



PARANASAL OSTEOMA: A CASE REPORT

Otorhinolaryngology

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ABSTRACT

Paranasal sinus osteomas are the most common benign fibro-osseous lesions that occur in the paranasal sinuses, having potential serious complications.² With a prevalence ratio of 2:1 towards males, in 95% of the cases, the osteomas are situated most commonly in the frontoethmoidal region. However, osteomas of the maxillary sinus account for less than 5% of cases. The management of symptomatic paranasal sinus osteomas is surgical and is decided based on tumor size and location, patient symptoms, and experience of the surgeon. We report on a 40-year-old male patient presenting with a giant calcified mass. In this case, an endonasal approach with caldwell luc approach was the most appropriate management with the large size of the tumor. No recurrence at 24 months follow-up was reported.

KEYWORDS

paranasal osteoma, benign tumour, case report

INTRODUCTION

Osteomas are slow growing, fibro-osseous tumours representing the most common benign tumor of the nose and paranasal sinuses. They arise from the craniofacial skeleton primarily from the frontal sinus followed by ethmoid, maxillary and sphenoid sinuses.¹

They are usually diagnosed incidentally on routine radiological examinations, and because of their slow growth rate, most will remain lifelong asymptomatic. However, due to their space-occupying behavior and their localization in the narrow and intricate outflow tract of the anterior complex of paranasal sinuses, they produce symptoms that appear disproportional to their small size and benign nature due to 'mass effect'. When symptomatic, complaints may include headaches, localized pain, facial deformities, nasal obstruction, or symptoms attributable to the secondary formation of mucocoeles or mucopyoceles. It can also cause epiphora, proptosis, diplopia, and decreased visual acuity.⁴

Histologically, osteomas represent true neoplasms, comprised of mature, well-differentiated, hyperplastic osseous tissue. Their mean growth rate was estimated to be around 1mm/year, with a range from 0 to 6.0mm/year. They can be classified into 3 types- ivory, mature or spongiotic, mixed.⁴

CASE REPORT

A 40 year male presented with nasal obstruction and watering of eyes since 1 year. Patient denied history of visual disturbance, headache or facial pain. On examination, patient had widening of intercanthal distance and right sided facial swelling. (Fig 1) On diagnostic nasal endoscopy, a whitish mass was present at floor of right nasal cavity with bulging of mucosa on lateral wall of nose. The inferior and middle turbinate were absent. The septum was deviated to left. (Fig 2)

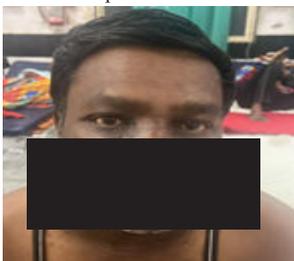


Fig 1

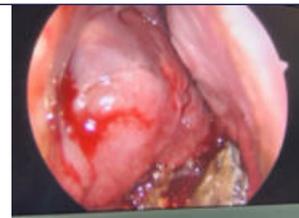


Fig 2: Diagnostic nasal endoscopy of Right Nasal Cavity

The NCCT PNS was suggestive of a large dense sclerotic mass measuring 3.6*2.8*2.5 cm in the right nasal cavity. Left deviated nasal septum and lateral displacement of medial wall of right maxillary sinus was seen. Right ethmoidal and sphenoidal sinuses appear involved. Another mixed density lesion containing dense sclerotic foci with overlying ground glass opacities measuring 4.2*3*2.4cm is noted in superior part of right nasal cavity extending upto right orbital cavity of maxillary sinus and upto frontal and ethmoidal sinuses. (Fig 3,4,5)



Fig 3: NCCT PNS -coronal view



Fig 4: NCCT PNS- axial view



Fig 5: NCCT PNS- sagittal view

Patient was posted for surgical removal of paranasal osteoma after routine laboratory investigations and pre-anaesthetic evaluation.

