



Case Report: Unicystic Ameloblastoma Mimicking a Radicular Cyst in the Maxillary Anterior Region

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Abstract

The reported prevalence of periapical radicular cysts ranges widely, accounting for about 7% to 54% of all periapical radiolucent lesions. However, when more stringent diagnostic criteria are applied—distinguishing periapical pocket cysts (with incomplete epithelial lining) from true periapical cysts (characterized by a completely epithelial-lined cavity)—the prevalence is estimated to be around 15% ⁽¹⁾. Unicystic ameloblastoma is a cystic variant of ameloblastoma that often mimics odontogenic cysts both clinically and radiographically. Although uncommon, some cases carry a higher likelihood of a radicular cyst transforming into an ameloblastoma. In addition, inflammatory processes have been implicated in the development of ameloblastoma—particularly the unicystic type, which may arise through neoplastic changes in the previously non-neoplastic epithelial lining of odontogenic cysts such as radicular cysts, dentigerous cysts, and odontogenic keratocysts. Therefore, careful and long-term postoperative follow-up is essential ⁽²⁾. This case report describes a 30-year-old patient who presented with pain and swelling in the left maxillary anterior region, associated with a non-vital tooth and a history of trauma. Based on initial findings, a provisional diagnosis of radicular cyst was made. However, histopathological examination following surgical enucleation confirmed the lesion as unicystic ameloblastoma. The case highlights the importance of thorough evaluation and the role of histopathology in definitive diagnosis.

Keywords: Unicystic ameloblastoma, radicular cyst, non-vital tooth, odontogenic tumor, case report

Introduction

Unicystic ameloblastoma is a distinct clinicopathological variant of ameloblastoma characterized by a cystic cavity lined by ameloblastomatous epithelium. It commonly presents as a unilocular radiolucency and is frequently misdiagnosed as a radicular or dentigerous cyst. Accurate diagnosis is essential because treatment approach and prognosis differ significantly from inflammatory cysts. Radicular cysts are the most common inflammatory odontogenic cysts affecting the jaws and are usually associated with pulpal necrosis and chronic periapical inflammation arising secondary

to dental caries or traumatic injury. These cysts originate from the epithelial rests of Malassez stimulated by inflammatory mediators in the periapical region ⁽³⁾. The prevalence of radicular cysts has been reported to range from 7% to 54% of all periapical radiolucencies; however, when strict histopathological criteria are used to differentiate true cysts from pocket cysts, the prevalence is estimated to be approximately 15% ⁽⁴⁾. Clinically, they are often asymptomatic and are commonly discovered during routine radiographic examination, although larger

lesions may present with swelling, pain, and cortical expansion.

Ameloblastoma is a benign odontogenic epithelial neoplasm characterized by slow but persistent growth, local invasiveness, and a high tendency for recurrence if inadequately treated. It accounts for approximately 1% of all oral tumors and around 10–15% of odontogenic tumors ⁽⁵⁾.

Histologically, ameloblastoma exhibits several variants, among which unicystic ameloblastoma is recognized as a distinct clinicopathological entity. Robinson and Martinez first described unicystic ameloblastoma in 1977 as a cystic lesion demonstrating clinical and radiographic characteristics similar to odontogenic cysts while showing ameloblastomatous epithelium microscopically ⁽⁶⁾.

Unicystic ameloblastoma commonly affects younger individuals and frequently presents as a unilocular radiolucency, often mimicking radicular cysts or dentigerous cysts both clinically and radiographically ⁽⁷⁾. Because of this resemblance, definitive diagnosis usually depends on histopathological examination following surgical intervention. The lesion may occur in luminal, intraluminal, or mural forms, with the mural subtype demonstrating greater infiltrative potential and increased risk of recurrence ⁽⁸⁾.

Although uncommon, ameloblastoma has been reported to arise from the epithelial lining of preexisting odontogenic cysts. Chronic inflammation is believed to play a role in the neoplastic transformation of odontogenic cyst epithelium, particularly in lesions such as radicular cysts, dentigerous cysts, and odontogenic keratocysts ⁽⁹⁾. Several authors have suggested that persistent inflammatory stimulation may induce proliferation and dysplastic changes within the epithelial lining, eventually contributing to the development of unicystic ameloblastoma ⁽²⁾.

