

Isolated Sphenoid Sinusitis as a Rare Cause of Atypical Headache

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Abstract

Isolated sphenoid sinusitis is a rare clinical entity which may cause disturbing headache not only in the sphenoid sinus area but the pain may refer to occipital, frontal, temporal area, or vertex, or may cause retroorbital pain. The diagnosis of isolated sphenoid sinusitis as a potential cause of headache is often missed or delayed due to the nonspecific presentation and needs to be considered when a patient presents with atypical headaches. A normal nasal endoscopic examination does not exclude sphenoid sinus disease. The diagnosis of isolated sphenoid sinus disease is often made radiologically, as symptoms and signs are nonspecific. Headaches which are not responding to conservative treatment should be referred to tertiary settings for further assessment. Mycetoma should be kept in mind in the differential diagnosis.

Keywords: Atypical headache, headache, mycetoma, sinusitis, sphenoid sinusitis

INTRODUCTION

Isolated sphenoid sinusitis is a rare clinical entity. It is seen only in 2.7-3.0 % of all paranasal sinus infections (1). Fungus ball should also be considered in the differential diagnosis of unilateral sphenoid sinusitis. Isolated sphenoid sinusitis may cause disturbing headaches not only in the sphenoid sinus area. The pain may refer to occipital, frontal, temporal area, or vertex, or may cause retro-orbital pain.

CASE PRESENTATION

A 37-year-old female patient presented with a seventeen-day history of occipital, temporal headache, and retro-orbital pain. She denied any ear, nose, or throat symptoms. On examination, there was no pathologic finding. Nasoendoscopy revealed hypertrophic bilateral inferior turbinates. A computed tomography (CT) scan of the paranasal sinuses revealed a small sphenoid sinus on the left side, which is opaque and hyperattenuating (Figure 1a, b). The patient did not accept surgery. Antibiotic treatment (amoxicillin/clavulanic acid 1000 mg bid) was given with topical decongestant and corticosteroid nasal sprays. The patient returned two weeks later for surgery since there was no clinical improvement with the previous treatment. A control paranasal sinus CT scan did not show any change. Left sphenoidotomy via the transetmoid approach was performed. The sphenoid sinus ostium was identified with navigation. The ostium mucosa was edematous and a little bit polypoid, and a fungal mass could be seen filling the sphenoid sinus (Figure 2). The ostium was widened. The sphenoid sinus was full of fungal balls. The entire fungal mass was completely removed (Figure 3, Figure 4). The pathology was reported as aspergillus fungi hyphae. The patient improved remarkably during the post-operative period. The intense headaches resolved completely. Antibiotics were stopped the day after surgery. Topical steroid nasal sprays were prescribed. During the three-month follow up, no symptoms recurred.

DISCUSSION

Isolated sphenoid sinus disease may cause atypical headaches in various locations that are unresponsive to analgesics. The headaches can be located in the vertex, frontal, temporal, periorbital, and occipital regions due to referred pain by the trigeminal nerve. The sphenoid sinus pathologies may remain completely asymptomatic until the symptoms have emerged. The clinical symptoms are often mild and noncharacteristic. Nasoendoscopy is an important diagnostic tool for pathologies of the paranasal sinuses; however, the findings in patients with isolated sphenoid sinus disease may not be obvious. The normal nasal endoscopic findings do not rule out sphenoid pathology (2). For this reason, patients are usually not referred immediately to the otorhinolaryngologist, which may delay diagnosis further. A CT scan is an important tool in diagnosing patients suspected of having sphenoid sinus disease. Often

