An Unusual Case Of Inferior Turbinate Osteoma Removed Endoscopically: A Case Report

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Abstract Inferior turbinate osteoma is exceptionally rare. Here we are reporting a case of inferior turbinate osteoma presented with history of left nasal obstruction. CT unveiled osseous hypertrophy of left inferior turbinate. Osteoma was removed endoscopically using hammer and gouge. This is the fourth case to be reported in the world literature and second in India.

Keywords Osteoma · Inferior turbinate · Nasal obstruction

Introduction

Craniofacial osteomas are benign slow growing tumors often seen originating in paranasal sinuses. Frontal sinus is the most frequent location [1]. It is very uncommon for an osteoma to arise in the nasal cavity or turbinates. Only seven middle turbinate [2], one superior turbinate [3] and

three inferior turbinate osteoma cases [4–6] have been reported in the literature to date (Table 1).

Osteomas are largely diagnosed between second to fifth decades of human life, with a slight male preponderance [7]. Most osteomas are asymptomatic and are occasionally diagnosed during radiographic examinations executed for unrelated reasons. Symptoms vary depending on the location, size and spreading. Nasal obstruction is the most common symptom. Other symptoms comprise headache, nasal discharge, epiphora and postnasal discharge. Osteoma can be observed in concurrence with Gardener's syndrome, a genetic disorder characterized by numerous polyps in association with osteomas of the skull and multiple soft colon tumors [7]. Flexible nasal endoscopy is a useful OPD procedure to know about the extent of disease. CT paranasal sinus tells about the origin and extent of osteoma along with the status of surrounding structures. Surgery is indicated for large and symptomatic osteoma.

We are reporting an unusual case of inferior turbinate osteoma associated with left side nasal obstruction and nasal discharge in a patient managed successfully by endoscopic surgery. To the best of our knowledge, only 3 cases of osteoma involving the inferior turbinate have been previously published.

Case Report

A 18 year old male patient presented to the department of ENT in our institution with history of left nasal obstruction, nasal discharge and headache for 2 years. He had no history of head trauma, facial surgery or allergy. Medical history was unremarkable. On examination, left inferior turbinate was abnormally enlarged and almost blocking the left nasal cavity. Enlarged inferior turbinate was resistant to nasal

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Table 1 Reported inferior turbinate osteomas

Osteoma	No	Study	Age	Sex	Symptoms	Surgery
Inferior turbinate	1	Mesolella et al. [4]	34	F	Nasal obstruction, purulent nasal discharge, facial pain, hearing loss, tinnitus	Pyriform aperture incision
	2	Kumar et al. [5]	54	F	Nasal obstruction, headache, facial pain	Endoscopy with help of microdrill
	3	Grabovac et al. [6]	50	M	Nasal obstruction	Sublabial approach
	4	Current study	18	M	Nasal obstruction, headache, nasal discharge	Endoscopic with hammer and gouge

decongestant and intranasal corticosteroid spray therapy. Clinical examination revealed solid and painless circular-shaped mass of the inferior turbinate, covered with normal mucosa. Swelling was reclined on the septum and bottom of the nasal cavity, leaving only a narrow space in the upper portion of the nasal cavity. Nasal endoscopy showed that the swelling was limited only to the inferior turbinate, leaving the rest of the nasal cavity intact. General examination detected no cutaneous or soft tissue tumors.

CT PNS showed severe osseous hypertrophy of the left inferior turbinate with ground glass appearance and few cystic areas within it. The cortical margins were well defined and showed no cortical breach (Fig. 1). Routine preoperative laboratory tests were within normal limit.

Mass was removed endoscopically in toto, without damaging the surrounding structures under general anesthesia. Mucosa over the inferior turbinate attachment was elevated. The inferior turbinate mass was detached from its attachment to the lateral nasal wall and removed in a single

piece using gouge and hammer. The mass was measured $5.0 \times 2.0 \times 2.0$ cm (Fig. 2). Histopathological examination exhibited mature bony trabeculae with intervening fibrous tissue and blood vessels. There was focus of mature stratified squamous epithelium with underlying mucus secreting glands consistent with osteoma. Postoperative course was uneventful. Post operative endoscopic photograph 4 months after surgery showed left nasal cavity free of any disease and the patient is symptom free till date.

Discussion

Osteoma is a benign, slow-growing osteoblastic lesion. The frontal sinus is the most commonly involved anatomic site (approximately 80 % of cases), followed by ethmoid, maxillary sinus, sphenoid sinus and more rarely, the turbinate [7]. Nasal turbinate osteomas are extremely rare and only three cases of osteomas localized in the lower, seven on the middle and one on the superior turbinate have been reported in the world literature till date [2–6].

Aetiology is uncertain but three main theories have been proposed—embryological, posttraumatic and infectious. One study considered osteoma as a slow-growing osseous hamartomas arising in childhood. According to Fu and Perzin classification, osteomas are histologically divided

Fig. 1 Preoperative CT PNS coronal view showing osseous hypertrophy of inferior turbinate

Fig. 2 Excised inferior turbinate osteoma

into three categories—ivory/eburnated osteoma, mature osteoma/osteoma spongiosum and mixed osteoma [7].

Osteomas are generally diagnosed in between second and fifth decades of life with a slight male preponderance [7]. However, among eleven turbinate osteoma cases, 3 were in male and 8 in female. Our case is 18 years old male and youngest one to be reported for turbinate osteoma in literature.

Most patients are asymptomatic in the early stages and are diagnosed incidentally during radiological examination. The most common symptom is nasal obstruction. Other symptoms include headache, nasal discharge, facial pain and post nasal drip. In our case, the patient presented with nasal obstruction, headache and nasal discharge.

CT scan is an effective modality for the evaluation of osteomas. Osteomas may exhibit a very high density, resembling cortical bone, or a gradually decreasing density to a ground-glass pattern. In our case CT shows osseous hypertrophy of the left inferior turbinate with ground glass appearance and few cystic areas within it.

Because osteomas are slow-growing, there is general consensus in the literature for a “wait and watch” approach for any lesion that is asymptomatic. Surgery is recommended when patient is symptomatic. Surgical approaches are classified into external, endoscopic and combined endoscopic and external procedures. Although endoscopic removal is the preferred modality, external approach should be considered with large osteomas. In the present case, osteoma was removed endoscopically using gouge and hammer and was removed in a single piece. Endoscopic removal carries less risk and leads to better cosmetic outcomes.

Conclusion

Inferior turbinate osteoma is extremely rare and our case is the fourth reported in the literature to date. Endoscopic surgery is the gold standard in treatment. Using gouge and hammer it can be removed in a single piece.

Compliance with Ethical Standards

Conflict of interest The authors have no conflicts of interest to declare.

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