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Case Report

Ameloblastoma: A hostile lesion of mandible: A challenging case report

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ABSTRACT

Swellings in the maxillofacial region always play a challenging task for clinicians to reach for apt diagnosis. These swellings can be soft, firm or bony hard in consistency. There are various clinical and radiographic features which are peculiar to these pathologies but sometimes the features are similar to more than one lesion. Thus, histopathological evaluation is must before planning for treatment. In this article we have discussed a case of swelling on the left side of face along-with the clinical, radiographical and pathological findings.

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1. Introduction

Adamantinoma or the ameloblastoma is the second most commonly occurring odontogenic neoplasm which is very felicitously defined by Robinson as a tumor which is usually unicentric, nonfunctional, intermittent in growth, anatomically benign and clinically persistent. Term was given by Robinson.¹ It was first baptized as Adamantinoma by Malassez in 1885 which further was designated to Ameloblastoma by Churchill in 1934. Some studies shows that it is the most common occurring odontoplasmic neoplasm in India. It arises from the dental lamina remnants.² It is usually seen in third to fourth decades of life with equal gender predilection. Mandible is commonly affected as compared to maxilla. Association with unerupted third molars is usually seen.³ They are classified radiographically into unilocular or multilocular and histopathologically into three types: Multicystic /solid, Unicystic, peripheral variants. In this article, a case of Mural ameloblastoma has been discussed with emphasis on the clinical and the radiographical features.⁴

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2. Case Report

A 29 Years old male patient came to the department of Oral Medicine and Radiology with chief complaint of swelling on the left side of his face since 2 months. Patient gave history of intra-oral swelling since 2 years which started as small peanut in size and gradually start increasing and attained the present size. It was associated with pain and discharge of pus since 20 days and not associated with any other symptoms.

On extraoral Inspection, it was revealed as diffuse swelling of approximately 6x7 cm in size on the left side of the face. It extended anterioposteriorly from the angle of the mouth till the pre-tragus region. Superioinferiorly the swelling initiated from the level of infra-orbital margin till approx. 1cm below the base of mandible. The overlying skin over mucosa revealed with no obvious colour/surface changes. On Palpation, the inspectory findings were confirmed and swelling was nontender, and firm to hard in consistency.

On Intra-oral examination, mild swelling was noted in the vestibular region irt 34,35 to retromolar region on left side. No other significant inspectory findings were seen in

relation to soft tissue swelling. On palpation the swelling was non tender, firm to hard in consistency. Overall oral hygiene of the patient was compromised with grade 3 stains and calculus. (Figure 1)



Fig. 1: Intraoral view showing vestibular obliteration from 33 to 36 region

On the basis of clinical history and inspectory findings, provisional diagnosis was considered as benign odontogenic tumor. Ameloblastoma, dentigerous cyst and odontogenic keratocyst was given as differential diagnosis. Later the patient was advised for radiographic investigations such as OPG, PA view and CT-Scan.

OPG (Figure 2) revealed as well-defined multilocular radiolucencies with corticated margins measuring about 6x5 cm extending from 33 till the ascending ramus region involving condylar head and coronoid process. The lesion extends from 33 till 38 region involving ramus areas showed septa and dividing the radiolucency into various partitions, thus giving it a typical soap-bubble appearance. Due to its expansile in nature the impacted 38 is pushed to lower mandibular region on left side. The tooth lying in the lesion i.e 34,35,36,37 showed root resorption of knife-edge pattern. The outer cortical margin of angle of mandible showed discontinuity with evidence of pathological fracture. (Figure 2).

Posterior–anterior (PA) skull radiograph revealed as a multilocular expansile lesion of the left mandible, with inferior displacement of the impacted 38 teeth. (Figure 3)

A non-contrast computed tomography (CT) coronal view through the left mandible demonstrates with multiple locules, with expansile lesion and thinning of both the cortical plates, and perforation along the posterior border of the left ramus of the mandible along with 38 is pushed down.(Figure 2)

Later the patient is subjected to incisional biopsy which confirmed as follicular type of ameloblastoma. Patient underwent for the enucleation for the lesion and the patient is under observation.



