

RESEARCH ARTICLE

PATHOLOGY

AN UNUSUAL CASE OF SINONASAL OSSIFYING FIBROMA

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ABSTRACT

Ossifying fibroma is an uncommon tumor of the craniofacial skeleton presenting in several variant histopathological subtypes. The overlapping clinical and histopathological features of these subtypes have led to diagnostic dilemma and confusion. Complete excision of this tumor has become a necessity since it is notorious for recurrence. The diagnostic dilemma of ossifying fibroma can be overcome with a combination of clinical, radiological and pathological criteria. Complete surgical excision of the tumor is possible when surgery is based on preplanned criteria

KEY WORDS

Ossifying fibroma ,tumor,surgical excision of the tumor

INTRODUCTION

Fibro-osseous lesions of the sino nasal tract include a variety of non-neoplastic and neoplastic entities. The nonneoplastic group includes fibrous dysplasia, aneurismal bone cysts, and giant cell (reparative) granuloma. Included in the neoplastic category are ossifying fibroma, giant cell tumor, fibromyxoma, osteoblastoma and osteosarcoma.

Ossifying fibromas of the head and neck are circumscribed lesions of varying density and histologically include the presence of trabeculae of smaller bone, a variable amount of vascularised fibrous stoma and osteoblastic rimming of the trabeculae. A subset of craniofacial ossifying fibromas have been described with a predilection for the sino nasal tract. These usually occur in the first and the second decade of life

MATERIAL METHODS

Here we report a case of a 32 yr female presenting with a growth in the nose extending into the nasophaynx which on histopathological evaluation was diagnosed as ossifying fibroma. It was surgically removed and she is doing well during post operative follow up.A 32-year-old female patient reported to our department with the complaint of mild fullness over the right cheek area of 7 months duration. It was nonprogressive and asymptomatic. General physical examination did not reveal any abnormalities. Extraorally, lesion presented as fullness with ill-defined borders on right lower 2/3rd of the face. It was approximately of 1 × 1 inch size. Overlying skin was normal in appearance. Palpation did not reveal any abnormality.

Intraoral examination revealed diffuse expansion of jaw on right maxillary posterior

area, extending anteroposteriorly from distal of upper right second premolar to tuberosity region, measuring approximately 2.5 cm in size. Buccally, the ill-defined enlargement involved only the basal bone, causing partial obliteration of the buccal vestibule. Overlying mucosa was normal in appearance. Palatal expansion was minimal with mild blanching It was nontender and hard in consistency except at buccal aspect of upper right second molar; where it was soft and suggestive of windowing of bone. Upper right second molar exhibited Grade II mobility. She had good oral hygiene status with no clinically detectable dental caries. Right upper molars were nonresponsive to pulp vitality test and fine needle aspiration was negative. Clinical features were suggestive of a benign neoplasm arising from maxillary basal bone which has windowed the bone in relation to upper right second molar and extended superiorly. A differential diagnosis of benign odontogenic, nonodontogenic, and maxillary antral tumors was considered.

On carrying out further investigations, the haematological values were within the normal limits. Rhinoscopy revealed a mass from the middle meatus almost occluding the right nostril approaching the nasal septum. Intraoral periapical radiograph revealed diffuse hazy radiolucency extending from right upper second premolar to third molar causing resorption of the molar roots .Then complete resection of mass was done(Fig1) and sent to pathology department for histopathology.On gross received a mass of size 3x2x2 c. in size.The cut surface was greywhite and gritty to cut.(Fig2).Multiple sections studied revealed bony trabeculae rimmed by osteoblasts admixed with fibrous stroma(fig3 &4)and case was finally diagnosed as ossifying fibroma.

Figure 1
Intraoperative photograph showing resection of mass.

