

Case Report
Medicine

Diagnostic Dilemma -Pericoronitis or Unicystic Ameloblatoma: A Rare Case Report

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Abstract

Dentigerous cyst (DCs) is the type of odontogenic cyst and is the one of the most common type of cyst occurring in the jaw. Dentigerous cyst is clinically asymptomatic and is found radiographically. It encloses the crown of impacted tooth. Histological evaluation is important in such cases as sometimes radiographically interpreted Dentigerous cyst is diagnosed as Unicystic ameloblastoma, dental follicle or an odontogenic keratocyst. In this case report, 18years old boy is reported with clinical diagnosis of pericoronitis and radiographic finding of Dentigerous cyst which on histopathological investigation revealed features of plexiform ameloblastoma on post-operative excisional biopsy.

Keywords: Dentigerous cyst (DCs), Unicystic ameloblastoma (UA), World health organization (WHO), Orthopantomograph(OPG), Cone Beam Computed Tomography (CBCT), Plexiform unicystic ameloblastoma'(PUA).

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INTRODUCTION

Odontogenic tumors are a varied group of jaw lesions that originate from epithelial or mesenchymal tissues related to tooth development. These lesions range from hamartomas to genuine neoplasms. The World Health Organization (WHO) revises the classification of such lesions every few years, with the most recent 2022 edition being fifth in order.

Mandibular swelling can be caused by many benign lesions of odontogenic or non-odontogenic originated tumors. Among the odontogenic origin tumors, ameloblastoma is one of the most common tumor. Ameloblastoma develops from epithelial cellular elements and dental tissues in various phases of development. As this cyst shows similarity with Dentigerous cysts, both clinically and radiographically the biological behavior of ameloblastoma tumor was reviewed.

There are three type of ameloblastomas,1. Conventional 2. Peripheral and 3. Unicystic tumors.

The Unicystic ameloblastoma (UA) one of the sub type of ameloblastoma. The prevalence of UAs is asymptotically in the posterior mandibular region as 90% of cases occur in the mandible. As Unicystic ameloblastoma shows similar characteristic as of Dentigerous cyst in clinical and radiographic examination.

CASE REPORT

A 18 –year old male reported in the department of Oral Medicine and Radiology of Career Post Graduate Institute of Dental Sciences &Hospital College, Lucknow with a chief complain of asymptomatic bony hard swelling over the right posterior side of mandible for past one and a half month. The size slowly increased within one and a half month and attained current size. Dental and medical history was insignificant. The patient did not give a history of trauma, difficulty in mastication, or change in consistency and quality of saliva.



Fig. 1: Patient presented with bony hard swelling, right side of face

On clinical examination: *Extraorally* a diffuse swelling in the right lower posterior region was noted measuring 2x2 cm on the right body of mandible. Anteroposteriorly, swelling extended behind the right corner of the mouth to ramus of mandible. Superoinferiorly, swelling

extended below the upper lip to 1 cm short of the inferior border of the mandible (Figure 1). On palpation no lymphadenopathy was noted. Overlying skin was free of any inflammatory sign, normal in color, texture and consistency.



Fig. 2: Extraoral examination showed a swelling on the right lower half of the face extending along the ramus of the mandible

Intraorally soft tissue examination revealed on inspection a diffused solitary, painless swelling was present in the posterior region of right mandibular vestibule of first molar to ramus of mandible of same side. Absence of vestibular obliteration noted.

On palpation, buccal and lingual expansion of cortical plate noted. Swelling was firm to hard in consistency and non-tender.



Fig. 3: Intra-orally diffused solitary, swelling present in the right posterior region of mandibular vestibule of first molar to ramus of mandible

Radiographic Investigation

Radiographic investigation was done to help and diagnose and differentiate between a common inflammatory condition and a pathological lesion.

An orthopantomogram (OPG) was done which revealed well – defined and corticated margins along with multilocular radiolucency resembling a soap bubble

appearance over the right body of mandible, extending in an anteroposterior direction from 46 to 47 region and superoinferiorly from the sigmoid notch to inferior border of the mandible. The subsequent inferior displacement of 48 to border of mandible noted along with root resorption of the distal root apex of 46 and mesial and distal root apex of 47.



