A rare cause of nasal septal abscess

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Abstract

We describe a patient with mid-facial pain and nasal obstruction due to a nasal septal abscess (NSA) complicating an occult fungal ball of the sphenoid sinus. We highlight the importance of suspecting unusual pathology in patients with NSA and no trauma history.

Case report

A 66-year-old woman presented to the emergency department with a four day history of progressive, mid-facial pain and nasal obstruction. On examination she was afebrile with no meningism or focal neurological deficits. A CT head showed no intracranial pathology and incompletely visualized her paranasal sinuses. She was treated with analgesia, xylometazoline nasal spray, oral amoxicillin/clavulanic acid and discharged from the department.

She represented 6 days later with ongoing symptoms. An otolaryngology consult confirmed a right posterior NSA which was incised under local anaesthesia. She was discharged from hospital after receiving 48 hours of intravenous flucloxacillin. *Staphylococcus aureus* and *Haemophilus parainfluenzae* were cultured from the abscess.

Her facial pain continued at a 1 week follow-up appointment and rigid nasal endoscopy revealed a persistent posterior NSA and pus from the right sphenoid sinus ostium. A paranasal sinus CT confirmed extensive sphenoid sinusitis with erosion of the anterior face of the sphenoid (Figure 1).

Figure 1. Axial CT scan of sinuses showing erosion of the anterior sphenoid and septal swelling
An urgent endoscopic sphenoidotomy was performed and the abscess re-drained. A fungal ball was identified and removed from the sphenoid sinus (Figure 2).

Figure 2. Endoscopic image of right sphenoid sinus fungus ball

Histology confirmed fungal hyphae with no evidence of mucosal invasion (Figure 3). She was discharged on oral Flucloxacillin and saline nasal irrigation 22 days after initial presentation. The septal oedema resolved rapidly and at follow-up the opened sphenoid sinus has been easily inspected and free of infection.

Figure 3. Haematoxylin and eosin (H&E) stain showing fungal hyphae
Discussion

A NSA is a collection of pus between the cartilaginous or bony septum and its mucoperichondrium or mucoperiostium. It is a rare, often misdiagnosed condition which can cause potentially serious cosmetic and infective complications.

The rich venous blood supply of the nose, congenital bony dehiscence in surrounding paranasal sinuses and proximity to the cavernous sinus, orbital apex and skull base can lead to multiple septic sequelae. Pressure necrosis of the quadrilateral cartilage can occur after 24-48 hours resulting in a classical saddle nose deformity.

Fortunately most NSA are associated with obvious risk factors such as trauma or recent septal surgery and present in the anterior cartilaginous portion of the nasal septum making them identifiable by anterior rhinoscopy.

A sphenoid sinus fungal ball is an aggregation of fungal hyphae that occupy the sinus but do not invade the mucosa. Although a noninvasive condition it is associated with bacterial superinfection and bone erosion in up to 7% of cases. Endoscopic sphenoidotomy with complete removal of fungal ball is the most effective treatment.

Atraumatic NSA should alert the treating physician to an atypical aetiology and has been described in association with immunosuppression, dental infection, or adjacent paranasal sinuses inflammation. Our case report is the first to describe a NSA caused by bacterial superinfection of a sphenoid sinus fungal ball.

This case highlights the diagnostic difficulties and treatment delay often associated with atraumatic NSA. A high clinical suspicion, rigid nasal endoscopy, early paranasal sinus CT and surgical drainage are essential to treat these patients and prevent potential complications. NSA should be considered in all patients with nasal obstruction and severe midfacial pain. A sphenoid sinus fungal ball with bacterial superinfection is a potential source of NSA that can be effectively treated with endoscopic sphenoidotomy, removal of the fungal ball and culture directed antibiotics.

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