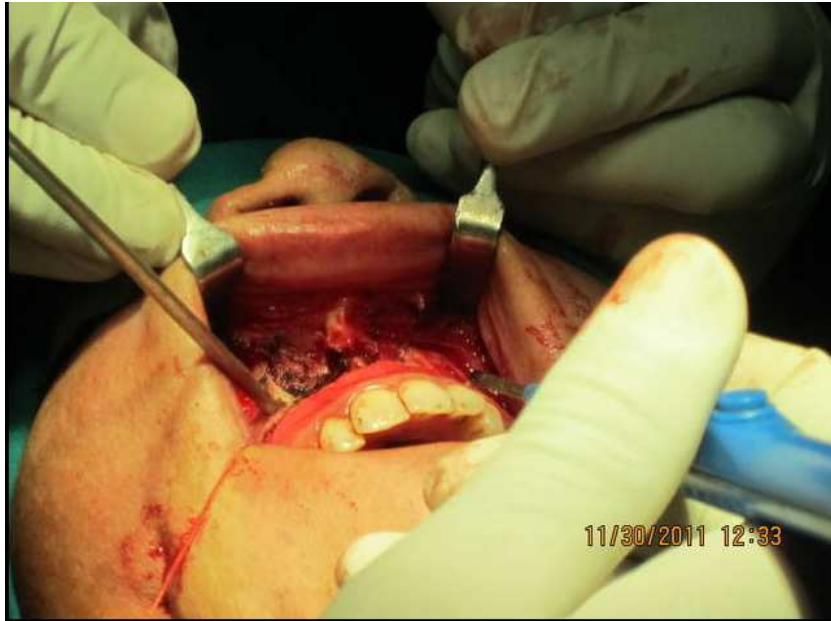


Figure 2
Gross specimen of excised mass



Figure 3
Low power (10X) of ossifying fibroma showing fibrous tissue and bony trabeculae

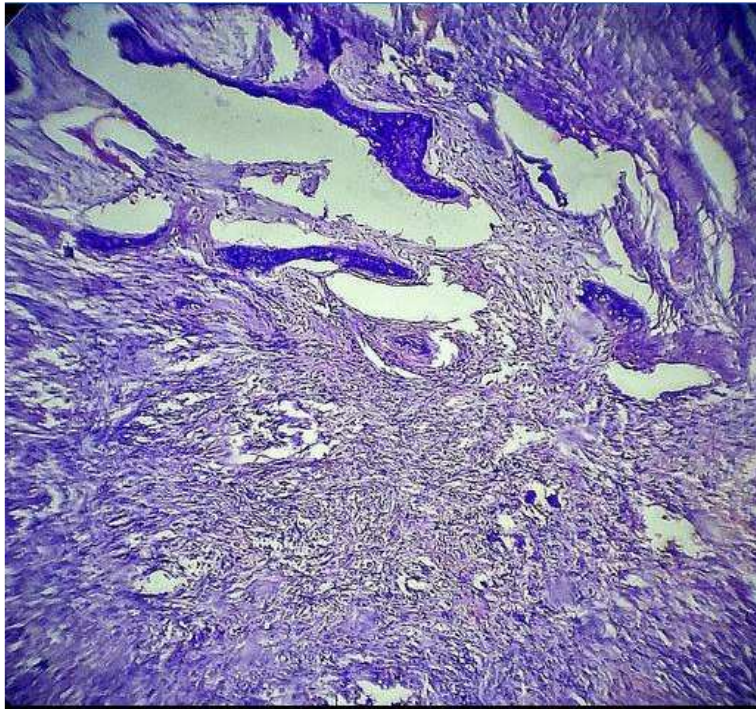
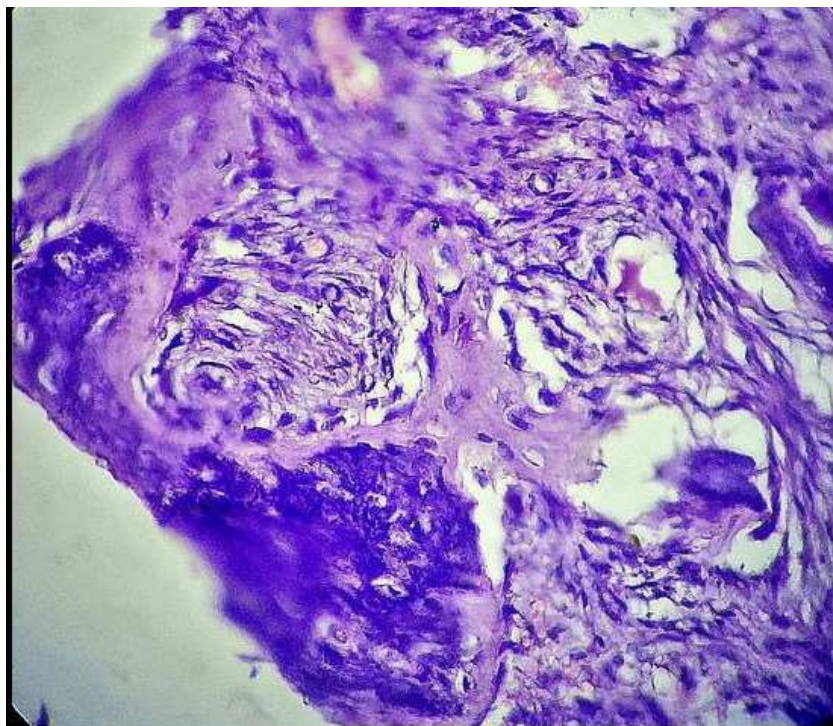