Fig. 4: Panoramic radiograph showing a Unicystic ameloblastoma Developing occlusal to the right second molar causing expansion of the mandibular body and ramus to the sigmoid notch and condylar neck, as well as inferior displacement of the mandibular second molar and root resorption of the alveolar right second molar

For further investigation Cone beam computed tomography (CBCT) was done which showed well-defined radiolucency with sclerotic corticated border in the right posterior mandible involving the angle of

mandible and ramus region. The lesion extends from distal root of 47 to the posterior border of the ramus till sigmoid notch.

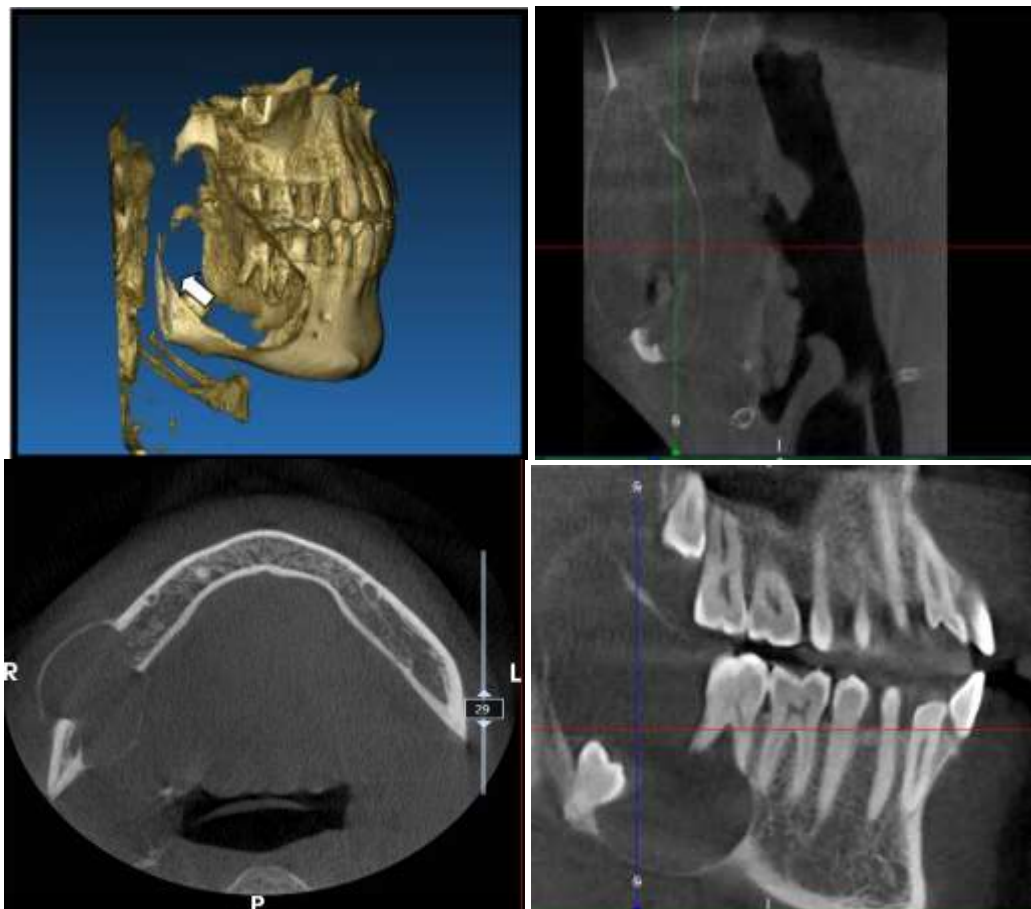


Fig. 5: Scan shows a well-defined, unilocular radiolucent lesion extending from the right mandibular second molar to the ascending ramus, with buccolingual cortical expansion along with thinning of the cortical plates and inferior displacement of mandibular canal.

