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Odontogenic myxoma occurrence on the mandible: A case report

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***Abstract*---**Odontogenic Myxoma is rare benign tumour . This tumour is known for its locally aggressive nature . This is a case report of patient diagnosed with odontogenic myxoma and the treatment modality advocated to him.

***Keywords*---**odontogenic, myxoma, benign.

Introduction

According to literature odontogenic myxoma is considered to be a rare, benign tumour which occurs in the jaw. This particular entity is characterised by a slow , painless bony deformity which results in a facial asymmetry. Mesenchymal portion of the tooth germ or an un erupted tooth is a probable reason for the occurrence of this benign tumour [1] . Several authors advocate that this benign tumour does not have any sex prediliction, however when reviewing through literature it can be observed that this tumour has a slight female prediliction [2] .In the current scenario the male to female ratio is quoted as 1 :1.5. Through many decades it can be observed that this tumour most commonly occurs on the mandible when compared to maxilla [3] .

There are many differential diagnosis for this benign tumour it includes ameloblastoma, intraosseous hemangioma, aneurysmal bone cyst, glandular odontogenic cyst, central giant cell granuloma, cherubism, metastatic tumor, simple cysts, odontogenic keratocyst, and osteosarcoma [4] . This is a case report of a 38 year old male patient who reported with a swelling on the right side of the mandible, which was histopathological diagnosed as odontogenic myxoma.

Case Report

A 38-year old male patient presented to the department of Oral and Maxillofacial Surgery, Saveetha dental college ,chennai with the chief complaint of a slowly progressing, painless swelling over the right side of lower jaw for the past 8 months (Fig 1). On clinical examination during palpation the swelling was non tender and hard with areas of firmness. It was observed that the swelling extended from the superior to the inferior border, and from the angle of mandible to the midline. Expansion of the mandible both buccally and lingually in the affected region was observed. (Fig 2)

The mouth opening of the patient was normal. On general examination no significant findings were observed. Orthopantogram (OPG) revealed multilocular radiolucency which extended from the right second premolar to the right molar tooth region. (Fig 3). There was no displacement or resorption of any tooth in the mandible. Cone beam computerised tomograph (CBCT) showed a well defined multilocular, expansile, lytic lesion which involved the lower right body of the mandible extending from the right second premolar region to the right second molar region also the midline of the mandible was not crossed (Fig. 4).

Under local anaesthesia an incisional biopsy was done by raising mucoperiosteal flap in the affected region (Fig 5) . The biopsy specimen was white in colour , soft to firm in consistency covered with a slimy material. Histopathological analysis showed a loose myxoid connective tissue stroma with haphazardly arranged stellate , round and spindle shaped cells along with few collagen fibres. There was also evidence of a cluster of epithelial cells . These features were suggestive of benign odontogenic neoplasm - Myxoma.

Surgical resection of mandible was planned. After nasal intubation and surgical preparation, submandibular incision was given from right retromandibular region to right angle region and mandible was exposed by layer wise dissection (Fig 6,7).First premolar was extracted and line of resection was marked with a flat fissure bur. Resection was done using flat fissure bur ,chisel and mallet (Fig 8). Intermaxillary fixation was achieved with eyelets and titanium reconstruction plate was fixed with four bicortical screws (Fig 9). The wound was closed in anatomical planes; extra orally by vicryl and ethilon and intraorally by vicryl only (Fig 10) Postoperatively the patient was assessed with an OPG (Fig 11). Postoperative healing of the patient was uneventful and showed good prognosis for the reconstruction using a fibula graft:(Fig 12 ,13).

