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### ABSTRACT

Radicular cysts are the most common of all jaw cysts and comprise about 52% to 68% of all the cysts affecting the human jaws. They are most commonly found at the apices of the involved teeth. Radiographically, most radicular cysts appear as round or pear shaped unilocular radiolucent lesions in the periapical region. Most of the radicular cysts are asymptomatic and are discovered when a periapical radiograph is taken of non-vital teeth. Rarely cysts can cause expansion and may displace adjacent teeth or cause mild root resorption which mimic tumor like ameloblastoma. This is a rare case of radicular cyst of mandibular anterior teeth region in a 15 year old male patient mimicking unicystic ameloblastoma.

**KEYWORDS:** Radicular cyst, Unicystic ameloblastoma, pericapical cyst, tumors, odontogenic tumors

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### INTRODUCTION:

Many benign lesions cause mandibular swellings, whose origin can be attributed to odontogenic or nonodontogenic causes. The most commonly encountered are odontogenic lesions like ameloblastomas, radicular cysts, dentigerous cysts, odontogenic keratocysts, central giant cell granulomas, fibro-osseous lesions and osteomas. Most of the time such diverse group of periapical lesions are asymptomatic and are first seen on routine radiographs of non-vital teeth.<sup>[1,2]</sup>

This diversity reflects the complex development of the dental structures, since all these lesions originate through some alteration from the normal pattern of odontogenesis.<sup>[2]</sup>

One such odontogenic lesion is radicular cyst of inflammatory origin preceded by a chronic periapical granuloma and stimulation of cell rests of Malassez found in the periodontal membrane.<sup>[2]</sup>

Most of the radicular cysts are asymptomatic and are discovered accidentally when periapical radiograph is taken of teeth with non-vital teeth.<sup>[3]</sup>

The cysts may displace adjacent teeth or cause mild root resorption. Radiographically most radicular cysts appear as round or pear shaped, unilocular radiolucent lesions in the periapical region.<sup>[3,4]</sup>

However, the occurrence of noninflammatory pathosis such as developmental odontogenic cysts, lymphomas, periapical cementoosseous dysplasias, central giant cell lesions and ameloblastomas has also been described as having a well-defined

periapical radiolucent lesions in the jaw. This can present the clinician with difficulties in the differential diagnosis and in determining the treatment strategies.<sup>[5]</sup>

Ameloblastoma is one of the most common tumors of the oral cavity. One such most common odontogenic tumor of the oral cavity is ameloblastoma. It is defined as a slow-growing, persistent, and locally aggressive neoplasm of epithelial origin.<sup>[6]</sup> Based on the behavioral pattern, anatomical location, histological features and radiographic appearance of ameloblastoma, Leon Barnes has categorized the tumor into solid (multicystic), unicystic, desmoplastic and peripheral varieties. The first three are intraosseous/central, while the peripheral variety is extraosseous.<sup>[1, 7, 8]</sup>

The unicystic variety refers to those cystic lesions that show clinical, radiographic, or gross features of a cyst, but on histologic examination show a typical ameloblastomatous epithelium lining of the cyst cavity, with or without luminal and/or mural tumor growth.<sup>[9]</sup>

A significant number of such odontogenic origin lesions like cysts and tumors similar clinical and radiographic, their diagnosis usually requires a detailed analysis of clinical, radiographical, and histopathological findings.<sup>[2]</sup>

Here is a case report of a rare case of radicular cyst mimicking unicystic ameloblastoma.

### CASE REPORT

A 15 year old male patient came to outpatient

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department of Ahmedabad Dental College and Hospital (ADCH) with complaint of pain and swelling on the chin since last 1 month. The patient was asymptomatic before 1 month, then he noticed pain and swelling on the chin. Pain was dull aching, continuous in nature, which aggravated on pressing the swelling. The assessment of the previous medical history was noncontributory.

Extra oral examination revealed facial asymmetry of lower one third of face at the chin region where a swelling was present on the right side. (Figure-1) A single swelling measuring 3 x 3 cm in size was present at the chin region extending superoinferiorly from 1 cm below vermilion border of lower lip to 1cm below lower border of mandible and mediolaterally from the chin to the right parasymphysis region, with shiny and stretched overlying skin. Swelling was tender, non-warm, non-compressible, non-fluctuant and firm in consistency. Submandibular and submental lymphnodes on the right side were palpable, mobile and non-tender.



Figure 1: Extraoral front view of the patient showing swelling at chin region and facial asymmetry seen.

On intra oral examination, there was obliteration of labial vestibule from 32 to 43 region. Egg shell crackling was present at the level of labial vestibule in lower anterior teeth region. Class I malocclusion with edge to edge bite present in anterior teeth and midline of mandibular anterior teeth was shifted towards left side. Tooth numbers 43, 42, 41, 31, 32, 33 were unresponsive to electric pulp vitality tester.

Occlusal radiograph showed expansion of labial cortical plate in 32 to 43 region. (Figure-2) Panoramic radiograph showed well defined radiolucency at apices of mandibular anterior teeth, which was approximately 3x2 cm in size with a

corticated border. It also showed tilting of mandibular anterior teeth with mesially shifted crowns and distally shifted roots. (Figure-3)



Figure 2: Photograph of Occlusal radiograph of lower anterior teeth region showing buccal plate expansion.



Figure 3: Photograph of panoramic radiograph showing well defined radiolucency with corticated borders at apex of lower anterior teeth and tilting of lower anterior teeth.

