

Case Report

Odontogenic myxoma: A case report

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ABSTRACT:

Odontogenic myxoma is defined as a benign odontogenic tumor of mesenchymal origin that is locally invasive and consists of round and angular cells that lie in abundant mucoid stroma. Differences in radiographic presentation makes it a challenging factor to come to a diagnosis for, the features overlap with other benign and malignant conditions of oral cavity. A biopsy is therefore essential in bringing out a clear diagnosis. Here we present a case of an 18 year old female patient with complaint of swelling in her upper right posterior region of jaw since 4 months.

Key words: Odontogenic myxoma, tumor, mesenchyme.

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INTRODUCTION

The histologic features of odontogenic myxoma was apparently first portrayed by German pathologist Rudolph Virchow in 1863, however, myxoma of the jaw was first described by Thoma and Goldman in 1947. In the international histological classification of odontogenic tumors odontogenic myxoma is defined as benign odontogenic tumor of mesenchymal origin that is locally invasive and consists of round and angular cells that lie in abundant and mucoid stroma.¹ The origin of this tumor is believed to be evolved from mesenchymal portion of the tooth germ, it could either be the dental papilla, the follicle, or the periodontal ligament. Clinically, odontogenic myxoma is a benign painless, invasive, slowly enlarging mass causing facial asymmetry. Of all the biopsies submitted, odontogenic tumors comprise about 1.3%, while of all the odontogenic tumors, odontogenic myxoma contributes only 3-11%.² The odontogenic myxoma is a central lesion of the jaws which expands the bone and may cause destruction of the cortex.³ On gross examination, the surgical specimen is a white-gray mucoid, loose, slippery or gelatinous in nature.⁴

In the periphery the imaging features of odontogenic myxoma appears to be well defined whereas the corticated margins if seen are poorly defined, specifically in maxilla. Talking about the internal structure, when it occurs periconally with an impacted tooth, an odontogenic myxoma may have a cyst like unilocular outline, although most have a mixed radiolucent - radiopaque internal pattern. Residual bone trapped within the tumor remodels into curved and straight, coarse or fine septa. The presence of these septa gives the tumor a multilocular appearance. A characteristic septum identified with this tumor is a straight, thin, etched septum. These septa have been described as making tennis racket-like or stepladder-like pattern, but this pattern is rarely seen. In reality, most septa are curved and coarse, but the finding of one or two of these straight septa helps in the identification of this tumor.⁵ Hereby we present a case of an 18 year old female patient, who was diagnosed with odontogenic myxoma.

CASE REPORT

An 18 year old female patient, reported to Oral diagnosis department of SGRD dental hospital with

complaint of swelling in her upper right posterior region of jaw since 4 months causing facial asymmetry. (Figure 1)

Figure 1: Image showing front profile of the patient with swelling in her upper right posterior region of jaw.

Figure 2: Extraoral view showing diffuse swelling in the right side of face resulting in facial asymmetry.



Extraoral examination revealed a hard swelling which was evident in middle third, right quadrant of face, of the same color as that of surrounding skin. The lesion was extending supero-inferiorly from infraorbital margin to the line joining angle of mouth to the ear lobe and antero-posteriorly from ala of nose to the line drawn perpendicular to the outer canthus of the eye descending downwards to the base of mandible. (Figure 2)

On extraoral palpation, all the inspectory findings were confirmed. The swelling was firm, non tender having a smooth surface and margin.

Intraoral examination showcased a swelling which was evident in #14,#15,#16,#17 tooth region additionally involving gingiva and alveolar mucosa obliterating the buccal vestibule. (Figure 3) Swelling was sessile measuring approximately 4cm x 1cm in size, having smooth surface and ill defined borders. An avoid swelling was well appreciated on the right side of hard palate in the same region measuring approximately 3cm x 2cm in size. Additionally a proliferative mass was seen posterior to 18 region of about 1cm x 1cm in size with same color as that of surrounding mucosa. On palpating intraorally, swelling was firm, non tender and having smooth surface, not associated with any rise in temperature, pus discharge or bleeding.

Figure 3: Intraoral view showing a swelling in right buccal vestibular region, extending from #14 to #17 region.



