

# Giant Pneumatized (Concha Bullosa) Superior Turbinate Causing Unilateral Facial Pain

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## Abstract

**Background:** So-called “contact points” in the nose as a cause of facial pain and headache has always been controversial, and usually based on the middle turbinate. Extreme pneumatisation of the superior turbinate has only recently been recognized. **Case report:** We report a case of long-standing unilateral facial pain, misdiagnosed as migraine, and completely relieved by removing contact between the septum and a giant pneumatized superior turbinate. **Discussion:** Large studies reviewing CT scans do not prove that “contact points” cannot cause facial pain in some patients, and this cause should be in the differential diagnosis. **Conclusion:** This is a rare case of a giant superior turbinate causing facial pain treated by conservative surgery with permanent relief.

## INTRODUCTION

Otolaryngologists are often referred patients with facial pain or headache, which can be a challenging diagnostic problem. Bilateral facial pain (sometimes called ‘atypical’) is deep, midfacial and there is usually underlying depression. Most of the causes of unilateral facial pain are termed ‘neuralgias’, of two main types. Primary neuralgias are rare, as exemplified by trigeminal neuralgia. The common causes are secondary neuralgias, mainly dental pulpitis, impacted teeth, acute sinusitis, trauma and barosinusitis. Suspected vascular causes have had a variety of names including sphenopalatine neuralgia, Sluder’s lower half headache, and vidian neuralgia. These are now generally called migrainous neuralgia or cluster headache. The patient wakes at night with unilateral pain in or around the eye, radiating to the temple or face.

## CASE REPORT

A 53 year old woman presented complaining of unilateral right facial pain for six years. Each month for a week she experienced a pain which started in the nose and radiated to the cheek and forehead. It often woke her. She had been prescribed numerous

analgesics, including intramuscular Pethidine. The diagnosis had been migraine.

A CT scan of sinuses showed a giant pneumatized (concha bullosa) superior turbinate indenting the nasal septum (fig

1).

## Figure 1

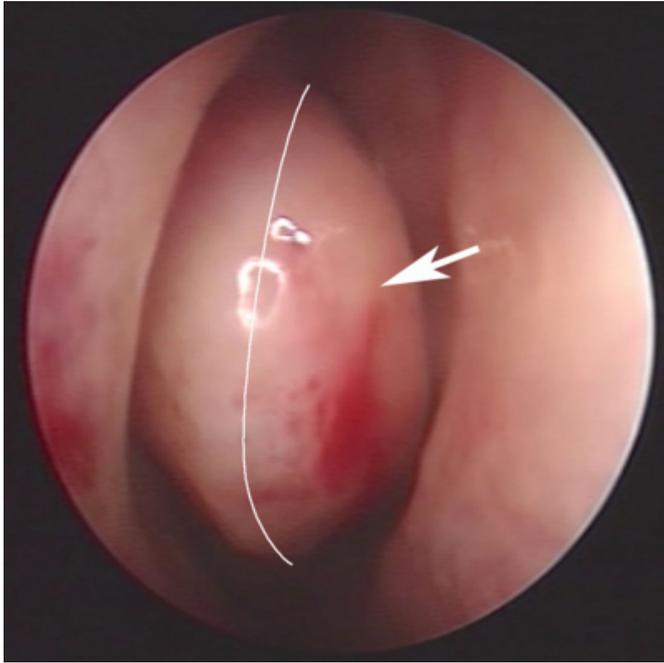
Figure 1: Coronal CT scan showing the right concha bullosa superior turbinate, deeply indenting the nasal septum.



On the likelihood that this was the cause an endoscopic approach to remove the contact was offered and accepted. Under general anaesthesia, with a 0 degree video-telescope guidance, the medial half of the right superior turbinate was excised. (fig 2).

**Figure 2**

Figure 2: Endoscopic view of the right superior turbinate. The medial half was excised with a sickle knife.



At the six week follow-up she reported absence of the pain, and there has been no recurrence after four years and no hyposmia.

**DISCUSSION**

The notion that subtle nasal pathology could be a cause of unilateral facial pain has never failed to evoke controversy[1,2]. Innervation to the nose and sinuses is via the first and second divisions of the trigeminal nerve, so sinus pain can be experienced locally or referred to another division. Experiments in the 1940s established that the fronto-nasal ducts, turbinates and roof of the nose are especially sensitive to contact pressure sensation. In modern era of detailed sinus imaging and endoscopic sinus surgery there has been a resurgence of interest in so-called ‘contact points’ in the nose as a cause of pain and headache, in particular septal spurs and middle turbinate abnormalities[1].

The middle and superior turbinates are part of the ethmoid

bone. Rarely an extra

‘supreme’ turbinate may be present. The superior turbinate is usually a small, thin vertical structure. Although pneumatisation (usually bilateral) of the middle turbinate is common, extensive pneumatisation of the superior turbinate has only recently described in 8% of sinus CT scans[3].

In 1996 Clerio[4] described three patients with “migraine headaches” whose CT scans showed a large superior turbinate contacting the septum. Endoscopic partial resection relieved headache in a short follow-up period of six to 14 months.

Large CT scan studies[2] which find no correlation of patient symptoms with scan abnormalities must be interpreted with caution as not proving that ‘contact points’ cannot cause symptoms in some individuals. When this cause is suspected, seeing the patient with the pain and its abolition by local anaesthetic spray or injection can provide more evidence for the mechanism. Resection of the contacting portion of a large superior turbinate can be precisely achieved endoscopically. Although the olfactory neuroepithelium can extend onto its medial surface there are no reports of hyposmia caused by this technique.

In summary, superior turbinates can be pneumatized and large. In its narrow confinement a ‘concha bullosa’ superior turbinate can significantly indent the nasal septum and be a cause of unilateral facial pain, and possibly headache. The present case is a new example, with a four year follow-up.

**References**

1. Stammberger H, Wolf G. Headaches and sinus disease; the endoscopic approach. *Ann Otol Rhinol Laryngol Suppl* 1988; 134: 3 – 23.
2. Abu-Bakra M, Jones N. Prevalence of nasal contact points in patients with facial pain compared with patients without pain. *J Laryngol Otol* 2001; 115: 629- 32.
3. Ariyirek O, Balkanei F, Aydingoz U et al. The pneumatized superior turbinate: a common anatomic variation? *Surg Radiol Anat* 1996; 18: 137 – 9.
4. Clerio D. Pneumatized superior turbinate as a cause of referred migraine headache. *Laryngoscope* 1996; 106: 874-9.

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