Odontogenic Myxoma of the Mandible: A Rare Case Report

Moazzam Jawaid, Sunil R Panat, Ashish Aggarwal, Nitin Upadhayay, Nupur Aggarwal, Astha Durgvanshi, GV Sowmya, Swetarchi

ABSTRACT

Odontogenic myxoma (OM) is a rare slow-growing benign, locally invasive tumor, notorious for recurrence. It represents a broad spectrum of lesions of uncertain histogenesis with a characteristic histologic appearance. The prevalence of OM is principally quoted between 0.04 and 3.7% showing its rare occurrence. The second and third decades of life are believed to suffer the most. Similarly the posterior part of mandible is the most affected site. The radiographic features are variable, and the diagnosis is therefore not easy. A case of OM of the mandible with classic radiographic and histologic features is described in a 38-year-old female. A panoramic radiograph revealed a multilocular radiolucent lesion with “tennis-racket” appearance involving mandibular ramus and body while computed tomography (CT) of face revealed invading lesion with perforation of cortical plates. Odontogenic myxoma of the maxilla is less frequent but behaves more aggressively than that of the mandible. However, in spite of its mandibular occurrence the present case is invading, and more aggressive which is a rare finding.

Keywords: Mandible, Odontogenic myxoma, Odontogenic tumor.


INTRODUCTION

Odontogenic myxomas (OM) are benign odontogenic tumors believed to originate from mesenchymal cells of the dental follicle. According to the classification proposed by World Health Organization (WHO), OM is considered as a benign odontogenic tumor having ectomesenchymal origin with or without odontogenic epithelium. The origin is believed to be from the dental papilla, dental follicle, or periodontal ligament. Since it is commonly found in the tooth bearing areas and may be associated with the impacted tooth or unerupted tooth along with association of odontogenic epithelium, therefore it is being considered to have odontogenic origin.

The prevalence of OM is as low as 0.04 to 3.7%. However, they are slightly more common in continents like Asia, Europe, and America. The commonly affected age group is 22.7 to 36.9 years with the occurrence slightly more common in females. The patients aged below 10 years or aged more than 50 years are less commonly affected. The mandible is more regularly involved than the maxillary arch. The mandibular premolar and molar regions, i.e., areas anterior to the molar regions are believed to be affected more than any other region.

On histochemical evaluation of OM, hyaluronic acid and chondroitin sulfate are usually found. The ultrastructural examination revealed multiple cells in the myxomatous tissue with “tennis-racket” appearance involving mandibular ramus and body while computed tomography (CT) of face revealed invading lesion with perforation of cortical plates. Odontogenic myxoma of the maxilla is less frequent but behaves more aggressively than that of the mandible. However, in spite of its mandibular occurrence the present case is invading, and more aggressive which is a rare finding.

Keywords: Mandible, Odontogenic myxoma, Odontogenic tumor.


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CASE REPORT

A 38-year-old female patient reported to the outpatient Department of Oral Medicine and Radiology, Institute
of Dental Sciences, Bareilly, India with chief complaint of swelling on the left side of lower one-third of face and numbness over the lower lip since 2 months. The swelling was initially small in size but got enlarged up to the present size gradually with no associated signs of pus discharge and pain. Extraoral clinical examination exhibited a unilateral, solitary, well-defined, roughly oval-shaped swelling on the left side body of mandible with normal overlying skin without any signs of inflammation as observed in Figure 1. The swelling was hard, nontender with no localized rise in temperature. Intraorally, swelling and vestibular obliteration extending from mesial of 35 up to distal of 37 was noticed in Figure 2. Based on the history and clinical examination, provisional diagnosis of ameloblastoma on the left body and ramus of mandible was given with the differential diagnosis of OM and central giant cell granuloma.

Panoramic examination exhibited a unilateral solitary multilocular radiolucency in the left-side ramus, body, and region measuring 6.41 × 4.41 inch extending anteroposteriorly from the mesial of the 34 up to the distal border of the ramus and superoinferiorly from the sigmoid notch up to the lower border of the mandible. The margins are well defined with the internal structure revealing radiopaque straight septa perpendicular to each other giving it typical tennis-racket appearance. There was resorption of the upper cortical border of the mandibular canal and its downward displacement (Figs 4, 5, and 6). Based on the different radiological examination, the radiographic diagnosis of OM of left-side parasymphysis, body, and ramus of mandible was given with the radiographic differential diagnosis of multicystic ameloblastoma and central giant cell granuloma on left side.