Fig 1

Fig 2

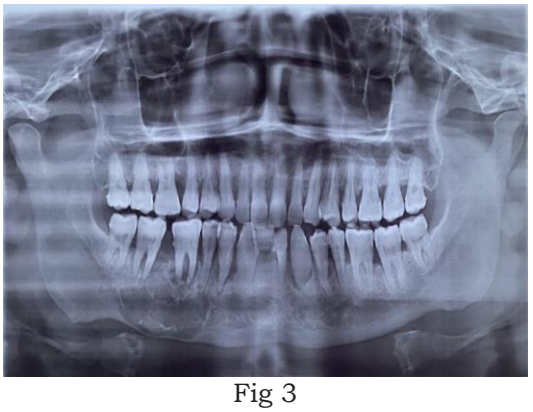

Fig 3

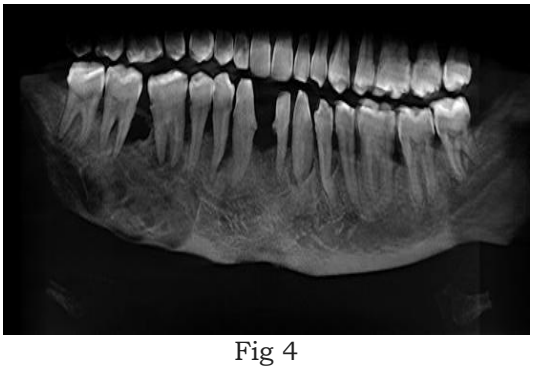

Fig 4

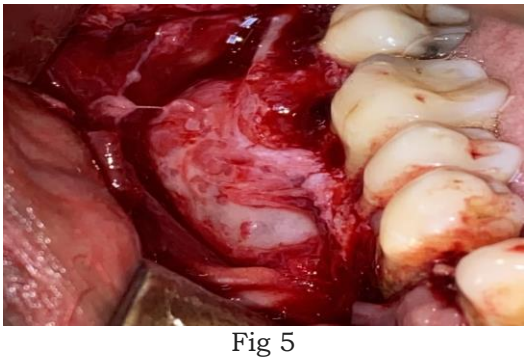

Fig 5

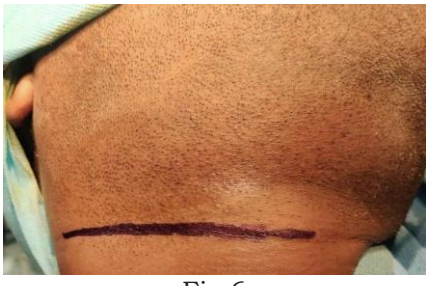

Fig 6

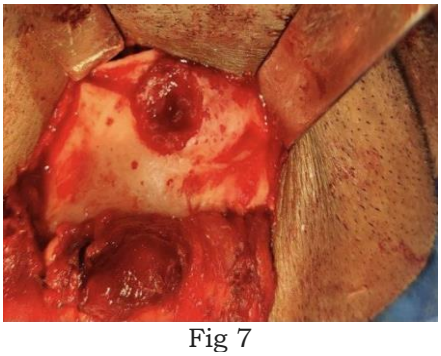

Fig 7

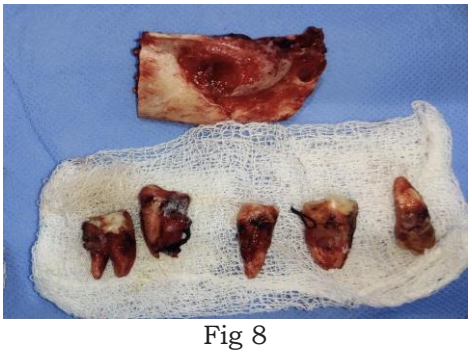

Fig 8

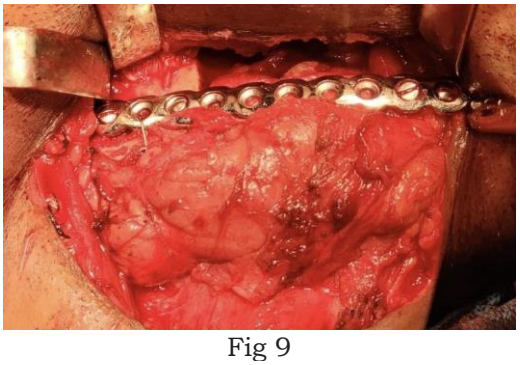

Fig 9

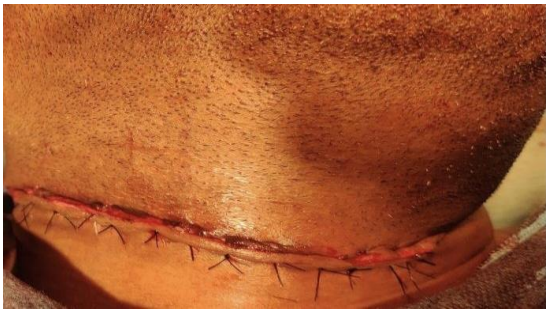

Fig 10

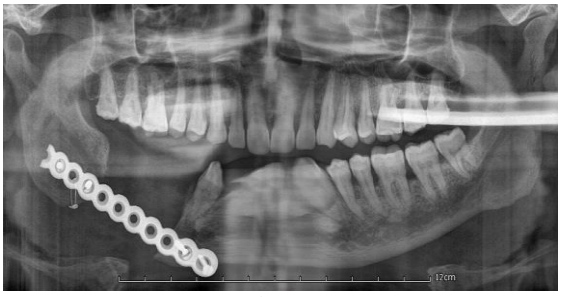

Fig 11

Fig 12

Fig 13

Discussion

The term ‘ myxoma’ was coined by virchow. In 1947 Thoma and Goldman first described myxomas of odontogenic origin. In the head and neck region myxomas

commonly occur in the head and neck region , however a small portion also occurs in the pharynx , larynx , paranasal sinuses and other soft tissues [5,6]. According to Shafer et al these lesions are more common in the adult women , however in our case we observed it in an adult man , which was in accordance with the research conducted by Zang et al [7] .

Simon et al reported that the incidence of tumour ranges from 0.5 % - 19%. According to the retrospective study conducted by Regezi et al odontogenic myxoma constituted about 3% of the 706 odontogenic tumour [8]. Several clinical scenarios have revealed that the usual age of occurrence of odontogenic myxoma is 10 -40 years of age, with a peak incidence in the third decade of life [9] . The aetiology of the tumour is considered to mesenchymal in origin. Suggesting that it can be derived from the mesenchymal portion of the tooth germ including the dental papilla , follicle or periodontal ligaments. Several researchers suggest that this tumour results from the myxomatous degeneration of fibrous stroma [10]. In several clinical scenarios it can be observed that this tumour is slow growing , but is locally aggressive and has a high recurrence rate [10,11] . This benign tumour as stated before should be differentiated from other tumours which causes bony expansions such as dentigerous cyst, odontogenic keratocyst, ameloblastoma, central giant cell tumor, fibro osseous lesions, central hemangioma.

Chrcanovic et al suggested that though benign in nature this tumour is known for it invasive and infiltrative nature into the surrounding bone [12].This property of invasiveness is attributed to the presence of matrix metalloprotinease 2 and 9 which causes the degradation of the extra cellular matrix [13]. According to Mauro et al these enzymes aid the tumour cells to