

## Posterior nasal septal abscess in a healthy adult patient

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### Abstract

**Objective:** We report an extremely rare case of bilateral posterior nasal septal abscess in an otherwise healthy adult patient.

**Method:** Case report and a review of the world literature concerning atraumatic nasal septal abscess and its management.

**Results:** The development of an atraumatic nasal septal abscess is rare, but it has been reported in association with acute sinusitis, in patients with poor immunity and in children. The presentation, clinical course and treatment are discussed in the presented patient.

**Conclusion:** To our knowledge, this is the first report in the world literature of a bilateral posterior septal abscess associated with acute sinusitis in an otherwise healthy adult.

**Key words:** Nasal Septum; Abscess; Sinusitis

### Introduction

Atraumatic nasal septal abscess secondary to pansinusitis is an extremely rare occurrence, with very few reports in the literature; those that do occur are commonly associated with poor immunity.<sup>1,2</sup> In general, most septal abscesses are associated with nasal trauma<sup>3,4</sup> or occur as a post-operative complication.<sup>3</sup>

We present a case of a bilateral posterior nasal septal abscess with coexisting pansinusitis, in an otherwise healthy adult patient. Although the patient was treated with incision and drainage of the abscess and medical treatment of the sinusitis, the condition relapsed and required endoscopic sinus surgery. To the best of our knowledge, a case of this type has not previously been reported in the literature.

### Case report

A 38-year-old man with no past medical history was referred to the ENT department by his general practitioner with a two-week history of malaise and a five-day history of frontal headache and nasal obstruction. He had been taking cephalexin for a presumed diagnosis of sinusitis.

Nasendoscopy examination revealed a bilateral, 'boggy' swelling in the posterior nasal septum (Figures 1 and 2), but no obvious pus or sinusitis were seen within the nasal cavity. Fine needle aspiration drew 10 ml of blood-stained pus from both sides of the nasal septum. Culture of this fluid identified *Haemophilus influenzae*.

Incision and drainage of the abscess was performed under local anaesthetic. Nasal packs were inserted for 24 hours, and the patient was commenced on intravenous cefuroxime and metronidazole. No risk factors were identified in the patient's history to suggest that he may be immunocompromised (i.e. no history of recurrent

infections, blood transfusions or high risk behaviour). On admission, his white blood count had been  $14.3 \times 10^9/l$ , with a neutrophilia of  $11.5 \times 10^9/l$  and a C-reactive protein level of 80 mg/l. Coexisting pansinusitis was found on computed tomography (CT) scanning; Figure 3 demonstrates the posterior septal abscess and sinusitis seen.

The patient's symptoms improved, and he was discharged on oral antibiotics after four days.

When reviewed two days later, the patient complained that his headache and nasal obstruction had returned. Examination revealed a recollection in the posterior septum. Again, no pus was identified in the nasal cavities.

Under general anaesthesia, the patient underwent a further incision and drainage of fluid (which was serous) from both sides of the nasal septum. The perpendicular plate of the ethmoid remained intact. Bilateral endoscopic middle meatal antrostomies and anterior and posterior ethmoidectomies were performed. Extensive polypoid mucosa and pus was found within the sinuses. Nasal packs were inserted for 24 hours, following which the patient was commenced on beclometasone and neomycin nasal drops in addition to intravenous antibiotics for a further three days.

The patient was then discharged from hospital, having been prescribed a further week of oral antibiotics, topical decongestants and steroid nasal drops. He made an uneventful recovery.

### Discussion

This patient presented with headaches and nasal obstruction, symptoms in keeping with acute sinusitis, a problem frequently treated in the community with antibiotics and decongestants, to good effect.

In this case, failure to respond proved to be due to the rare sequel of a nasal septal abscess. This can be easily

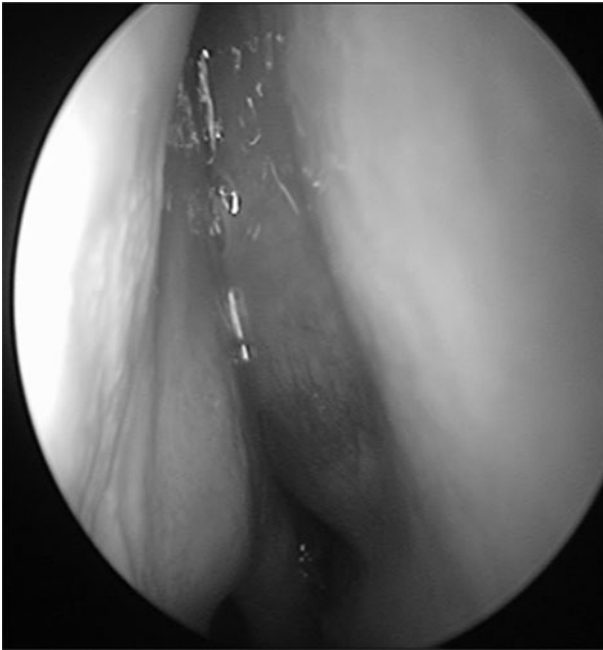


FIG. 1

Nasendoscopic view of right nasal cavity, demonstrating the posterior septal abscess and the presence of rhinitis.

