

AMELOBLASTOMA MIMICKING THE PERIAPICAL LESION: A CASE REPORT

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ABSTRACT

Ameloblastoma is a unique epithelium odontogenic tumor occurring in the posterior region of the mandible. It is initially asymptomatic but slowly leads to the expansion of the cortical bone. Ameloblastoma can be categorized into different variants based on clinical and histological features. Amongst all the variants of ameloblastoma solid multicystic ameloblastoma (SMA) considered to be a locally aggressive lesion. It can present different clinical, radiographic and histopathological presentations. Due to inappropriate management, it is associated with a high rate of recurrence. Proper diagnosis is very crucial for the appropriate management of ameloblastoma. Ameloblastoma can be treated by wide local excision and reconstruction of the defect. In this report, we have a case of SMA of the mandible, which was initially misdiagnosed and has an unusual presentation.

Key words: ameloblastoma, solid multicystic, periapical cyst, odontogenic tumor.

Introduction

Ameloblastoma is a benign epithelial odontogenic tumor of jaws with a high rate of recurrence. It is usually without any symptoms but locally aggressive and leads to the expansion of cortical bone and infiltration of the soft tissues. It is most frequently seen in the 3rd to 4th decade of life with equal gender predilection. It is most commonly reported in the lower molar ramus region. It was first illustrated by Cusack in 1827 and the term 'ameloblastoma' was suggested by Churchill in 1934.¹ Ameloblastoma because of its invasive property and tendency to recur it is considered as locally malignant. Based on clinical, radiographic & histopathology characteristics, and behavioral and prognostic aspects, ameloblastomas can presently be classified into the classic solid/ multicystic ameloblastoma (SMA), the unicystic ameloblastoma (UA), the peripheral ameloblastoma (PA) and the desmoplastic ameloblastoma (DA). Radiographically, ameloblastoma most commonly appears as multilocular radiolucency with Soap bubble or Honeycomb appearance, but it can appear as unilocular radiolucency with well-demarcated smooth radiopaque margins.^{2,3} Also, in some cases displaced roots of teeth, root resorption is a common finding. This paper's aim is to report a particular clinical case of ameloblastoma of the mandible that was initially misdiagnosed as a periapical lesion. This case report will also provide adequate knowledge of classification, occurrence, behavior and radiographic manifestation of ameloblastoma that can help in its accurate diagnosis.

Case report:

A 36-year-old female patient came to our institute with a chief complaint about swelling with pain in the lower right jaw for 3 months. The swelling, which she noticed three

months before her visit, was initially small but gradually increased and reached the present size. Also, the patient complained about feeling pain for 15 days, which was moderate, intermittent, and localized, and which was aggravated on mastication. The patient was diagnosed with a periapical cyst by a general dental practitioner and given medication by him but the pain was not relieved. The patient was brought to our institute for further treatment. The patient's medical and drug histories were non-contributory. On eliciting past dental history, the patient informed that she had similar kind of pain and swelling 5 years back in the same region and it was treated with root canal treatment of #45 and #44 and #46.

On extraoral clinical examination of the patient, a single diffuse swelling was seen in the lower one-third of left side of the face which was approximately 2x3 cm in size extending 2 cm posterior from symphysis to 3 cm in front of angle of mandible, superiorly, the swelling extended from corner of mouth in a relaxed position to the inferior border of mandible. Over swelling of the skin seemed normal, and the surface was smooth. On palpation, all inspected findings were confirmed, the swelling was tender but the temperature of overlying skin was normal. The swelling was constant and consistent with the underlying structures (Figure 1 A). An intraoral test showed a diffuse swelling in the lower right buccal vestibule which extends from the mesial aspect of 43 to the distal aspect of 46 regions, which obliterated the buccal and lingual vestibules (Figure 1 B). The swelling was tender on palpation and overlying mucosa was slightly erythematous. On palpation, there was an expansion of the buccal and lingual cortical plate. Grade II mobility was observed in teeth #45 and #44 with mild pain on vertical percussion. The patient was provisionally diagnosed with periapical lesion with teeth

