



Odontogenic Myxoma of Mandible Appeared as an Ameloblastoma on CT Imaging

Pratiksha Yadav^{1*} and Dhaval Thakkar¹

¹Department of Radio-diagnosis, Dr. D. Y. Patil Medical College Hospital and Research Centre, Pimpri, Pune, Maharashtra, India.

Authors' contributions

This work was carried out in collaboration between both authors. Author PY designed the study, wrote the protocol. Author DT wrote the first draft of the manuscript. Authors PY and DT managed the literature searches. Authors PY analyses the study performed on the CT scan. Both authors read and approved the final manuscript.

Article Information

DOI: 10.9734/BJMMR/2015/12164

Editor(s):

(1) E. Umit Bagriacik, Department of Immunology, Gazi University, Turkey.

Reviewers:

(1) Anonymous, Muhimbili University, Dar es Salaam, Tanzania.

(2) Anonymous, Rajasthan Dental College and Hospital, India.

(3) Anonymous, University of São Paulo, Brazil.

(4) Ayman Hegab, Oral and Maxillofacial Surgery, Faculty of Dental Medicine, Al-Azhar University, Cairo, Egypt.

(5) Laura Priscila Barboza De Carvalho, Department of Odontologia, University Center of João Pessoa, Brazil.

Complete Peer review History: <http://www.sciencedomain.org/review-history.php?iid=672&id=12&aid=6279>

Case Study

Received 2nd June 2014
Accepted 8th September 2014
Published 30th September 2014

ABSTRACT

Odontogenic myxoma is a rare benign tumor of ectomesenchymal origin, which can arise from dental papilla, follicle or periodontal ligament. Most commonly it arises from mandible followed by maxilla. We report a case of odontogenic myxoma in a 23 years old female who came with complaint of painless swelling in left mandible. CT scan revealed an expansile radiolucent lesion involving the left mandible body with cortical thinning and mild destruction at few places. Biopsy was done which was suggestive of odontogenic myxoma. Surgery was done and odontogenic myxoma was proved on the biopsy.

Keywords: Odontogenic myxoma; mandible; ameloblastoma.

*Corresponding author: Email: yadavpratiksha@hotmail.com;

1. INTRODUCTION

Odontogenic myxoma is a benign non capsulated tumor of jaw. It is slow growing tumor, usually painless however it is locally aggressive. It may result in extensive osseous destruction and cortical expansion. CT appearance of odontogenic myxoma is lucent lesion with multiple radiopacities. Ameloblastoma is locally aggressive odontogenic tumor. Radiologically ameloblastoma give variable appearance which may be solid, unilocular or multilocular cyst.

2. CASE REPORT

A 23 years old female had come with the painless swelling involving the left mandible since last 4 months. On clinical examination there was a swelling seen posterior to the 2nd molar tooth, which is displaced antero-laterally. Intraoral and panoramic radiography reveled an expansile radiolucent lesion involving the body of the mandible posterior to 2nd molar tooth on left side. CT scan was done for further evaluation, which showed an expansile hypodense lesion involving the body of left mandible (Figs. A-D). There were few fine trabeculations also seen in the inferior aspect (Figs. 1 A and B). There was thinning of the cortex seen with interruption of the cortical plate continuity at few places (Figs.1 A & C). Ameloblastoma was given as the likely diagnosis; differential diagnosis of odontogenic myxoma was given. Biopsy was done which was suggestive of odontogenic myxoma. Wide excision surgery was done and histopathology revealed the tumor was composed of loosely arranged, spindle shaped and stellate cells in myxoidstroma which is consistent of odontogenic myxoma (Fig. 2).

Reconstruction surgery of the mandible was also done.

3. DISCUSSION

Prevalence of Odontogenic myxoma has been accounted to be 0.04% to 3.7%, of which 0.5% to 17.7% of cases have been reported in America, Europe and Asia [1,2]. The majority of the patients with Odontogenic myxoma are seen in second and third decade [3]. Females are twice more commonly affected than males [4]. The mandible appears to be more frequently involved than maxilla, with higher predilection towards posterior regions [5]. Odontogenic myxoma rarely cross midline and are confined to one side [4]. There are no specific clinical or radiological