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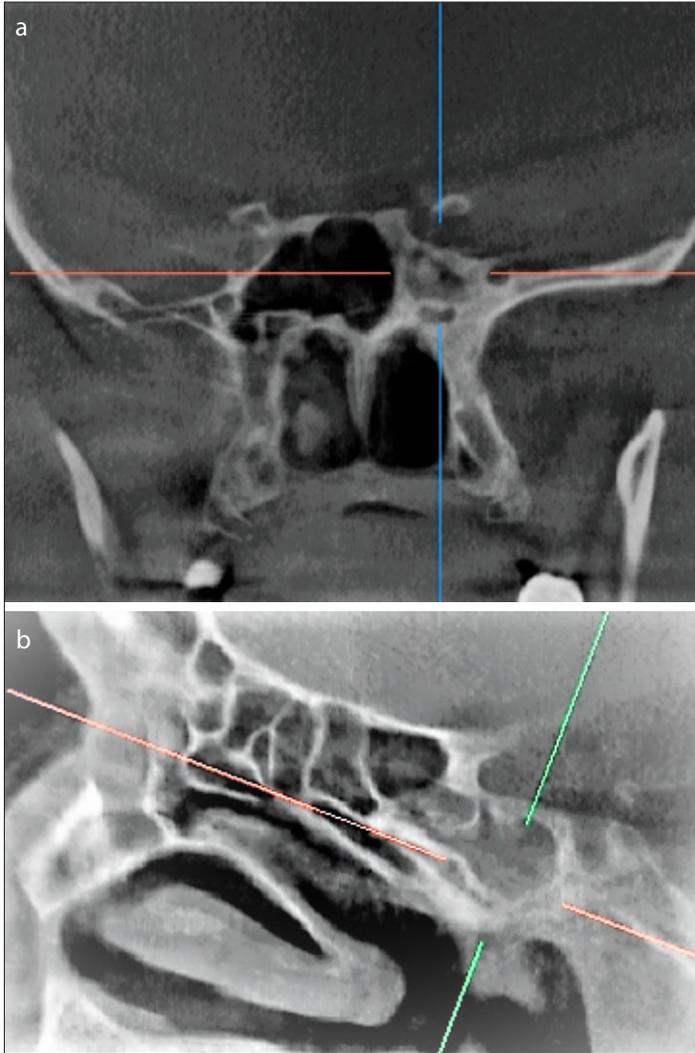


Figure 1. a, b. Coronal CT scan (a) Sagittal CT scan (b) show a small opaque hyperattenuating sphenoid sinus with opacification on the left side