#45 and #44 based on clinical features. Further investigation was advised. Intraoral periapical (IOPA) radiograph affirmed a well-defined unilocular radiolucency which extends from the distal aspect of tooth #43 to the mesial aspect of the mesial root of #46 periapical (Figure 2 A). Additionally, root resorption was seen in 43, 44, 45 and mesial root of 46. CBCT and an occlusal radiograph were obtained. CBCT also revealed well defined unilocular radiolucency with a peripheral smooth corticated border which extended from the mesial aspect of 42 to mesial root of 46, root resorption was observed with #43, #44, #45 and mesial root of #46 causing the gutta-percha to extend beyond the root apices. No evidence of calcification was noted (Figure 2B). The mandibular lateral occlusal radiograph showed perforation of the buccal and lingual cortical plates in the right premolar-molar region. In addition to showing findings similar to those observed by IOPA. Based on radiographic finding we made a differential diagnosis of benign odontogenic tumor and central giant cell granuloma. Fine needle aspiration cytology (FNAC) was done; 5ml of aspirate was received which was reddish-brown in color and thick inconsistency. On wet mount smear, numerous cholesterol crystals were noted. Papanicolaou stain (PAP) of cytological smear showed a predominantly RBC's and few chronic inflammatory cells infiltrate chiefly lymphocytes (Figure 3A, 3B). Cytological features suggested of chronic inflammatory lesion. Excision of the lesion was performed and teeth #44, #45 and #46 were extracted. The gross excised specimen appeared reddish-brown, firm in consistency and displayed a cystic cavity. Histopathology revealed the occurrence of the odontogenic epithelium with the formation of ducts and solid and sheet pattern. Follicles are lined by peripheral tall columnar ameloblast like cells and centrally placed loosely arranged stellate reticulum like cells. Inductive changes in the form of hyalinization were seen around a few follicles. Cystic degeneration was seen in a few places. The cystic wall contained connective tissue with dense collagen fibers and exhibited a desmoplastic appearance. Overall histopathologic features supported the diagnosis of solid multicystic ameloblastoma (follicular variant) (Figure 4 A, B). The patient was followed up for six months during which she remained symptom-free.

Discussion:

Multicystic ameloblastoma is a benign epithelial odontogenic tumor of the jaw that is more aggressive than the other ameloblastoma variants, although it's slow-growing, and is the cause of about 10% of all odontogenic tumors of the jaw.³⁻⁵ The occurrence of ameloblastoma at the apex of teeth is rare and can be often misleading in a

definitive diagnosis, as illustrated in this case, which can lead to the initiation of endodontic therapy supposing that the lesion is pulpo-periapical in origin, although the pretreatment panoramic radiograph in the present case report did not reveal any features suggesting pulp or periodontal pathology. This initial misdiagnosis was reported previously in similar cases where the definitive diagnosis of ameloblastoma was reached after histological examination. Ameloblastoma can expand, if left untreated, causing the resorption of the roots of associated teeth and tooth displacement, and lead to perforation of the cortical plate which can clinically be elicited by the presence of a sound similar to eggshell crackling, which was not present in the present case. Root resorption of the involved teeth, which was present in the current case, is not unique to ameloblastoma. Therefore, clinicians have to be cautious of lesions that appear at the apex, which might have originated from neoplastic.⁶⁻⁸

Radiographic presentation of ameloblastoma varies, as described by Worth. Unicystic ameloblastoma occurs as a unilocular radiolucency resembling a cyst; unlike a cyst, however, discontinuity is observed in the peripheral cortex. Ameloblastoma presenting with a spider web pattern is the most frequent type, in which the lesion is observed as a large radiolucent area with scalloped borders. From the center of the lumen, coarse strands of trabeculae radiate peripherally, making it look like a spider web. The soap bubble variant of ameloblastoma consists of multilocular radiolucencies of varying sizes. It is possible for Ameloblastoma with a honeycomb or solid pattern on radiography to have multiple small radiolucencies and is surrounded by hexagonal bony cortices which creates the appearance of a honeycomb.^{9, 10} Clinicians must be familiar with the various manifestations of ameloblastoma, with long-term periodic recalls monitoring for potential recurrence after treatment.