Histopathological Finding

The histological feature shows 2-3 layer of simple epithelium lying over a moderately dense connective tissue. In the focal area the epithelium lining invades connective tissue in a plexiform pattern. The cells of the lining shows hyper chromatism, cells are tall columnar with pallisading arrangement. The connective tissue shows dense proliferating blood vessels and scanty inflammatory cells. The final histopathological analysis confirmed it to be Dentigerous cyst with plexiform ameloblastic proliferation (Mural type).

DISCUSSION

This case report highlights the diagnostic complexities of odontogenic lesions. Initially, patient came up with complain of extraoral diffuse swelling in the right mandibular posterior region measuring 2x2 cm on the right body of mandible and intraorally, a diffused solitary, painless swelling was seen in the posterior region of right mandibular vestibule of first molar to ramus of mandible of same side. Absence of vestibular obliteration noted. Clinical diagnosis made was of Pericoronitis irt 48 region. Pericoronitis is an inflammatory condition affecting soft tissue which surrounds partially erupted or untreated cases which can lead to spread into fascial spaces.

For further investigation Orthopantomograph was done which revealed well-defined multinocular radiolucency. Soap bubble appearance over the right body of mandible seen extending in an anteroposterior direction from 46 to 47 region and superoinferiorly from the sigmoid notch to inferior border of the mandible. The subsequent inferior displacement of 48 to border of mandible noted along with root resorption of the distal root apex of 46 and mesial and distal root apex of 47 suggestive of dentigerous cyst which is the most common cause of pericoronal radiolucency. It is associated with impacted teeth. Dentigerous cyst is asymptomatic in nature. Diagnosis of Dentigerous cyst is a radiographical finding and is combination of radiographic and histopathological finding.

Histopathological examination is necessary for confirmation of type of cystic lesion. *Robinson and Martinez in 1977* described Unicystic ameloblastoma which is variant of ameloblastoma and presents clinical and radiologic characteristics of an odontogenic cyst so termed as "cytogenic ameloblastoma". *Phillpsen and Reichart* classified unicystic ameloblastoma (UA) into four histological groups- (i) Luminal Unicystic ameloblastoma (ii) Plexiform Unicystic ameloblastoma (iii)Luminal, intraluminal, and intramural UAs (iv) Unicystic ameloblastoma Luminal and intramural. In 2017, the WHO classified ameloblastoma into Unicystic and peripheral type.

The term 'plexiform unicystic ameloblastoma'(PUA) represents a specific and more aggressive histologic subtype. This involves formation of interconnected cords of ameloblastic epithelium within the cyst wall. This proliferative pattern closely resembles plexiform ameloblastomas. This indicates aggressive biological behavior particularly in mural invasion cases.

The clinical and radiological examination of UAs cannot be based on it. Other odontogenic lesions resemble same as Unicystic ameloblastoma but vary in histopathological pattern.

These are of three type based on luminal, intraluminal/proxiform and mural proliferation of odontogenic epithelium. In this case, making diagnosis was possible only because of histopathological examination of enucleated material. Unicystic ameloblastoma can be differentiated from Dentigerous cyst only on bases of histopathological report.

Though, Dentigerous cyst is a benign lesion, epithelial lining has potential to change into neoplastic.

Radiographically, Unicystic ameloblastoma show Unicystic or multicystic lesion. In this case multilocular cystic lesion is noted. The histopathological examination is necessary for treatment planning of Unicystic ameloblastoma. Long term post-operative treatment is necessary because recurrence of UA may be delayed.

Surgical management for ameloblastoma depends on extent of involvement, location anatomically, histologic type and the size of the tumor.

CONCLUSION

In our case, unerupted right side third molar tooth is associated with Dentigerous cyst and ameloblastoma. The clinical and radiological feature of Unicystic ameloblastoma are important characteristic but histopathological examination helps to differentiate from other odontogenic cyst which resemble same characteristic clinically and radiographically.

Enucleation procedure is treatment of choice. It involves least patient morbidity and bone curette should be avoided as chances of foci of ameloblastoma may implant more deeply in bone.

Follow-up of patient is necessary to avoid recurrence of lesion.

Hence, conclude that surgical treatment must include histopathological examination for all lesions to find any ameloblastic changes and proper follow-up done to avoid any recurrence of lesion.

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