

Isolated sphenoid sinusitis: A big headache.

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Introduction

Isolated sphenoid sinusitis is a rare clinical entity with potentially devastating complications such as cranial neuropathies, cavernous sinus thrombosis, meningitis and intracranial abscess. It accounts for only 2.7-3.0% of all paranasal sinus diseases.¹ A patient may present with myriad symptoms, ranging from occipital or vertex headache, retro-orbital pain, otalgia, drowsiness to meningitis-like symptoms. With these non-specific and varied symptoms, patients are usually not referred to an otorhinolaryngologist, which contributes to further delay in diagnosis and proper management. Prompt and accurate diagnosis is necessary in order to avoid catastrophic complications due to the proximity of the sphenoid sinus to vital neurovascular structures.

Case Report

An 18-year-old male presented to the emergency department with a 12-day history of occipital headache and retro-orbital pain. He subsequently became drowsy. He had no seizures, photophobia or neck stiffness. He denied any ear, nose or throat symptoms. On examination, there was no mastoid swelling or tenderness. Nasoendoscopy revealed congested bilateral inferior and middle turbinates, and the adenoids appeared to be inflamed. A computed tomographic (CT) scan of the brain was performed at the emergency department to rule out meningitis or intracranial abscess. The patient was admitted and started on intravenous (IV) Ciprofloxacin. In view of the fact that there was no clinical improvement after 24 hours, a contrasted CT scan of the brain and paranasal sinuses was performed. An isolated left sphenoid sinusitis was seen on the HRCT scan with dilatation of the left cavernous sinus and no evidence thrombosis. We proceeded with a left sphenoidotomy via a direct transnasal approach and about 2ccs of pus drained. There was no mass or fungal ball in the sphenoid sinus.

The patient made a remarkable improvement postoperatively. The intense headaches

resolved completely, and he tolerated well orally. We continued the IV Ciprofloxacin for one week, and he was then discharged with a 6-week course of oral antibiotics. The patient remained well under follow up.



Image 1. An axial cut of a CT scan of the paranasal sinuses which shows isolated right sphenoid sinusitis.



Image 2. A coronal cut of a CT scan of the paranasal sinuses which shows isolated right sphenoid sinusitis.

Discussion

Isolated sphenoid sinus disease usually presents with atypical headaches of various intensities and locations that are unresponsive to analgesics and exacerbated by head movements.² The headaches can be located in the vertex, frontal, temporal, periorbital, and occipital regions.³ These varied locations can be explained by the sensory innervation of the sphenoid sinus, which is innervated by

the trigeminal nerve, and the afferent fibers from the sphenopalatine ganglion. The serious pathology of the sphenoid sinus may remain totally asymptomatic until complications have emerged.

Nasoendoscopy is an important diagnostic tool for paranasal sinuses pathologies; however, the findings in patients with isolated sphenoid sinus disease may not be obvious. According to Sethi et al., the normal appearance of the sphenoidal recess does not exclude sphenoid pathology.⁴ Reports have shown that nasoendoscopy failed to demonstrate any pathological abnormalities around the sphenoidal ostium in as many as 50% of cases.⁵

The clinical presentation of isolated sphenoid sinus pathology is often vague and non-characteristic. 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 enough, isolated sphenoid sinus disease is an incidental finding during a radiological investigation for atypical headaches, as per our case.

Conclusion

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. A diagnosis of isolated sphenoid sinusitis need to be entertained when patient presents with atypical headaches in order to avoid catastrophic complications.

How does this paper make a difference to general practice?

This paper highlights the importance of recognizing isolated sphenoid sinusitis as a potential cause of headache. This diagnosis is often missed or delayed due to the non-specific presentation. Headaches which are not responding to conservative treatment should be referred to tertiary settings for further assessment to avoid catastrophic life-threatening complications.

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