Figure 4
High power view (40X) showing bony trabeculae rimmed by osteoblastic cells.



DISCUSSION

The fibro osseous lesions of the Sino nasal tract may either be non-neoplastic, which includes fibrous dysplasia, aneurysmal bone cysts, and giant cell (reparative) granuloma; and neoplastic growths like ossifying fibroma, giant cell tumor, fibromyxoma, osteoblastoma and osteosarcoma.¹

Ossifying fibroma is a relatively uncommon benign fibro-osseous tumor commonly affecting the craniofacial region. The neoplasm closely resembles the non-neoplastic condition fibrous dysplasia in many respects especially in histology. Hence many pathologists still consider it to be a variant of fibrous dysplasia. The classification of ossifying fibroma with many synonymous nomenclatures has been a matter of controversy. The various names associated with ossifying fibroma are *cementifying* or *cemento-ossifying fibroma*, *peripheral ossifying fibroma*, *psammomatoid* or *juvenile ossifying fibroma* and *ossifying fibromyxoid tumor*. While some authors believe that all these names refer to the same tumor or its variants, others believe that they are separate entities. The absence of typical histopathological features unique to ossifying fibroma and its subtypes or variants has been one of the main reasons for the controversies in reporting. Hybrid fibro-osseous lesions have also been described that contained entities of aneurysmal bone cyst, ossifying fibroma and cementifying fibroma within the same tumor mass.² This suggests that simultaneous occurrence of multiple related lesions is possible in the same tumor mass, which can further complicate the overall picture. Hence multiple sections have to be taken for proper histopathological reporting.

The *conventional ossifying fibroma* usually presents as a solitary, slow growing, monostotic tumor in the third and the fourth decades of life. It shows female predilection and the male to female ratio is around 1:5.3 Although found predominantly in the mandible (75%), it can also arise in the skull base and PNS.³ It has also

been reported to occur in the temporal bone.⁴ The tumor is known to be more aggressive in young patients.⁴ In the jaws, the tumor shows affinity for the molar area.⁵ In the mandible it can give rise to pathological fractures and osteomyelitis in the long run if left untreated⁵.

Presenting signs and symptoms are related to the anatomic location of the lesion. For lesions showing benign behavior and not producing deformity surgery is the mainstay of treatment.

