Isolated Upper Alveolar Numbness in Silent Sinus Syndrome

Hung Tuan Lau, MBBS, MRCS, MMed; Keng Hua Lim, MBBS, MRCS, MMed
Tan Tock Seng Hospital, Singapore

Introduction

• Silent sinus syndrome (SSS) is a rare and under-diagnosed condition within the spectrum of chronic maxillary atelectasis.

• It was first described by Montgomery in 1964 and subsequently termed as SSS by Soparkar et al. in 1994.1,2

• SSS is typically characterised by unilateral painless enophthalmos, hypoglobus and facial deformity with the peak incidence in the fourth decade.

• The purpose of this case report is to highlight the unique symptom of isolated alveolar numbness likely due to bony encasement and compression of the anterior superior alveolar nerve from chronic maxillary sinus wall bony sclerosis.

Case Presentation

• A 59-year-old Chinese man presented to the Otorhinolaryngology (ENT) department of our hospital with left upper alveolar numbness for 2 years.

• On physical examination, he demonstrated left facial asymmetry with a hypoplastic left midface noted. Sensation was also diminished on his gingiva between the 2nd left upper incisor and 1st upper premolar. He was edentulous on his left hemi-maxilla.

• Flexible nasendoscopy revealed a left concha bullosa of the middle turbinate with no mucopus seen.

Investigations

• Computer Tomography (CT) imaging of the paranasal sinuses revealed reduced volume of the left maxillary sinus with indrawn anterior and lateral walls. Mucosal thickening was seen occupying almost the entire left maxillary sinus with a small air-fluid level seen. The left uncinate process was retracted laterally. Downwards bowing of the left orbital floor was also noted (Figure 1).

• Thick bony encasement and significant stenosis of the left anterior superior alveolar nerve within the anterior wall of the maxillary sinus was demonstrated (Figure 2). No mucosal thickening or fluid levels were reported of the other paranasal sinuses.

Treatment

• The patient underwent left functional endoscopic sinus surgery to restore left maxillary sinus ventilation and drainage.

• Surgery performed consisted of left concha bullectomy, uncinctomy, middle meatal antrostomy, aspiration of retained secretions, maxillary sinus mucus retention cyst decompression and irrigation.

Outcome

• The patient was last reviewed 4 months after surgery and noted mild improvement in his upper alveolar numbness. No significant improvement was seen in his facial asymmetry.

• Endoscopic examination demonstrated a widely patent middle maxillary antrostomy and a small mucus retention cyst within the left maxillary sinus. (Figure 3)

Discussion

• Radiological imaging is useful in confirming the diagnosis and surgical planning of SSS. Pathognomonic findings include smooth inbowing of the maxillary antral walls and depressed orbital floor. The antral walls are osteopenic in the majority of cases.3 Osteomeatal unit obstruction and lateralisation of the uncinate process against the inferiomedial orbital wall is also noted.4

• In this case, 2 unusual observations were of particular interest. Thickened, sclerotic bony sinus walls were demonstrated instead of osteopenic bone often noted on radiological examination in SSS. We postulate that the chronic osteitis and bony remodelling seen would be consistent with the theory of SSS being a progressive yet asymptomatic late-stage of chronic maxillary atelectasis.5

• We attribute the patient’s unusual symptom of unilateral upper alveolar numbness to the loss of somatosensory innervation of the anterior superior alveolar nerve (ASAN). The ASAN is a sensory nerve that originates from the infraorbital nerve. It innervates the upper canine and incisors as well as surrounding soft tissue. The ASAN originates from the infraorbital nerve and runs in a thin bony canal called the canalis sinusus. It courses anterolaterally to the anterior wall of maxilla before turning medially and inferiorly within the anterior wall.6 It descends towards the pyriform aperture before branching to form the superior dental plexus within the alveolar process of the maxilla.7

• From the CT images reviewed, the canalis sinusus is stenotic with adjacent thickened bony encasement. It is subsequently absent due to significant bony sclerosis as it descends inferiomedially within the contracted anterior maxilla of the patient. We attribute the patient’s symptoms to this radiological finding.

Conclusion

• This case highlights an unusual presenting symptom of SSS. Given the known course of the ASAN within the anterior wall of the maxilla, chronic sinusitis with bony sclerosis can possibly result in ASAN compression. CT imaging aided in confirming diagnosis and postulation of the pathogenesis of the patient’s symptoms.

References