Ameloblastoma Disguised As Dentigerous Cyst: A Case Report

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Abstract

Ameloblastoma is a, benign but locally aggressive odontogenic tumor that often presents as a painless swelling in the jaw. Unilocular ameloblastomas often present with features mimicking dentigerous cysts, leading to misdiagnosis.The differentiation between ameloblastoma and dentigerous cyst is critical, as conservative management of a dentigerous cyst may not be sufficient for ameloblastoma. Histopathological confirmation is essential for distinguishing these lesions and determining appropriate treatment, which may range from conservative enucleation to radical resection, depending on the lesion's size and aggressiveness. This report describes a case of ameloblastoma mimicking a dentigerous cyst in a young adult, emphasizing the importance of histopathological examination for accurate diagnosis and appropriate management.

Keywords: Ameloblastoma, Dentigerous Cyst, Unilocular Radiolucency

INTRODUCTION

Ameloblastomas are benign, locally invasive epithelial odontogenic tumors that account for approximately 1% of all oral tumors and about 11–18% of all odontogenic tumors [1]. Among its variants, the unicystic ameloblastoma is notable for its relatively indolent clinical behavior and its tendency to affect younger patients.

Radiographically, these lesions often resemble dentigerous cysts, making differential diagnosis challenging without histopathological analysis [2]. This case study highlights the diagnostic dilemma posed by such lesions and the critical role of biopsy in managing odontogenic cyst-like jaw swellings.

Figure 1: Extraoral Clinical Photo

Figure 2: Intraoral Clinical Photo

CASE REPORT

A 17-year-old male presented with a slow growing, painless swelling in the right mandibular region. Extraoral examination revealed facial asymmetry, and intraorally, buccal cortical expansion was observed in the molar region. No associated tenderness or neurological symptoms were noted.

Panoramic radiography revealed a well demarcated, unilocular radiolucency surrounding the crown of an unerupted third molar, strongly suggestive of a dentigerous cyst .Under local anesthesia, enucleation of the lesion and extraction of the impacted tooth were performed. The specimen was submitted for histopathological evaluation. Microscopy revealed a cyst lined by ameloblastic epithelium with columnar basal cells exhibiting reverse polarity and subnuclear vacuolization. Islands of tumor cells were observed infiltrating the fibrous wall, consistent with the mural variant of UA. Excisional Biopsy (Fig 6) Result Confirmed Lining Shows Proliferation With Peripheral Ameloblast Like Cells And (Fig 7) Central Stellate Reticulum Like Cells With Interconnecting Strands Suggestive of Intramural Microinvasive Ameloblastoma.

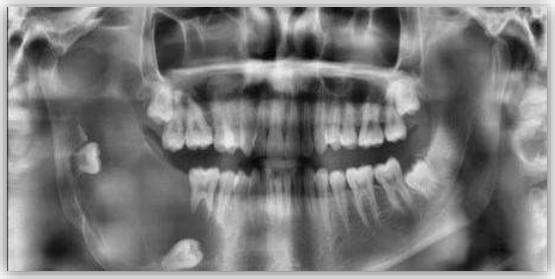
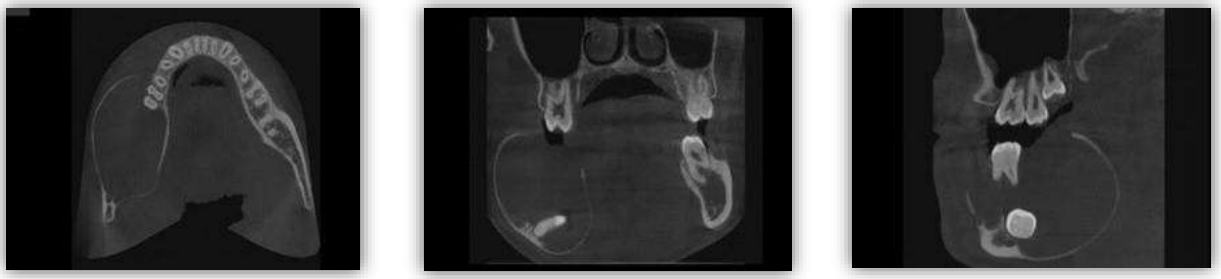