A 3DCT SCAN revealed a 28x19x16 mm sized well defined radiolucent lesion in symphysis menti region. The lesion had caused thinning and erosion of outer cortex of mandible with adjacent soft tissue thickening. There was no evidence of calcification within the radiolucency. (Figure-4)



Figure 4: Photograph of 3DCT(coronal view) radiograph showing erosion and thinning at symphysis menti region.

Based on history, clinical and radiographic features, a clinikoradiological diagnosis of unicystic ameloblastoma was derived. The differential diagnosis of radicular cyst, periapical cemental dysplasia (first stage) and eosinophilic granuloma were considered.

The patient was referred to the department of oral and maxillofacial surgery where FANC was done which showed large no of RBCs with some inflammatory cells. Surgical enucleation of the lesion under general anesthesia was planned. A full thickness mucoperiosteal flap was raised and after bony access, the entire lesion was enucleated (**Figure-5**) and cavity was irrigated. Bony edges were filed and closure of cavity with sutures was done. The excised specimen was then submitted for histopathological examination.

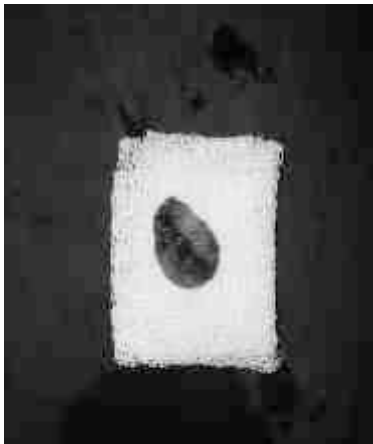


Figure 5: Enucleated 3 cm diameter lesion.

Histopathological examination revealed cystic lumen lined by epithelium. Epithelium was stratified squamous exhibiting arcading pattern. Connective tissue capsule showed large no of inflammatory cells, collagen fibers and blood vessels filled with RBCs. (**Figure-6**) Based on these findings, a final diagnosis of radicular cyst was established. After 10 days sutures removal was done. After a month endodontic treatment was done in relation to 31, 32, 33, 41, 42 and 43.

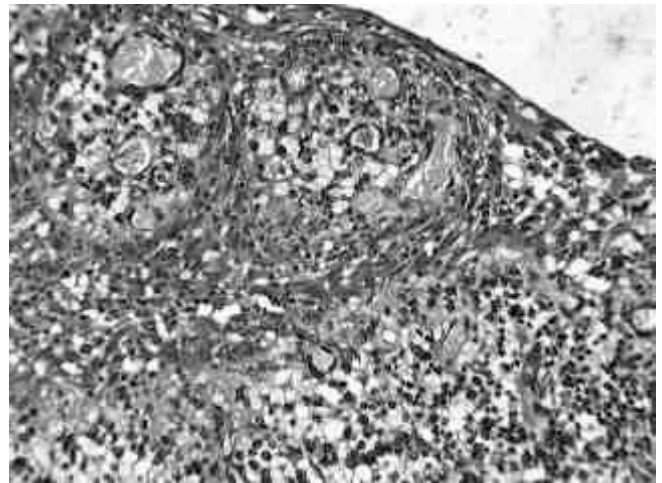


Figure 6: Photomicrograph of histopathological examination of lesion showing cystic lumen lined by stratified squamous epithelium. (Haematoxylin-eosin 10x, 40x)

## DISCUSSION

Radicular cyst is the most common inflammatory odontogenic cyst of the jaws. The common age of presentation for radicular cyst is 3rd to 6th decade of life. Radicular cyst most commonly occurs in maxillary anterior region. Clinically patients presenting with radicular cyst are usually asymptomatic. The classic description of the radiological appearance of radicular cysts is that they are round or ovoid radiolucency surrounded by a narrow radiopaque margin. Generally size of radicular cyst is more than 1 cm. <sup>[10]</sup>

The common age of presentation for unicystic ameloblastoma, it is 2nd and 3rd decade of life. <sup>[11]</sup> However in my case patient's age was 15 years which is in favor of unicystic ameloblastoma. However in my case painless swelling was present in anterior mandibular region. The panoramic radiograph showed well defined radiolucency at apices of mandibular anterior teeth with a corticated border. It also showed tilting of mandibular anterior teeth with mesially shifted crowns and distally shifted roots. Occlusal radiograph showed expansion of labial cortical plate in lower anterior teeth region. These all features are in favor of our provisional diagnosis of unicystic ameloblastoma. Thus based on history, clinical and radiological features we put a provisional diagnosis as unicystic ameloblastoma. Radicular cyst was included in the differential diagnosis because of favorable sex presentation, history of trauma from occlusion and

presence of non-vital tooth. Other differential diagnosis include periapical cemental dysplasia (first stage) and eosinophilic granuloma. Histopathological examination being the gold standard for such lesions we decided to enucleate the lesion and to send the specimen for histopathological examination.

Histopathological examination revealed cystic lumen lined by epithelium. Epithelium was stratified squamous exhibiting arcading pattern. Connective tissue capsule showed large no of inflammatory cells, collagen fibers and blood vessels filled with RBCs. Based on these findings, a final diagnosis of radicular cyst was established. Thus the lesion which was histopathologically

diagnosed as a radicular cyst, was initially mimicking a unicystic ameloblastoma based on history, clinical features and radiological findings.

### CONCLUSION

Oral cavity may sometimes present with lesions which may challenge the diagnosis and acumen of the clinician. A specialized oral physician should be aware of such pathologies and work towards solving the mystery as the exact diagnosis is necessary to render proper management and complications can be minimized. The present case highlights one such diagnostic dilemma which was attempted to be solved with the available resources.

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