Intraoperatively, due to the huge size of the paranasal osteoma, the mass was removed endoscopically and by caldwell luc method.(fig 6, fig 7)



Fig 6: Caldwell luc approach



Fig 7: Gross specimen

Histopathology:

Gross examination:

Multiple, irregular, bony pieces largest of size 4*3.4*2cm, shortest of size 1*0.8*0.5cm. Also showed 2 flat, soft to firm tissue measuring 2.2*1.2cm and 1.2*1.1cm. (Fig 7)

Microscopic Examination:

Section shows bone arranged in trabecular pattern with congested spaces containing sparse plasma cells along with loose fibrous stroma. Inconspicuous osteoblasts are rimming the trabeculae.(Fig 8)

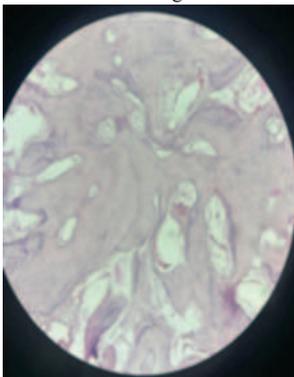


Fig 8- Histopathology slide

Postoperative follow-up was performed at 1, 6, 12, and 24 months. Nasal endoscopy and CT performed at 24 months revealed no recurrence.

DISCUSSION

Although osteomas are the most commonly seen benign tumors of the paranasal sinuses, they are still rare, and we are facing a lack of literature detailing their management and prognosis.

Paranasal sinus osteoma incidence has been reported to be around 3%, of which maxillary sinus osteomas represent only 5%. They are commonly detected in the fourth decade, with a male predominance. According to Mlouka et al., in the case of a maxillary sinus osteoma, the lesion usually appears on the lateral wall of the sinus.³

There are two options for its management: clinical observation and surgery. Many authors recommend periodical clinical and imaging follow-up for all asymptomatic patients. According to Arslan et al., there is no significant growth in asymptomatic osteomas on repeated radiological examinations, during a 28-month follow-up. Although clinical observation should be recommended for elderly patients and for frontal and maxillary sinus asymptomatic osteomas, there are recommendations for removal of all ethmoid and sphenoid osteomas because of the potential severe complications on the visual pathways or carotid artery. Georgalas et al. recommend observation of small asymptomatic osteomas.³

The Caldwell–Luc procedure, lateral rhinotomy or craniotomy, external approach, endoscopic techniques, or a conjunction of them are the available choices. Castelnovo et al. and Miman et al. discuss the rapid progress of endoscopic sinus surgery, even for large osteomas. The availability of the multi-angled scopes, intranasal drills, and neuro-navigation systems, together with increasing skill in the endoscopic approach and the 2-nostril–4-hand technique, represents a further evolution that expands upon use of endoscopic approaches.

CONCLUSIONS

Paranasal sinus osteomas are the most common benign fibro-osseous lesions that occur in the paranasal sinuses, having potential serious complications. Main treatment option for sphenoid and ethmoid sinus and other symptomatic osteomas are surgical resection. Radiographic follow-up is necessary for asymptomatic lesions.³ Selection of surgical resection method depends on tumor location and size. Patients should be observed for recurrence with periodic examination and imaging techniques.

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Ethics Approval: Taken

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REFERENCES:

1. Movio G, Ahmed S. Paranasal Osteoma: The Importance of Surveillance. Cureus. 2023 Sep;15(9).
2. Arslan HH, Tasli H, Cebeci S, Gerek M. The management of the paranasal sinus osteomas. Journal of Craniofacial Surgery. 2017 May 1;28(3):741-5.
3. Irimia IM, Gata A, Puscas IM, Covaliu BF, Albu S. Endoscopic Excision of Rare Large Maxillary Sinus Osteoma: A Case Report and Literature Review. Surgeries. 2023 Jun 27;4(3):317-24.
4. Sofokleous V, Maragoudakis P, Kyrodimos E, Giotakis E. Management of paranasal sinus osteomas: a comprehensive narrative review of the literature and an up-to-date grading system. American Journal of Otolaryngology. 2021 Sep 1;42(5):102644.