Incisional biopsy was carried out and the histopathological examination of the specimen in 40× magnification involving the ramus, body, and the parasymphysis region measuring 56 × 27.8 × 56 mm extending from mesial of 33 up to distal border of ramus and superoinferiorly from the sigmoid notch up to the lower border of the mandible. The margins are well defined with the internal structure revealing radiopaque straight septa perpendicular to each other giving it typical tennis-racket appearance. There is massive expansive lesion causing the perforation of both buccal and lingual cortical plates with marked buccolingual expansion and the upper cortical border resorption of the mandibular canal and its downward displacement (Figs 4, 5, and 6). Based on the different radiological examination, the radiographic diagnosis of OM of left-side parasymphysis, body, and ramus of mandible was given with the radiographic differential diagnosis of multicystic ameloblastoma and central giant cell granuloma on left side.
showed several round, stellate, and spindle-shaped mesenchymal cells which were arranged in a loose, myxoid stroma along with the presence of few collagen fibrils, suggestive of the OM. Based on the history, clinical, radiological, and histopathological examinations, the final diagnosis of OM of the left-side mandible was given (Fig. 7).

Segmental resection of the right-side mandible was performed under general anesthesia and fixation was achieved with titanium plates. The patient has been put on regular follow-up and responded well to the treatment without recurrence.

**DISCUSSION**

Odontogenic myxoma is being considered by many authors to be benign tumor but having added feature of great invasion of the local tissue usually not observed in case of benign tumors. This odontogenic tumor although invade the surrounding tissue but it does not show metastasis. The clinical representation includes swelling of the jaws which are progressing slowly without signs of pain or any other discomfort to the patient. Since the expansion is usually not associated with presentable symptoms, hence, there may be sudden massive expansion of bone visible along with the perforation of the buccal and lingual cortical plates.5,6

As reported in the previous cases these lesions are usually diagnosed as an incidental finding in the form of multilocular radiolucent lesion having the appearance of “soap bubble.” The clinical picture as commonly described is of benign nature, slow-growing lesion, and asymptomatic in maximum cases. Due to these features, it is usually seen that till the diagnosis is made, the lesion has attained a massive size. Later on, due to continued expansion, some symptoms may appear like paresthesia or pain. If pain is noticed then it is commonly seen in the...
maxillary involvement and that too due to effect on surrounding soft tissues.

Our case presented at the age of 38 years involving which is almost in conformity with the reported literature. But, in our case, not only posterior mandible, body as well as parasympysis region was also involved indicating its invasive behavior. Such type of massive involvement of mandible is very rarely reported in the literature.

The giant expanded OM occurring in this patient possessed clinical history of about 2 months which is usually shorter. The short clinical history was rare and quite different from the consensus. According to many cases reported in the literature, the duration of the lesion always lasts a relatively long period mainly due to its slow growth and pain-free appearance. The short clinical history of the presented case may be due to the reason that the lesion broke the cortices after massive expansion in both the anteroposterior as well as buccolingual direction. Paresthesia of the lower lip was reported in the present case which is generally not observed so frequently.

If OM is to be discussed radiographically, then it may appear to represent several different patterns: Unicystic, multilocular, pericoronal (observed less commonly), and radiolucent–radiopaque (observed rarely). It has been found that when OM occurs periconally along with an impacted tooth, cyst-like unilocular outline is usually observed. This appearance is, however, not seen commonly. There is specific appearance of fine trabeculae inside the lesion in majority of the cases of multilocular variants, mostly described as appearances like soap bubble, honey comb, or tennis-racket pattern. More than half of the reported cases are usually multilocular while little less than half cases are unilocular. The unilocular cases further have predilection for the front jaw region especially in children.

In our case, the panoramic radiograph revealed a multilocular radiolucent lesion with “tennis-racket” appearance involving mandibular ramus and body, while CT face revealed invading lesion with perforation of cortical plates. In the present case there was classic appearance of tennis-racket multilocular radiolucency with straight septa perpendicular to each other giving it classic appearance of OM radiographically.

The aggressive nature of OM is being discussed frequently. This tumor is not sensitive to the radiation therapy, hence, the treatment of choice in maximum cases is surgery. Generally, the capsule is missing in many cases and growth pattern is usually infiltrative. This is responsible for high rates of recurrence when conservative enucleation and curettage are chosen as treatment of choice. Recurrence of tumor can be reduced by means of extensive total or partial resection of jaws, and this treatment modality is commonly performed in the maxilla in order to preserve the vital structures. Irrespective of the technique of surgical removal, advanced imaging modalities, such as CT or MRI should be used to clearly analyze the tumor margins, to ensure that the true extent of the tumor is clearly defined before surgery. In our case also, CT was performed which revealed the exact invasive behavior of the tumor in all the three planes. There was complete surgical resection of the tumor with extra normal bone margin with 2 mm clearance.

CONCLUSION

Myxomas are very rare and locally aggressive tumors. They have a tendency to recur if not treated aggressively. An accurate and early diagnosis and detailed radiographic evaluation along with very sound surgical planning and its implementation are required to improve the prognosis.

REFERENCES