The main difficulty in differential diagnosis of ossifying fibroma is fibrous dysplasia, because ossifying fibroma may have pathologic areas resembling fibrous dysplasia. Hence, an adequate biopsy sample is needed for differentiation. According to previous studies, ossifying fibroma has sharply circumscribed margins with defined borders merging with normal bone, whereas fibrous dysplasia has diffuse blending and poorly defined margins on radiologic examination. On histopathologic evaluation, ossifying fibroma has lamellar mature bone and closely packed spindle cells that form whorls. In fibrous dysplasia, the stroma is more collagenized and less cellular, with abortive bony trabeculae and woven trabecular bone. A generally uniform bone-to-fibrous tissue ratio with fairly evenly scattered bone trabeculae suggests fibrous dysplasia. Fibrous dysplasia has irregular, haphazardly configured bone trabeculae that are C shaped or fish shaped. However, similar bone trabeculae may be found in ossifying fibroma as well⁶

The overall prognosis with most types of ossifying fibroma appears to be good. Despite their tendency for local invasion and recurrence, there are no reported instances of metastatic disease with the exception of certain subtypes of ossifying fibromyxoid tumor. The development of aneurysmal bone cyst in psammomatoid ossifying fibroma has been reported.⁷ Malignant transformation is very rare.

³ Meningitis secondary to invasion into the cranial cavity has been reported and rarely even death may occur ⁸. Surgery is the mainstay of treatment for all types of ossifying fibroma and complete surgical removal did not lead to recurrence in the follow up. If complete surgical removal was not practically possible because of resultant facial deformity maximum tissue needs to be removed by curettage but these cases have a tendency to recur ¹. In our case, as the

tumor was confined to the nose and the nasopharynx, complete surgical removal was done. Although, endoscopic removal has also been tried successfully⁹ these conservative techniques and piecemeal approaches could make histological interpretation more difficult, especially in cases of hybrid lesions. Hence wherever possible, an open surgical technique is advised for adequate visualization and complete excision¹⁰.

CONCLUSION

Ossifying fibroma is a benign fibro-osseous tumor of the craniofacial region that is diagnosed with a combination of clinical, radiological and pathological criteria. Due to the

possibility of the presence of hybrid lesions in this tumor, it is preferable to remove it enmass and take multiple sections for histopathological reporting

REFERENCES

1. S. Kumar, N.H. Dar, M. Ashraf, S.C. Sharma, V. Maheshwari. Ossifying fibroma of nose in a two year old child *Indian Journal of Otolaryngology and Head and Neck Surgery* Vol. 56 No. 1, January - March 2004
2. Blayney AW, El Tayeb AA. The 'hybrid' fibro-osseous lesion. *J Laryngol Otol* 1986 Mar; 100: 291-302.
3. Commins DJ, Tolley NS, Milford CA. Fibrous dysplasia and ossifying fibroma of the paranasal sinuses. *J Laryngol Otol* 1998 Oct; 112(10): 964-968.
4. Vlachou S, Terzakis G, Doundoulakis G, Barbati C, Papazoglou G. Ossifying fibroma of the temporal bone. *J laryngol Otol* 2001 Aug; 115: 654-656.
5. Rosenberg A, Mokhtari H, Slootweg PJ. The natural course of an ossifying fibroma: a case report. *Int J Oral Maxillofac Surg* 1999; 28: 454
6. Morris MR, Blakeslee DB, Zajtchuk JT. Aggressive paranasal sinus ossifying fibroma. *Ear Nose Throat J* 1989;68:260-264-456.
7. Slootweg PJ, Panders AK, Nikkels PG. Psammomatoid ossifying fibroma of the paranasal sinuses: an extragnathic variant of cemento-ossifying fibroma: a report of 3 cases. *J Craniomaxillofac Surg* 1993 Oct; 21(7): 294-297.
8. Johnson LC, Yousefi M, Vinh TN, Heffner DK, Hyams VJ, Hartman KS. Juvenile active ossifying fibroma: its nature, dynamics and origin. *Acta Otolaryngol (Stockh)* 1991; 488(Suppl): 10-40.
9. Choi YC, Jeon EJ, Park YS. Ossifying fibroma arising in the right ethmoid sinus and nasal cavity. *Int J Pediatr Otorhinolaryngol* 2000 Aug 31; 54(2-3): 159-162
10. Wenig BM, Vinh TN, Smirniotopoulos JG, Fowler CB, Houston GD, Heffner DK . Aggressive psammomatoid ossifying fibromas of the sinonasal region: a clinicopathologic study of a distinct group of fibro-osseous lesions. *Cancer* 1995 Oct 1; 76(7): 1155-1165.