penetrate the bony trabeculae by acting on the extra cellular matrix thus aiding in the tumour growth [14] . On gross examination ,odontogenic myxoma appears as grayish white nodular heterogeneous mass of variable consistency , with a glistening surface. Some specimens may have a true capsule , uncapsulated or poorly demarcated from the surrounding tissues [15] . In the present case there is a capsule.

Microscopically, the tumour is relatively hypocellular and composed of haphazardly arranged stellate, spindle-shaped, and round cells in an abundant loose myxoid stroma that contains only a few collagen fibrils Histopathologically the tumour depicts a mucoid rich extra cellular matrix with bony trabeculae , irregular calcifications , scant blood vessels and capillaries [15,16]. All the features were observed in the present case. This benign tumour has been described radiologically with several appearances such as mottled , soap bubble , tennis racquet and honey comb [15–18]. This lession appears invariably as a radiolucent lession , however some times it can be a combination of mixed radiolucency - radiopacity. The tumour can appear unilocular or multilocular . However clinical scenarios state that multilocular entities are more common than unilocular ones [11] . The margins of the lession can appears as corticated , non corticated , poorly defined or diffuse [15–17] .

Surgery is the treatment protocol for the management of this tumour. It can be of various types such as enucleation and curettage , wide excision and resection. The proposed treatment of myxoma is surgical resection with a minimum of 1 cm of bone margin and one tumour free anatomic barrier [19]. However literature

indicates that conservative or narrow resection of margins for myxomas of paediatric maxilla is found to be effective [20]. When radical surgeries involving the resection of the adjacent tissue is performed , delayed reconstruction should be performed because of high chances of recurrence rate [20,21] . Any treatment modality practiced requires a careful follow up period for 5 years [1] .

Conclusion

Odontogenic myxomas are uncommon entities of benign tumours which occurs in the jaw. They are known for their aggressive nature and high recurrence rates [16]. A proper clinical, histopathological diagnosis is very vital in arriving at an accurate surgical planning. The correct treatment protocol and a strict clinical follow up is mandatory for a good prognosis.