Fig. 2: An orthopantomograph (OPG) demonstrates a large multilocular, expansile lesion causing thinning of the cortical plates involving the whole of the left hemimandible



Fig. 3: Posterior–anterior (PA) skull radiograph reveals a multilocular expansile lesion of the left mandible, with inferior displacement of the involved teeth

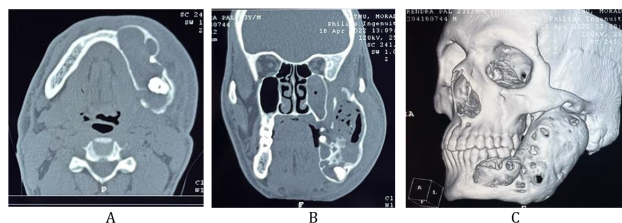


Fig. 4: A,B,C): Axial, Coronal and 3-D reconstruction images showed the multilocular expansile lesion involving the molar and ascending ramus area

3. Discussion

Ameloblastoma was probably first recognized in 1827 by Cusack and Churchill in 1934 first used the term ameloblastoma. It arises from the epithelial remnants of dental embryogenesis, without the involvement of odontogenic ectomesenchyme.⁵ Langlais and Langland has divided this tumor into three clinicopathological types: (1) Classic (2) Malignant (3) Mural entity. They have mentioned histologically malignant ameloblastoma as ameloblastic carcinoma.⁶

It is seen in any age group including children. Small and Waldran conducted a review in 1955 and found the average age of patient to be 33 years. Other researchers suggested as the average age to be third to fourth decade of life.⁷ There is a slight predilection for men in comparison to women. It is slow growing in nature with expansile properties and is usually painless.⁸ Some cases have reported with painful swelling. The commonly affected region is mandible as compared to maxilla. Posterior mandible region gets ramified (molar/ramus region).⁹ So the swelling is customary seen in this area. Ueno and colleagues have noted that in 29% of cases, ulceration and fistula formation had occurred in gingiva overlying the tumor. Many patients show symptoms of tooth mobility, paresthesia, trismus, purulent discharge and ill-fitting dentures.

Ameloblastoma is radiographically which begins initially as a unilocular variety and then evolve into multilocular variant as mean age for unilocular ameloblastoma is 24 years while for multilocular it is 35 years.¹⁰ The recurrence rate for multilocular pattern is more. Multilocules are seen due to the formation or presence of septa which divides them into various compartments. These locules vary in size and thus gives different appearances. The locules may be less than 1cm in diameter and can be numerous in number giving “honey-comb” appearance. Locules which are larger in size tends to be less in number, since expansion is invariably present, gives “soap bubble appearance”. In some instances, septa radiates from the central body, giving “spider like” appearance.¹¹ In our case, it was reported with Soap-bubble like appearance. Following this, emerges buccal and lingual expansion of cortex, which is very well appreciated on axial CT images. The expanded cortex is excessively thinned, giving “eggshell like” appearance, and many times perforations of cortex is seen.¹² In the present case, it was found the expansion of cortical plates encroaching the ascending ramus region of the mandible on left side with resorption of the involved roots.

Teeth lying in the lesion has characteristic knife-edge root resorption, roots appears to be cut off in a single linear plane.¹³ In our report, the involved roots of teeth showed resorption and the impacted third molar teeth is pushed to the lower border of the mandible along with few areas of evidence of pathological fractures.

