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Odontogenic Myxoma of the Mandible : Case

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ABSTRACT

Odontogenic myxomas are benign but locally aggressive neoplasms found almost exclusively in the jaws and arise only occasionally in other bones. This is a case of odontogenic myxoma occurring in the mandible of a 49-year-old male patient with a brief review of clinical and radiological features, and diagnostic and operative management of odontogenic myxoma.

Key words: Odontogenic myxoma, benign seen in mandible, surgical resection.

INTRODUCTION

Odontogenic myxomas (OMs) are benign tumors derived from embryonic mesenchymal elements of dental anlage[1,2] (Sivakumar G, Abiose BO *et al* 2008) . Odontogenic myxomas appears to originate from dental papilla, follicle, or periodontal ligament. The evidence for its odontogenic origin arises from its almost exclusive location in the tooth bearing areas of the jaws, its occasional association with missing or unerupted teeth, and the presence of odontogenic epithelium[3] (Reddy SP, *et al* 2010).

According to the World Health Organization (WHO), Odontogenic myxomas is classified as benign tumor of ectomesenchymal origin with or without odontogenic epithelium. The odontogenic nature of the myxomas has been challenged by some authors because of the appearances, whilst consistent with odontogenic ectomesenchyme, could also represent a more primitive fibroblastic or undifferentiated tissue[4] (Lombardi T, *et al* 2010).

Most of the odontogenic myxomas reported were young adults affected mostly in their second and third decade of life with marked female predilection[5](Lin YL, Basile JR 2010) . Odontogenic myxoma can occur both in bone and soft tissue. Although intraosseous myxoma has been reported in various anatomical sites, the majority of these tumors occur in the mandible, followed by the maxilla[6] (Spencer KR, Smith A 1988). Clinically, odontogenic myxomas are slow-growing, painless, and site-aggressive tumors. Since pain and hypoesthesia are not common, the lesions may reach a considerable size before patient perceives its existence and seeks treatment. Larger lesions may cause tooth displacement and cortical bone expansion . Radiologically, the appearance may vary from a unilocular radiolucency to a multicystic lesion with well-defined or diffused margins with fine, bony trabeculae within its interior structure expressing a “honey coumbed,” “soap bubble,” or “tennis racket” appearance[(7)(Singaraju S, et al 2010)]. A unilocular appearance may be seen more commonly in children and in anterior parts of the

jaws. Root resorption is rarely seen, and the tumor is often scalloped between the roots .

Odontogenic myxomas are not encapsulated, thus promoting significant infiltration into the adjacent medullar bone. The odontogenic myxomas exhibits abundant extracellular production of ground substance and thin fibrils by the delicate spindle-shaped cells. These undifferentiated mesenchymal cells are capable of fibroblastic differentiation also. Depending upon the pattern of differentiation, the histological nature of

Fig: 1: Front View

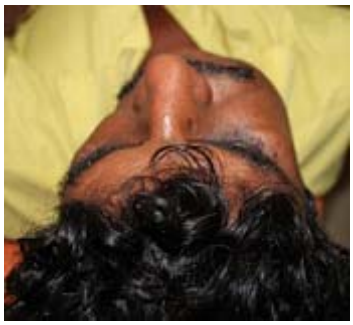

Fig. 2: Bird eye view

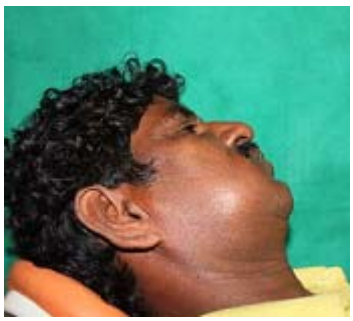

Fig. 3: Extra-oral photograph

Fig. 4: Intra-oral photograph

Fig. 5: Pre-operative

Fig. 6: Post operative

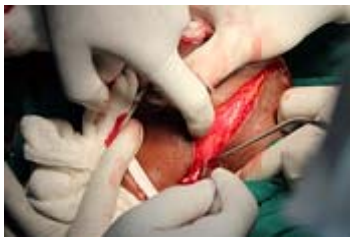

Fig. 7: Skin incision

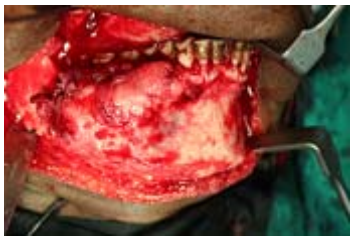

Fig. 8: Exposing lesion

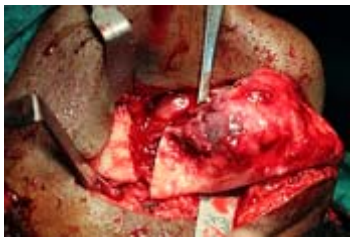

Fig. 9: Mandibular resection done

Fig. 10: Resected mandible

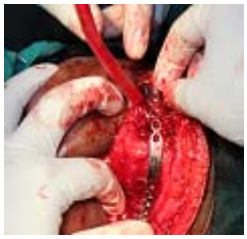

Fig. 11: Reconstruction plate

Fig. 12: Wound closure

the tumor varies. It may be completely myxomatous tissue or varying proportions of myxomatous and fibrous tissue. Some regard odontogenic myxomas as a modified form of fibroma in which myxoid intracellular substance separates the connective tissue[8] (Adekeye EO, et al 1984) . The treatment of choice for odontogenic myxomas is surgical excision by enucleation, curettage, or block resection. Odontogenic myxomas carries a high recurrence rate. Due to poor followup and lack of reports, a precise and accurate recurrence rate is still missing. The high recurrence rate of 25% is reported when more conservative treatments are used[9] (Rocha AC, *et al* 2009). In view of its rarity, large size involving body and ramus of the mandible, and diagnostic and operative dilemmas encountered while managing, the present case is here with reported.

