgery. Repair of orbital floor may be required.⁵

CONCLUSION

Silent sinus syndrome is an uncommon and often misunderstood disease with a slowly progressive course and gradual collapse of walls of the maxillary sinus. Otolaryngologists must be aware of this condition as infundibulum retraction may lead to unintentional orbital penetration when uncinectomy is performed.⁶

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