Reference

1. Kumar N, Kohli M, Pandey S, et al. Odontogenic myxoma. *J Maxillofac Oral Surg* 2014; 13: 222–226.
2. Hansen LS, Ficarra G. Mixed odontogenic tumors: An analysis of 23 new cases. *Head & Neck Surgery* 2007; 10: 330–343.
3. Abiose BO, Ajagbe HA, Thomas O. Fibromyxomas of the jawbones—A study of ten cases. *British Journal of Oral and Maxillofacial Surgery* 1987; 25: 415–421.
4. Rocha AC, Gaujac C, Ceccheti MM, et al. Treatment of recurrent mandibular myxoma by curettage and cryotherapy after thirty years. *Clinics* 2009; 64: 149–152.
5. Shafer WG. *A Textbook of Oral Pathology*. 1963.
6. Yavuzer R. P.W. Booth, S.A. Schendel, J. Hausamen: Maxillofacial Surgery. *European Journal of Plastic Surgery* 2003; 26: 107–107.
7. Zhang J, Wang H, He X, et al. Radiographic examination of 41 cases of odontogenic myxomas on the basis of conventional radiographs. *Dentomaxillofacial Radiology* 2007; 36: 160–167.
8. Regezi JA, Kerr DA, Courtney RM. Odontogenic tumors: analysis of 706 cases. *J Oral Surg* 1978; 36: 771–778.
9. Kaffe I, Naor H, Buchner A. Clinical and radiological features of odontogenic myxoma of the jaws. *Dentomaxillofacial Radiology* 1997; 26: 299–303.
10. Gaillard F. Odontogenic myxoma. *Radiopaedia.org*. Epub ahead of print 2008. DOI: 10.53347/rid-1763.
11. Abougazia A. Odontogenic myxoma. *Radiopaedia.org*. Epub ahead of print 2013. DOI: 10.53347/rid-21910.
12. Chrcanovic BR, Gomez RS. Odontogenic myxoma: An updated analysis of 1,692 cases reported in the literature. *Oral Dis* 2019; 25: 676–683.
13. Miyagi SPH, Hiraki KRN, Martins MD, et al. Expression of matrix metalloproteinases 2 and 9 in odontogenic myxoma in vivo and in vitro. *Journal of Oral Science* 2008; 50: 187–192.
14. Mauro A, Lipari L, Tortorici S, et al. Expression of MMP-2 and MMP-9 in odontogenic myxoma in a child: report of a clinical case. *Odontology* 2013; 101: 233–238.
15. Canalis RF, Smith GA, Konrad HR. Myxomas of the Head and Neck. *Archives of Otolaryngology - Head and Neck Surgery* 1976; 102: 300–305.

16. Neville BW, Damm DD, Allen CM, et al. Odontogenic Cysts and Tumors. *Color Atlas of Oral and Maxillofacial Diseases* 2019; 411–456.
17. Noffke CEE, Raubenheimer EJ, Chabikuli NJ, et al. Odontogenic myxoma: review of the literature and report of 30 cases from South Africa. *Oral Surgery, Oral Medicine, Oral Pathology, Oral Radiology, and Endodontology* 2007; 104: 101–109.
18. Chabikuli NJ. *A Retrospective Study of the Clinical and Radiological Features of Odontogenic Myxoma Diagnosed at the University of Limpopo, Medunsa Campus*. 2005.
19. Marx RE, Stern D. *Oral and Maxillofacial Pathology: A Rationale for Diagnosis and Treatment*. Quintessence Publishing (IL), 2012.
20. Rotenberg BW, Daniel SJ, Nish IA, et al. Myxomatous lesions of the maxilla in children: a case series and review of management. *Int J Pediatr Otorhinolaryngol* 2004; 68: 1251–1256.
21. Leiser Y, Abu-El-Naaj I, Peled M. Odontogenic myxoma – A case series and review of the surgical management. *Journal of Cranio-Maxillofacial Surgery* 2009; 37: 206–209.
22. Suryasa, I. W., Rodríguez-Gámez, M., & Koldoris, T. (2021). Health and treatment of diabetes mellitus. *International Journal of Health Sciences*, *5*(1), i-v. https://doi.org/10.53730/ijhs.v5n1.2864
23. Suryasa, I. W., Rodríguez-Gámez, M., & Koldoris, T. (2021). The COVID-19 pandemic. *International Journal of Health Sciences*, *5*(2), vi-ix. https://doi.org/10.53730/ijhs.v5n2.2937