Case Report

A 49-year-old male patient was referred to the Department of Oral and Maxillofacial surgery for treatment(Fig 1, 2). Patient gave a six-month history of a pain and swelling in the right posterior mandible. Patient complains of dull and throbbing pain. Initially, the swelling was small in size and showed a gradual increase to its present dimensions. Clinical examination revealed a firm, non-tender swelling expanding the buccal and lingual cortices of the mandible, extending from right first premolar region to third molar region, and it obliterated the buccal vestibule. The skin over the swelling was normal, and there was no history of paresthesia.

Extraoral photograph, showing swelling in the right-side mandibular body. Intraoral photograph, showing slight lingual cortical expansion in the right-side of mandible.(Fig 3, 4)

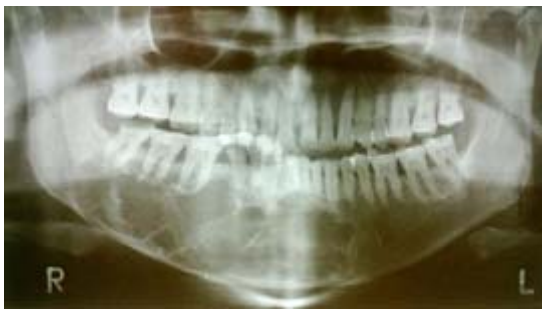

Fig. 13: Pre-operative radiograph

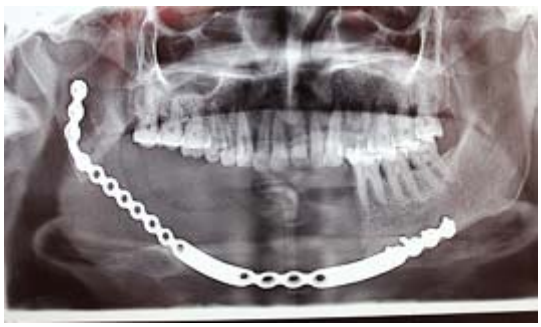

Fig. 14: Post-operative radiograph

The panoramic radiograph showed a large well-defined, sclerotic margined, multilocular radiolucent lesion with “soap bubble” appearance (Fig 13) extending from the lower right canine to 1 cm distal to the third molar and also showed first molar mesial root resorption. The right mandibular lateral occlusal radiograph showed multilocular radiolucent lesion with expansions of buccal and lingual cortices. Incisional biopsy was made and a histopathological examination of the tissue sample exhibited rounded, stellate, and spindle-shaped mesenchymal cells arranged in a loose, myxoid stroma with few collagen fibrils. These results were suggestive of odontogenic myxomas. Segmental resection of the right side mandible (angle of the right mandible to premolar on the left side) was performed under general anesthesia (PROPOFOL) (Fig 7,8,9,10) . Reconstruction was done by reconstuction plate(fig 11,14) and closure done with 3-0 vicryl and 4-0 ethylon.(Fig 12)

DISCUSSION

The prevalence of odontogenic myxomas is principally quoted between 0.04% and 3.7% [10] (Slootweg PJ, Wittkampf ARM 1986). In Asia, Europe, and America, relative frequencies between 0.5% and 17.7% have been reported(11)(Lu Y, Xuan M, Takata T, 1998). There was lack of uniformity in the most common age group studies of OM, but most of the studies showed 22.7 to 36.9 years, and it is rarely seen in patients younger than 10 years of age or older than 50[12](Ajayi OF *et al* 2004) . The

mandible appears to be more frequently affected than the maxilla. There are no clinical or radiological signs that would allow a physician to distinguish myxoma from odontogenic and nonodontogenic lesions; however, histological analysis shows several lesions that could be misinterpreted as myxoma. The majority of the myxomas are almost always asymptomatic, although some patients present with progressive pain in lesions invading into surrounding structures with eventual neurological disturbances[13] (Vallejo GH *et al*, 2004). Odontogenic myxomas of the maxilla is less frequent but behaves more aggressively than that of the mandible[14] (Ghosh BC *et al* 1973). The present case is invading with intermediate pain, and more aggressive, in spite of its mandibular occurrence. Odontogenic myxomas radiographically appear as multilocular or unilocular radiolucencies. Differential diagnosis like ameloblastoma, ameloblastic fibroma, odontogenic fibroma, central hemangioma, or odontogenic keratocyst along with odontogenic myxomas could be listed as initial diagnostic hypothesis based on the clinical and radiological findings.

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