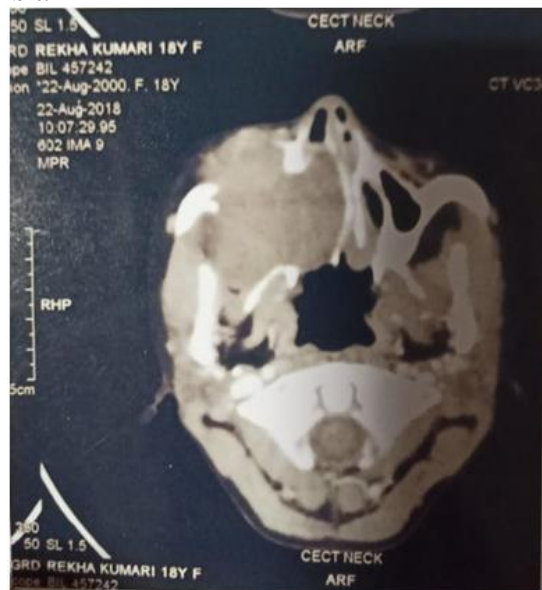
Orthopantomogram (OPG) revealed a large partially corticated radiolucency involving right side of maxilla; antero-posteriorly extending from #12 tooth region to #18 tooth region measuring approximately 5cm in size. Inferiorly it caused destruction of alveolar bone and superiorly it extended into the right maxillary antrum causing elevation of floor of maxillary antrum. (Figure 4) External root resorption of tooth #13, #14, #15 and #16 teeth was also evident.

Figure 4: OPG showing a large partially corticated radiolucency involving right side of maxilla; antero-posteriorly extending from #12 tooth region to #18 tooth region



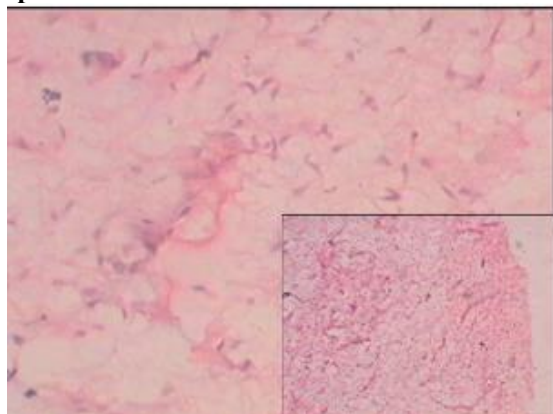
Axial section of CT scan revealed a swelling with soft tissue radiodensity causing destruction of right maxilla and deviation of nasal septum, partly destroying pterygoid plates of maxillary antrum. Coronal section showed soft tissue radiodensity which was well defined involving right side of maxilla, causing destruction of nasal cavity, maxillary antrum and extending upto right orbit. (Figure 5)

Figure 5: CT scan showing radiodensity involving right side of maxilla, causing destruction of nasal cavity, maxillary antrum and extending upto right orbit.



Incisional biopsy was done and the section was submitted for histopathological examination. The given section showed a loose abundant stroma exhibiting angular, stellate and spindle shaped cells along with a fine fibrillar mucinous matrix. (Figure 6) No cellular or nuclear pleomorphism, mitotic activity was seen. The stroma was relatively avascular.

Figure 6: H&E section (X40; inset X10) illustrating loosely arranged stellate and spindle shaped cells with few collagen fibrils and capillaries.



Correlating with clinical and radiographic findings, the above features were suggestive of Odontogenic Myxoma. The patient was referred to a specialized centre for further treatment

DISCUSSION

The odontogenic myxoma is regarded to be a rare, unique, non encapsulated intraosseous neoplasm of the jaw and is locally malignant on the account of its exceptionally high local aggressiveness, high recurrence rate and non metastasizing nature. Zimmeman et al⁶. reported that average age for odontogenic myxoma is 26.5 years, although the