signs that would allow a physician to distinguish myxoma from odontogenic and nonodontogenic lesions, thereby making its diagnosis even more difficult. Odontogenic myxomas are true odontogenic tumors, which originates from the mesodermal portion of the odontogenic apparatus [6]. They are benign, slow growing tumors usually asymptomatic and painless. Although some patients present with progressive pain in lesions due to local invasion into surrounding soft tissue structures with eventual neurological disturbances leading to osseous destruction and cortical expansion [1,7]. Odontogenic myxoma of the maxilla is less frequent but behaves more aggressively than that of the mandible [5]. When patient present with swelling of jaw first investigation is panoramic radiography, however if swelling is hard and fixed to adjacent tissue CT scan is necessary to evaluate the contour of the lesion, it's content and extent in the adjacent tissue. Radiographically, odontogenic myxoma lesions appear as radiolucent lesions separated by bony trabeculae that form geographic compartments [8]. They may appear as a unilocular or multilocular radiolucency with characteristic "honeycomb", or "soap-bubble" pattern with cortical expansion and tooth displacement [4].

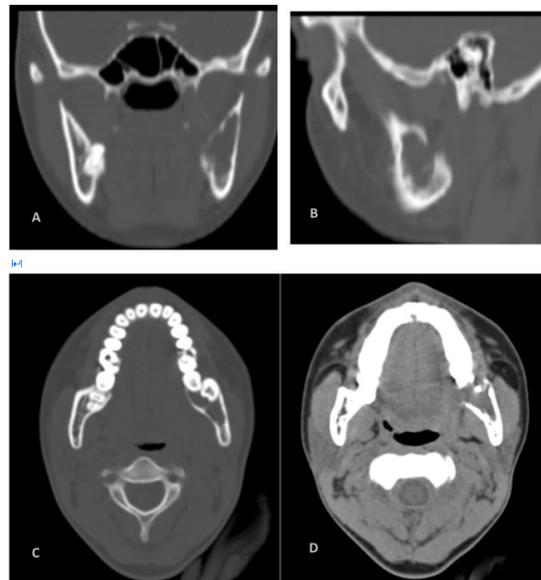


Fig. 1. Coronal, saggital and axial CT scan of the patient showing a unilocular radiolucent expansile lesion involving the body of the left mandible, fine trabeculations seen at inferior aspect, cortical thinning with cortical destruction seen at some places

Differential diagnoses include ameloblastoma, ameloblastic fibroma, odontogenic fibroma, central hemangioma, or odontogenic keratocyst aneurysmal bone cyst, central giant cell granuloma, metastatic tumor and, in cases of unilocular lesions, simple cysts [4,5].

Ameloblastoma are benign however locally aggressive tumors, it arises from the surface epithelium, remnant of dental lamina or pleuropotential epithelial cells. Almost 10% odontogenic tumors are ameloblastoma in which 80% are located in the mandible [8]. Approximately 5% ameloblastoma arises from the epithelial lining of dentigerous cyst [8]. It shows variable radiological features, which depends on its histology. Solid or multicystic appearance is most common which are seen in 80% of the ameloblastoma. Typical appearance on CT scan is multicystic lesion in mandible with internal septations, honeycomb or soap bubble appearance. May present with a unilocular cyst with impacted tooth, these findings may resemble dentigerous cyst. However presence of solid component and internal septae help in differentiate the lesion with dentigerous cyst [9]. In our case there is an expansile lytic lesion with cortical erosions and trabeculations, so these findings can be seen in ameloblastoma and odontogenic myxoma. It was painless swelling and ameloblastoma and odontogenic myxoma both are usually painless. In few cases when aggressive local invasion occur they can present with pain.

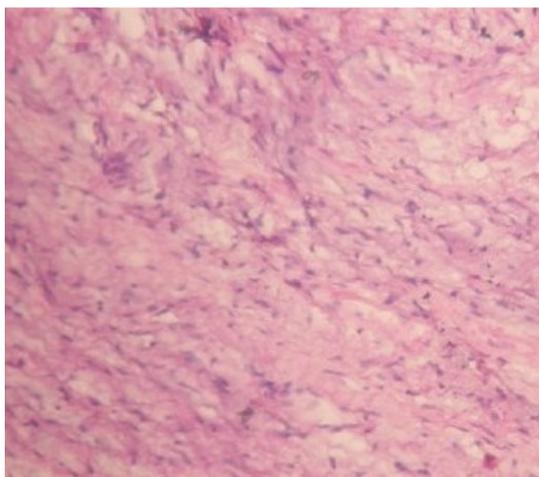


Fig. 2. Pictomicrograph odontogenic myxoma showing the spindle shaped and stellate cells in myxoidstroma