Trauma has also been implicated as a possible contributing factor in the pathogenesis of odontogenic cystic lesions and subsequent neoplastic transformation. In cases associated with nonvital teeth and a history of trauma, lesions are frequently diagnosed provisionally as inflammatory periapical cysts, thereby posing a diagnostic challenge ⁽¹¹⁾. Consequently, histopathological evaluation of all enucleated cystic lesions is essential to establish an accurate diagnosis and formulate an appropriate treatment plan.

The present case report describes a unicystic ameloblastoma in the maxillary anterior region of a 30-year-old patient with a history of trauma and a non-vital tooth.

Case Presentation

Figure 1: Clinical photograph showing non vital lateral incisor tooth and palatal swelling



A 30-year-old patient presented with a chief complaint of pain and swelling in the left upper anterior region

for the past three months. The swelling was gradual in onset and associated with palatal expansion.

The patient reported a history of trauma to the maxillary anterior region during early adolescence.

Clinically, the left maxillary central incisor and canine gave late response; the lateral incisor gave no response; and first premolar gave normal response to electrical pulp testing. No significant medical history was noted.

Clinical Examination

Extraoral examination was unremarkable. Intraoral examination revealed a localized swelling in the left maxillary anterior region with palatal extension. The swelling was firm, mildly tender, and associated with cortical perforation on the palatal side. Buccal cortical plate showed no expansion or perforation.

Pulp vitality testing revealed that tooth 21 was non-vital, which, along with the patient's history of trauma, strongly suggested a periapical inflammatory lesion.

Radiographic Findings

Intraoral periapical radiograph (IOPA) showed widening of the root canal in relation to tooth 21 along with a well-defined radiolucency in the periapical region.

Cone Beam Computed Tomography (CBCT) and Orthopantomogram (OPG) revealed a unilocular, well-circumscribed radiolucent lesion measuring approximately $16.6 \times 22.6 \times 16.5$ mm in the left maxillary anterior region. The lesion exhibited cortical expansion without significant root resorption.

Figure 2: OPG and Saggital view of CBCT showing the radiolucency of $16.6 \times 22.6 \times 16.5$ mm



Provisional Diagnosis

Based on the history of trauma, non-vital tooth, and radiographic features, a provisional diagnosis of radicular cyst was made.

Treatment

The lesion was surgically managed under local anesthesia. Complete cystic enucleation was performed from buccal approach in toto.

After enucleation, the retrograde cavity preparation and filling was done with MTA. The surgical cavity was grafted with demineralized freeze-dried bone allograft (DFDBA) to facilitate bone regeneration.

Figure 3: Enucleation of cyst followed by retrograde preparation and filling of MTA.