majority of the investigators found that the lesion occurs in second or third decade of life and likewise in our case the age of the patient followed the general trend as she too was in her second decade of life. Literature reveals that there is slight female preponderance and that, the lesion is slightly locally destructive in nature. All these features were well appreciated in our case. The case though a benign tumor was highly aggressive involving almost a segment of maxilla within a short span of about 4 months. The pathogenesis of odontogenic myxoma has been a topic of constant discussion for past two decades, and it has been argued that the designation of the Odontogenic Myxoma as odontogenic tumour is uncertain. According to Lucas, the classification of Odontogenic Myxoma as an odontogenic tumor has been justified by its frequent occurrence in adolescence, its association with missing or unerupted teeth; and sporadic presence of odontogenic epithelium within the neoplasm of myxomatous tissue.⁷Adekeye et al⁸ proposed that no strong evidence for an odontogenic origin could be found except for the fact that the Odontogenic Myxoma may represent a degenerative form of odontogenic fibroma. Present case showed lesion with extension in the posterior region of maxilla. It is uncommon to see a painful swelling and similarly the patient in this case did not complain of pain. The lesion did not cross the medial palatal suture. Another finding is supported in literature that says that the maxillary lesion invade upon the maxillary sinus, however the lesion infiltrating the nasal cavity are rare⁸, which differs with the finding of the present case. Displacement of tooth roots has been found in 74% of patients and root resorption in 9.5%.⁹ Most Odontogenic Myxoma's are reported to be multilocular with coarse or angular trabeculations, yet other studies have an equal distribution between unilocularity and multilocularity.^{10,11}Unilocularity is more commonly seen in children and that too in anterior segment of jaw. In tooth bearing regions, the tumour is often scalloped between the root and root resorption may occur, thereby giving it a false appearance of OKC. However, the classical radiographic features of this lesion, where the bony trabeculae of a multilocular radiolucency intersect at right angles and the lesion causes root resorption, following which tooth mobility occurs was not well appreciated in this case apart from external root resorption of the teeth. The lack of modern imaging modalities in this case is the result of its retrospective nature. Literature indicates that computed tomography and magnetic resonance imaging have been found to be superior to plain radiographs when establishing the intraosseous extent of tumour, cortical perforation and soft tissue involvement and extent.^{12,13,14} The ground substance of odontogenic myxoma comprises about 80% hyaluronic acid and 20% chondroitin sulphate. Tumor cell appear to be inactive with low levels of oxidative enzymes. Alcian

blue stains the myxoid intercellular matrix positively, however, periodic acid- Schiff staining may be negative.⁴

CONCLUSION

Clinical and radiological features of maxillary odontogenic tumours are not pathognomonic, it is essential to have histopathological exam for its definitive diagnosis. Due to its high rate of recurrence, especially because of its gelatinous and mucous aspect, surgical treatment through bone resection is the most indicated modality with addition of following up the patient closely.

REFERENCES

1. Kramer IRH, Pindborg JJ, Shear M. Histological typing of odontogenic tumours. 2nd ed. Berlin: Springer Verlag; 1992.p.23.
2. Ladeinde AL, Ajayi OF, Ogunlewe MO, Adeyemo WL, Arotiba GT, Bamgbose BO, et al. Odontogenic Tumors: a review of 319 cases in a Nigerian teaching hospital. *Oral Surg Oral Med Oral Pathol Oral Radiol Endod* 2005;99:191-5
3. Shafer, Hine, Levy. Shafer's textbook of oral pathology. 6th ed: Saunders Elsevier 2009.
4. Reichart PA, Philipsen HP. Odontogenic Tumors and Allied Lesions. Quintessence Publishing Co Ltd. 2004
5. White SC Pharoah MJ. Benign tumours of the jaws. In White and Pharoah MJ, editors. *Oral radiology principles and interpretation* 5th ed. St Louis: Mosby; 2004.p. 433-34.
6. Zimmerman DC, Dahlin DC. Myxomatous tumors of the jaws. *Oral Surg Oral Med Oral Pathol.* 1958;11:1069- 80.
7. Lucas RB. Pathology of tumours of Oral Tissues. 2nd ed. London and Edinburgh: Churchill Livingstone, 1972:156-163.
8. MacDonald-Jankowsky DS, Yeung R, Lee KM, Li TKL. Odontogenic myxoma in the Hong Kong Chinese: Clinical radiological presentation and systematic review. *Dentomaxillofac Radiol* 2002; 21: 71-83.
9. Kaffw I, Naor H, Buchner A. Clinical and radiological features of odontogenic myxoma of the jaws. *Dentomaxillofac Radiol* 1997; 26: 299-303.
10. Peltola J, Magnusson B, Happonen RP, Borrmam H. Odontogenic myxoma –a radiographic study of 21 tumours. *Br J Oral Maxillofac Surg* 1994; 32: 298-302.
11. Happonen RP, Peltola J, Ylipaavalniemi P, Lamberg M. Myxoma of the jaw bones. An analysis of 13 cases. *Proc Finn Dent Soc* 1988; 84: 45-52.
12. Farman AG, Nortjie CJ, Wood RE. Oral and maxillofacial diagnostic imaging. St Louis: Mosby; 1993. p. 257-60.
13. MacDonald-Jankowski DS, Yeung RWK, Li T, Lee KM. Computed tomography of odontogenic myxoma. *Clin Radiol* 1004; 59: 281-7.
14. Koseki T, Kobayashi K, Hashimoto K, Aiji Y, Tsuchimochi M, Toyama M, et al. Computed tomography of odontogenic myxoma. *Dentomaxillofac* 2003; 32: 160-5.