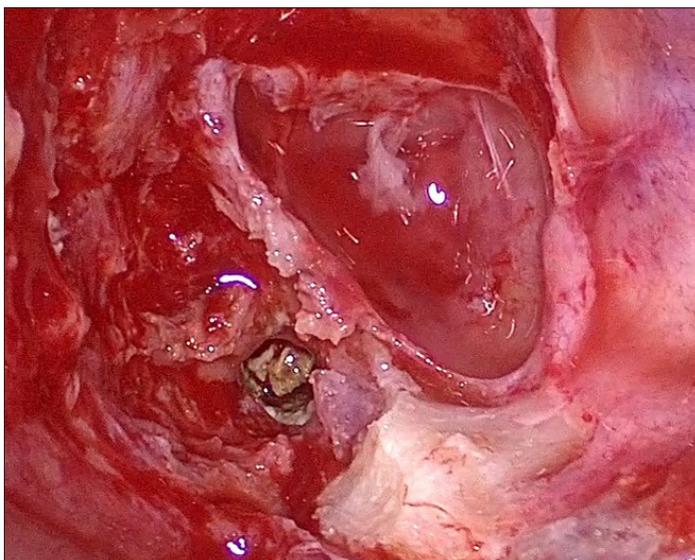


Figure 2. The sphenoid sinus ostium with a fungal mass inside the sphenoid sinus

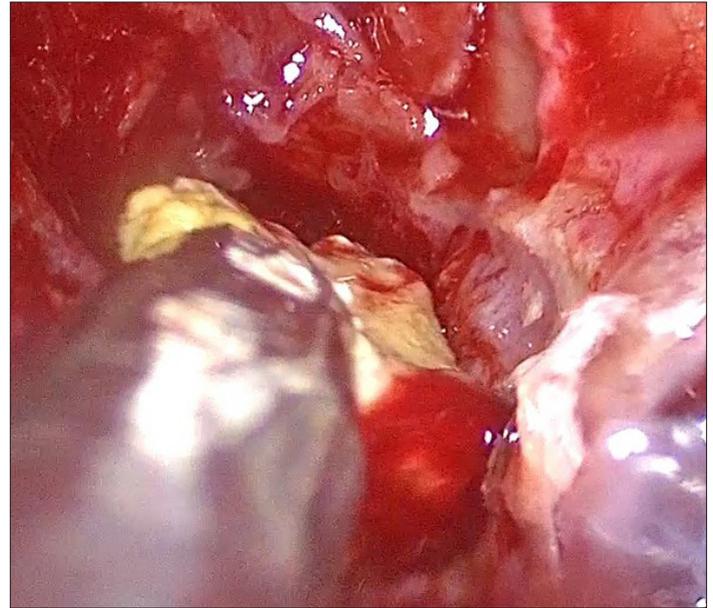


Figure 3. All fungal mass removed

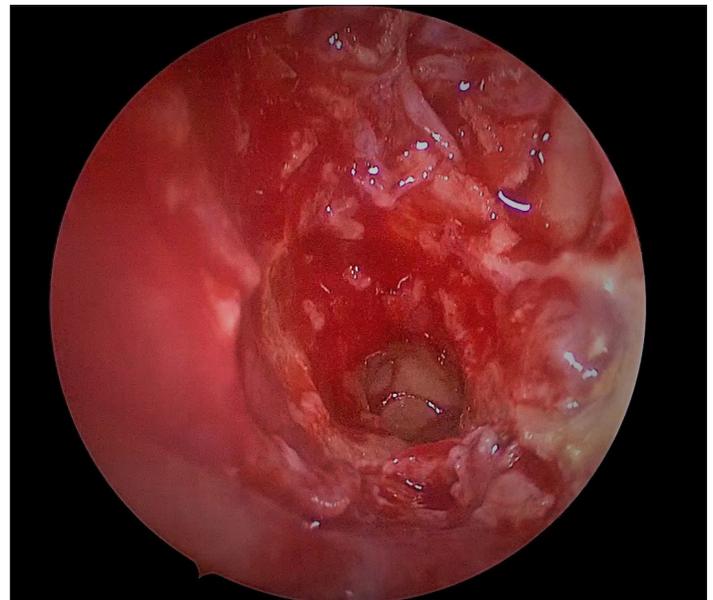


Figure 4. The inside of the sphenoid sinus after complete removal

enough, isolated sphenoid sinus disease is an incidental finding during a radiological investigation for atypical headaches, like in our case.

Fungus ball or mycetoma is seen as a mass within a paranasal sinus and is usually limited to one sinus on one side. Although fungus ball is most common in the maxillary sinus, the sphenoid sinus might also be affected. The fungus ball is a fungal hyphae collection without allergic mucin. There is no invasion of the sinus mucosa, blood vessels, or bone. Noncontrast CT shows hyperattenuating sinus contents due to dense fungal hyphae and may demonstrate punctate calcifications (Figure 1, Figure 2). The treatment for this condition is complete surgical cleaning of the paranasal sinus. No antifungal medication is necessary. Recurrence is very rare (3).

CONCLUSION

The diagnosis of isolated sphenoid sinusitis as a potential cause of headache is often missed or delayed due to the nonspecific presentation and needs to be considered when a patient presents with atypical headaches. Headaches that do not respond to conservative treatment should be referred to tertiary settings for further assessment. The diagnosis of isolated sphenoid sinus disease is often made radiologically, as symptoms and signs are nonspecific. A normal nasal endoscopic examination does not exclude sphenoid sinus disease. Mycetoma should be kept in mind in the differential diagnosis.

Informed Consent: Informed consent was obtained from the patient.

Peer-review: Externally peer-reviewed.

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