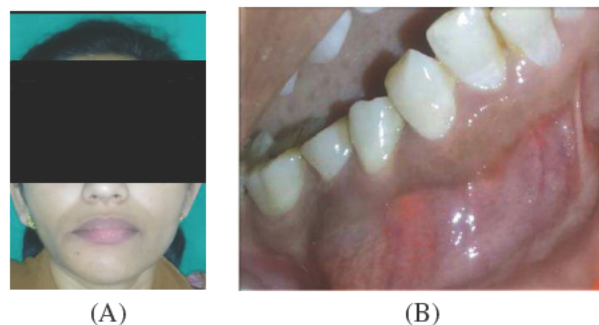


Figure 1: (A) extra oral a single diffuse swelling in the lower one third of left side of the face and (B) Intra oral a diffuse swelling in the lower right buccal vestibule extending from mesial aspect of 43 to the distal aspect of 46 region

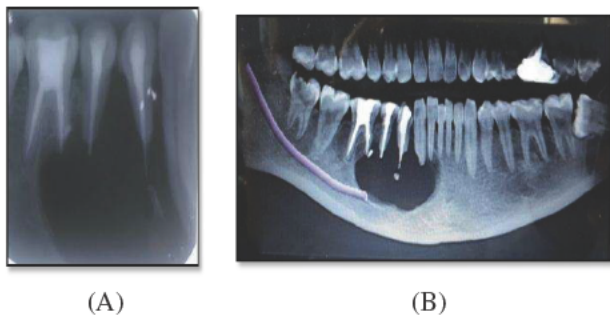


Figure 2: (A) Intraoral periapical radiograph revealed a well-defined unilocular radiolucency extending from the distal aspect of tooth #43 to mesial aspect of the mesial root of #46 periapically. (B) CBCT also revealed well defined unilocular radiolucency with peripheral smooth corticated border.

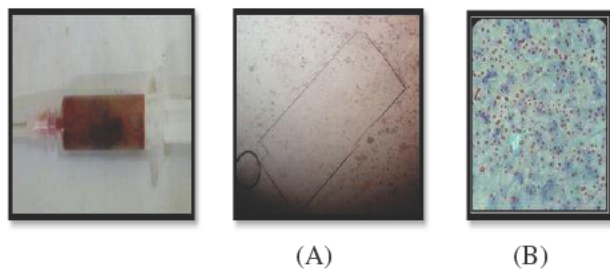


Figure 3: Fine needle aspiration cytology (A) wet mount smear revealed numerous cholesterol crystals (B) Papanicolaou stain revealed RBC's and few chronic inflammatory cell infiltrate chiefly lymphocytes

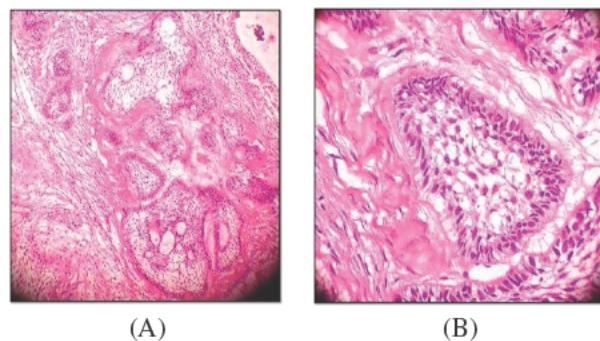


Figure 4: (A) At low power, photomicrograph showing of ducts, solid and sheet pattern of odontogenic epithelium lined by ameloblasts-like cells and stellate reticulum like cells in the center under H & E Staining (x10). (B) At high power, photomicrograph showing peripheral ameloblast-like cells with reversal of polarity under H & E staining (x40)

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