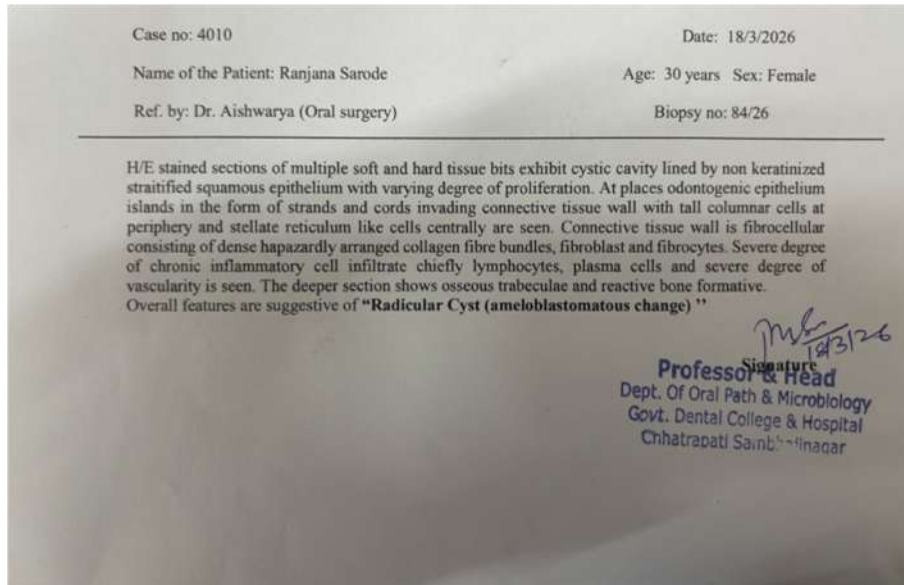
Histopathological Examination

Histopathological analysis of the excised specimen revealed a cystic lesion lined by ameloblastomatous epithelium. The lining showed tall columnar basal cells with hyperchromatic nuclei exhibiting reversal of polarity and subnuclear vacuolization. The suprabasal layers resembled stellate reticulum. These findings were consistent with unicystic ameloblastoma.

Final Diagnosis

Unicystic ameloblastoma.

Figure 4: Histopathological report



Follow-Up

The patient was placed under long-term follow-up with clinical and radiographic evaluations every three months. Healing has been satisfactory, with no evidence of recurrence to date after 2 years.

Discussion

Unicystic ameloblastoma is often clinically and radiographically indistinguishable from odontogenic cysts, particularly radicular cysts when associated with non-vital teeth. In this case, the presence of a non-vital tooth and a history of trauma strongly supported the initial diagnosis of a radicular cyst.

However, histopathological examination remains the gold standard for diagnosis. Misdiagnosis can lead to inappropriate treatment planning. While radicular cysts are inflammatory in origin and typically managed conservatively, unicystic ameloblastoma, although less aggressive than solid variants, carries a risk of recurrence.

Conservative management through enucleation is often sufficient for luminal and intraluminal subtypes, but careful follow-up is essential. The use of DFDBA in this case aided in osseous regeneration and healing.

Conclusion

This case underscores the diagnostic challenge posed by unicystic ameloblastoma when it mimics a

radicular cyst, especially in the presence of a non-vital tooth and prior trauma. Definitive diagnosis through histopathology is critical to ensure appropriate management and long-term prognosis.

References:

1. Omoregie FO, Sede MA, Ojo AM. Ameloblastomatous Change in Radicular Cyst of The Jaw in a Nigerian Population. *Ghana Med J.* 2015 Jun;49(2):107-11. doi: 10.4314/gmj.v49i2.8. PMID: 26339095; PMCID: PMC4549824.
2. Falah MN, Sayekti M, Kautsar ZDT, Pradita Y, Rizqiawan A, Humidat A. A rare case of ameloblastoma arising from radicular cyst in mandible. *World Journal of Advanced Research and Reviews.* 2025;25(1):1322–1328.
3. Shear M, Speight P. *Cysts of the Oral and Maxillofacial Regions.* 4th ed. Oxford: Blackwell Munksgaard; 2007.
4. Nair PNR. New perspectives on radicular cysts: do they heal? *Int Endod J.* 1998;31(3):155–160.
5. Reichart PA, Philipsen HP, Sonner S. Ameloblastoma: biological profile of 3677 cases. *Eur J Cancer B Oral Oncol.* 1995;31B(2):86–99.
6. Neville BW, Damm DD, Allen CM, Chi AC. *Oral and Maxillofacial Pathology.* 4th ed. St Louis: Elsevier; 2016.

7. Robinson L, Martinez MG. Unicystic ameloblastoma: a prognostically distinct entity. *Cancer*. 1977;40(5):2278–2285.
8. Philipsen HP, Reichart PA. Unicystic ameloblastoma. A review of 193 cases from the literature. *Oral Oncol*. 1998;34(5):317–325.
9. Ackermann GL, Altini M, Shear M. The unicystic ameloblastoma: a clinicopathological study of 57 cases. *J Oral Pathol*. 1988;17(9-10):541–546.
10. Gardner DG. A pathologist's approach to the treatment of ameloblastoma. *J Oral Maxillofac Surg*. 1984;42(3):161–166.
11. Marx RE, Stern D. *Oral and Maxillofacial Pathology: A Rationale for Diagnosis and Treatment*. 2nd ed. Hanover Park: Quintessence Publishing; 2012.