A biopsy is necessary to ascertain an accurate diagnosis. Odontogenic myxoma shows little encapsulation histologically and often extends into the soft tissue through the bony structures, so that complete resection is difficult and recurrence is common [10]. Since they tend to infiltrate and recur, they are most commonly treated with wide margin surgical resection [11]. The conservative management of myxoma; excision and curettage with liquid nitrogen cryotherapy, is an alternative method proposed to radical resection. In this, liquid nitrogen is used which will eliminate any remaining neoplastic cells by bone devitalization without affecting the inorganic structure, thereby yielding new bone formation. However, a minimum of five years of surveillance is required to confirm that the lesion has healed, and periodical clinical and radiographic follow up should be maintained indefinitely irrespective of treatment modality applied to treat odontogenic myxoma [5].

4. CONCLUSION

Odontogenic myxomas are rare odontogenic tumors. These tumors are difficult to differentiate with ameloblastoma on radiological findings. Clinical findings and pathological findings are necessary to reach the diagnosis. However the role of CT scan is important to evaluate the extent of the lesion and cortical erosions.

CONSENT

Authors declare that 'written informed consent was obtained from the patient for publication of this case report and accompanying images.

ETHICAL APPROVAL

Approval from the ethical committee of the hospital was obtained.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

REFERENCES

1. Slootweg PJ, Wittkamp ARM. Myxoma of the jaws. An analysis of 15 cases. *Journal of Maxillofacial Surgery*. 1986;14(1):46–52.
2. Lu Y, Xuan M, Takata T, et al. Odontogenic tumors: A demographic study of 759 cases in a Chinese population. *Oral*

- Surgery, Oral Medicine, Oral Pathology, Oral Radiology and Endodontics. 1998;86(6):707–714.
3. Weber AL, Kaneda T, Scrivani SJ, Aziz S. Jaw: Cysts, tumors and nontumorous lesions. In: Som PM, Curtin HD, eds. Head and neck imaging, 4th ed. St. Louis, MO: Mosby. 2003;930–994.
 4. Elison NM, Simon, Matthias AW. Merckx, Edda Vuhahula, David Ngassapa, Paul J. W. Stoelinga: Odontogenic myxoma: A clinicopathological study of 33 cases. Int. J. Oral Maxillofac. Surg. 2004;33:333–337.
 5. Manne RK, Kumar VS, Venkata Sarath P, Anumula L, Mundlapudi S, Tanikonda R. Odontogenic myxoma of the mandible. Case Rep Dent. 2012;2012:214704. DOI: 10.1155/2012/214704. Epub 2012 Jul 9.
 6. Brooke Devenney-Cakir¹, Rathan M. Subramaniam^{1,2}, Susmitha M. Reddy¹, Heather Imsande², Anita Gohel³, Osamu Sakai^{1,2}, Cystic and Cystic Appearing Lesions of the Mandible, Review. DOI:10.2214/AJR.09.7216.
 7. Noffke CE, Raubenheimer EJ, Chabikuli NJ, Bouckaert MM. Odontogenic myxoma: review of the literature and report of 30 cases from South Africa. Oral Surg Oral Med Oral Pathol Oral Radiol Endod. 2007;104:101–109.
 8. Sham E, Leong J, Maher R, Schenberg M, Leung M, Mansour AK. Mandibular ameloblastoma: Clinical experience and literature review. ANZ J Surg. 2009;79:739–744.
 9. White SC, Pharoaha MJ. Benign tumors of the jaws. In: White SC, Pharoaha MJ, eds. Oral radiology: Principles and interpretation, 6th ed. St. Louis, MO: Mosby Elsevier. 2009;366–404.
 10. Koseki T, Kobayashi K, Hashimoto K, Arijji Y, Tsuchimochi M, Toyama M, et al. Computed tomography of odontogenic myxoma. Dentomaxillofac Radiol. 2003;32(3):160-5.
 11. Devenney-Cakir B, Subramaniam RM, Reddy SM, Imsande H, Gohel A, Sakai O. Cystic and cystic-appearing lesions of the mandible: Review. AJR Am J Roentgenol; 2011;196(6 Suppl):WS66-77. DOI: 10.2214/AJR.09.7216.

© 2015 Yadav and Thakkar; This is an Open Access article distributed under the terms of the Creative Commons Attribution License (<http://creativecommons.org/licenses/by/4.0>), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

Peer-review history:

The peer review history for this paper can be accessed here:
<http://www.sciencedomain.org/review-history.php?iid=672&id=12&aid=6279>