Figure 3: Panormic Radiograph (OPG)



(a) Axial (b) Sagital (c) Coronal

Figure 4: CBCT of Right mandible showing various sections (a) Axial (b) Sagital (c) Coronal

Figure 5: 3d Printed Model of The Lesion

DISCUSSION

Unicystic ameloblastomas occur most frequently in the second and third decades of life and show a predilection for the posterior mandible. They are often discovered incidentally on routine radiographs or during evaluation of impacted teeth [1, 6]. Radiographically, UAs often present as well-circumscribed, unilocular radiolucencies associated with unerupted teeth—features typical of dentigerous cysts [3, 7]. This resemblance leads to frequent misdiagnosis and under- treatment if histopathological examination is not performed. Ackermann et al. (1988) classified UA into three types: Luminal UA: confined to epithelial lining Intraluminal UA: nodular proliferation into the lumen Mural UA: tumor invasion into the fibrous wall [5] The mural variant poses the highest risk of recurrence due to its invasive growth pattern [8]. Management of UA depends on its histologic subtype. Luminal and intraluminal variants can often be treated conservatively via enucleation or marsupialization. However, the mural variant may require more aggressive treatment such as marginal resection due to recurrence rates reported between 10–35% [9,10]. Several authors have reported similar presentations where UAs mimicked dentigerous cysts preoperatively. In a report by Ravikumar et al. (2014), a 16-year-old patient underwent cyst enucleation, and histology revealed mural UA, necessitating careful follow-up [6]. Shear and Speight also emphasized that a definitive diagnosis of UA can only be made through thorough histological analysis [7].

Figure 6: Cystic lining with extracted tooth

(a)10X (b) 40X

Figure7: Histopathological analysis (a)10X (b) 40X

This case and the reviewed literature highlight the critical role of histopathological evaluation in every jaw cystic lesion—particularly those involving unerupted teeth—to rule out or confirm the presence of ameloblastomatous changes [6,7]. The presence of ameloblastic epithelium with mural invasion warrants a different therapeutic protocol than simple cyst enucleation. While luminal and intraluminal variants may respond well to conservative treatment, the mural variant has shown a higher rate of recurrence and may necessitate marginal resection and more extended follow- up periods [5,9].

CONCLUSION

Unicystic ameloblastoma (UA), although histologically and biologically less aggressive than solid or multicystic variants, poses a significant diagnostic and therapeutic challenge due to its close resemblance to benign odontogenic cysts such as the dentigerous cyst [1,3,4]. The frequent radiographic association of UA with impacted mandibular third molars, combined with its unilocular radiolucent appearance, often leads to an initial misdiagnosis [2,6]. This diagnostic pitfall can result in conservative treatment of a lesion that may require a more aggressive approach, especially in the case of the mural variant [5,8].

Moreover, the evolving understanding of UA's histopathogenesis and molecular behavior suggests that histologic classification should directly inform the management strategy [3,5,9]. As such, surgeons, oral pathologists, and clinicians must adopt a multidisciplinary approach that incorporates radiographic, clinical, surgical, and histological insights to provide individualized and evidence-based treatment [1,4,10].

Ultimately, long-term postoperative follow-up remains a cornerstone of effective UA management. Recurrences may appear many years after initial treatment, especially in cases where the lesion had mural invasion but was treated conservatively [9,10]. This emphasizes the necessity for patient education, regular monitoring, and possibly adjunct imaging strategies in follow-up care.

By integrating clinical vigilance with precise histopathologic assessment, healthcare providers can improve patient outcomes, avoid under-treatment, and better manage the recurrence risks associated with unicystic ameloblastomas. This case serves as a vital reminder of the diagnostic overlap between odontogenic cysts and tumors, and the profound importance of definitive diagnosis through biopsy and histologic study in maxillofacial pathology [2,4,6]

Conflicts of Interest: None.

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