Histological features was described by Vickers and Gorlins in 1970 which has become the standard accepted criteria for diagnosis of ameloblastoma, also known as Vickers and Gorlins criteria includes peripheral layer of tall columnar cells with hyperchromatic nuclei, reverse polarity of nuclei with palisaded arrangement and subnuclear vacuole formation. The various types includes: follicular, plexiform, acanthomatous, desmoplastic, granular cell, basal cell type. Reichart et al conducted a study and showed that the follicular type is the most common type seen. Plexiform is the second most common variant

seen. In contrast, Saghravanian et al. showed that the plexiform pattern was the most commonly occurring variant (41.93%).⁸

The treatment plan comes the accurate extent of tumor by imaging followed by total excision based on the first step. Various treatment modalities include surgical resection, enucleation, curettage, cryotherapy, radiotherapy and chemotherapy. Wide-block surgical resection with safe margins is the preferred treatment method. Surgical excision is treatment of choice and involves complete removal of tumor with safety margins of 1-1.5 cm due to its high rate of recurrence. So patient should be recalled for a long time follow-up to check for recurrence.

4. Conclusion

The lesions of the oral cavity especially those having bony hard consistency should be examined carefully and radiographically. Thus, it plays a crucial role for the clinicians to know about the conspicuous features of the ameloblastoma. Although, usually the radiographic features of ameloblastoma are so clear that the diagnosis is made easily, but one should not depend on it solely. Biopsy of the lesion and the histopathologic diagnosis should also be achieved before planning for definitive treatment.

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6. Conflict of Interest

None.

References

1. Ramesh M, Gurumoorthy AN, Sanjive JG. Giant ameloblastoma. *Formos J Surg.* 2022;55(1):27–30.
2. Hariram, Mohammad S, Malkunje LR, Singh N, Das S, Mehta G. Ameloblastoma of the anterior mandible. *Natl J Maxillofac Surg.* 2014;5(1):47–50.
3. Sarlabous M, Psutka DJ. Treatment of Mandibular Ameloblastoma Involving the Mandibular Condyle: Resection and Concomitant Reconstruction With a Custom Hybrid Total Joint Prosthesis and Iliac Bone Graft. *J Craniofac Surg.* 2018;29(3):e307–14.
4. Carlson ER, Marx RE. The ameloblastoma: primary, curative surgical management. *J Oral Maxillofac Surg.* 2006;64(3):484–94.
5. More C, Tailor M, Patel HJ, Asrani M, Thakkar K, Adalja C. Radiographic analysis of ameloblastoma: A retrospective study. *Indian J Dent Res.* 2012;23(5):698.
6. Chauhan DS, Guruprasad Y. Plexiform Ameloblastoma of the Mandible. *J Clin Imaging Sci.* 2011;1:61.
7. Ranchod S, Titinchi F, Behardien N, Morkel J. Ameloblastoma of the mandible: analysis of radiographic and histopathological features. *J Oral Med Oral Surg.* 2021;27:6.
8. Saghravanian N, Salehinejad J, Ghazi N, Shirdel M, Razi M. A 40-year Retrospective Clinicopathological Study of Ameloblastoma in Iran. *Asian Pac J Cancer Prev.* 2016;17(2):619–23.
9. Rodrigues DB, Wolford LM, Malaquias P, Campos PSF. Concomitant treatment of mandibular ameloblastoma and bilateral temporomandibular joint osteoarthritis with bone graft and total joint prostheses. *J Oral Maxillofac Surg.* 2015;73(1):63–74.

10. Hayden RE, Mullin DP, Patel AK. Reconstruction of the segmental mandibular defect: current state of the art. *Curr Opin Otolaryngol Head Neck Surg*. 2012;20(4):231–6.
11. Petrovic ID, Migliacci J, Ganly I, Patel S, Xu B, Ghossein R, et al. Ameloblastomas of the mandible and maxilla. *Ear Nose Throat J*. 2018;97(7):26–32.
12. Belardo E, Velasco I, Guerra A, Rosa E. Mandibular ameloblastoma in a 10-year-old child: case report and review of the literature. *Int J Odontostomat*. 2012;6(3):331–6.
13. Rocha AC, Fonseca FP, Santos-Silva AR, Lourenço SV, Cecchetti MM, Júnior JG. Effectiveness of the Conservative Surgical Management of the Ameloblastomas: A Cross-Sectional Study. *Front Oral Health*. 2021;2:737424. doi:10.3389/froh.2021.737424.

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