missed if the clinician fails to consider such a diagnosis and misdiagnoses the septal swelling as either a deviated nasal septum or simple mucosal oedema. This can be avoided by palpation confirming a fluctuant swelling. In the absence of trauma or previous surgery, the presence of an abscess in an adult should therefore alert the clinician to the likelihood of synchronous disease, either in the sinuses, of dental origin,<sup>5</sup> or due to immunocompromise.<sup>1,2</sup>

In the absence of visible pus within our patient's nasal cavities, probably due to complete obstruction of the sinus ostia, CT imaging was useful in identifying the underlying

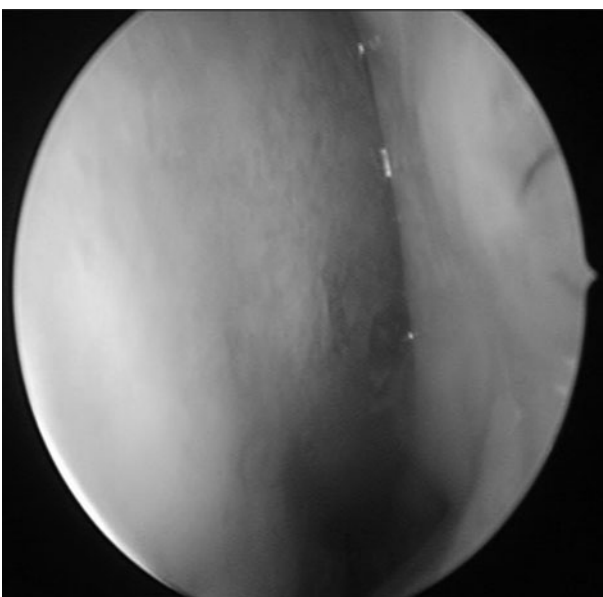


FIG. 2

Nasendoscopic view of left nasal cavity, demonstrating the posterior septal abscess and the presence of rhinitis.



FIG. 3

Axial computed tomography scan demonstrating the abscess in the posterior nasal septum and the coexisting sinusitis.

presence of sinusitis as well as the abscess, as demonstrated in Figure 3.

A review of the literature identified only a handful of cases of septal abscess secondary to acute sinusitis. Unlike the present case, these involved the anterior rather than the posterior nasal septum and usually occurred in children. An abscess of the posterior nasal septum is extremely rare. In 1963, Wallenborn and Fitz-Hugh reported a case of a unilateral abscess of the posterior nasal septum associated with ipsilateral sinusitis.<sup>6</sup>

- **Nasal septal abscess secondary to sinusitis is rare, and it may be missed in the community if the symptoms of nasal congestion are mistakenly attributed to inflammatory mucosal oedema**
- **Nasal septal abscess is more common in children and in those who are immunocompromised**
- **Posterior septal abscess may be missed if only anterior rhinoscopy is performed**
- **Untreated posterior septal abscesses, although unlikely to result in nasal deformity (the cartilaginous septum remaining unaffected), can result in intracranial complications**
- **Endoscopic sinus surgery may be required to resolve the infections, in addition to incision and drainage of the septal abscess and parenteral antibiotics**

Our patient appears to represent the first reported case of a bilateral posterior nasal septal abscess associated with bilateral sinusitis. This pathology could have resulted from direct subperiosteal extension from the anterior surface of the sphenoid bone, extending anteriorly over the vomer and perpendicular plate of the ethmoid to the subperichondrial surface of the quadrilateral cartilage.<sup>7</sup> Other possible mechanisms include direct spread via a

bony fissure, through congenital bony abnormalities or via thrombophlebitis.<sup>8,9</sup>

There is unanimous agreement in the literature that all septal abscesses must be identified and treated as soon as possible, in order to prevent the possible development of intracranial complications and cosmetic deformity. In this patient, the septal abscess was limited to the posterior septum, either side of the perpendicular plate of the ethmoid, which remained intact. This case therefore highlights the importance of a thorough examination, including endoscopy, since the posterior location of the septal abscess could easily be missed on anterior rhinoscopy.

Needle aspiration was performed before formal incision and drainage of the abscess, in order to obtain pus for culture and sensitivity analysis. Ambrus *et al.* suggested that this procedure may decrease the likelihood of intracranial extension of the infection.<sup>8</sup> Culture of pus from the patient's septal abscess grew *Haemophilis influenzae*; in contrast, *Staphylococcus aureus* was the commonest pathogenic organism in a series of 14 patients reported by Jalaludin.<sup>10</sup>

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