

INCIDENTAL FINDING OF RADICULAR CYST: A CASE REPORT

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ABSTRACT

This case report describes a 50-year-old female patient presenting with pain and swelling in the lower left posterior jaw, attributed to a radicular cyst. Clinical examination revealed a well-defined swelling associated with the lower left second molar. Radiographic examination confirmed a unilocular radiolucency in the periapical region of the affected teeth. Treatment involved biopsy, extraction of involved teeth, and enucleation of the cyst, with subsequent placement of platelet-rich fibrin for bone regeneration. Histopathological examination confirmed the diagnosis of a radicular cyst. This case underscores the importance of comprehensive evaluation and multidisciplinary management in successfully treating radicular cysts

KEYWORDS : Radicular Cyst, Odontogenic Lesion, Periapical Cyst, Surgical Enucleation, Histopathology**INTRODUCTION**

Radicular cysts, classified as inflammatory odontogenic cysts, are frequently encountered lesions arising from the inflammatory stimulation of epithelial cell rests of Malassez within the periodontal ligament. Predominantly triggered by bacterial infection and subsequent dental pulp necrosis, radicular cysts typically manifest as asymptomatic entities, often eluding clinical detection and being incidentally discovered during routine radiographic examinations. Despite their indolent nature, these cysts can present with pain and swelling upon infection or exacerbation

Radiographically, they appear as well-defined radiolucent lesions localized to the apical region of affected teeth, frequently with radio-opaque borders. Although commonly affecting the maxilla, particularly the anterior region, radicular cysts can also occur in the mandible, notably in posterior teeth. Treatment modalities range from conventional nonsurgical root canal therapy for localized lesions to surgical interventions such as enucleation or marsupialization for larger lesions. Histopathologically, radicular cysts exhibit characteristic features including a lining of nonkeratinized stratified squamous epithelium and chronic inflammatory infiltrate. This scientific introduction underscores the pathogenesis, clinical presentation, radiographic features, treatment approaches, and histopathological characteristics of radicular cysts, providing a comprehensive understanding essential for accurate diagnosis and management.

Case Presentation:

A 50-year-old female presented with a chief complaint of pain and swelling in the lower left posterior region of the jaw persisting for 15 days. Upon intraoral examination, a well-defined swelling was observed associated with the lower left second molar, extending anteriorly from the region of tooth 35 to posteriorly till the distal aspect of tooth 38, measuring approximately 3x2 cm in dimensions. The swelling was firm upon palpation, with normal overlying mucosa



Fig no 1 showing well defined swelling with mandibular left second molar

Radiographic Presentation:

The OPG revealed a unilocular radiolucency in the periapical region of teeth 38 and 37, indicative of a cystic lesion. The radiolucency appeared well-defined with distinct borders, localized to the apical region of the affected teeth. The proximity of the lesion to the inferior alveolar neurovascular bundle was noted, highlighting the importance of cautious management to avoid damage to vital structure.



Fig no 2 showing unilocular radiolucency

Treatment plan

Based on the clinical and radiographic findings, a provisional diagnosis of a radicular cyst was made. The treatment plan involved a biopsy along with the extraction of the involved left mandibular second molar and root pieces of the adjacent first molar and second premolar. Surgical intervention included a crevicular incision along the crevices of the affected teeth, with a vertical releasing incision mesial to the second premolar. Following mucoperiosteal flap reflection, the softened bone overlying the cystic lesion was removed, and the cystic lining was identified. Complete enucleation of the cystic lining was performed, and platelet-rich fibrin was placed to promote bone regeneration. Primary closure was achieved with 3-0 black silk sutures.

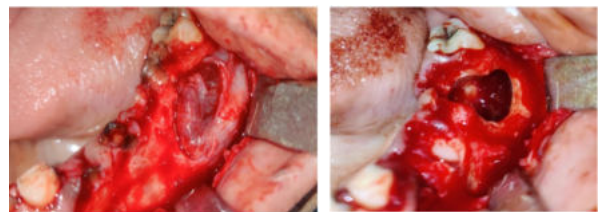


Fig no 3 & 4 showing cystic lining and bony cavity after cystic enucleation

Histopathology Examination:

Histopathological examination of the excised tissue confirmed the diagnosis of a radicular cyst. Microscopic evaluation revealed a lining of nonkeratinized stratified squamous epithelium, consistent with the characteristic features of a radicular cyst. Inflammatory infiltrate, including

polymorphonuclear leukocytes, was observed within the epithelial lining, indicative of the chronic inflammatory nature of the lesion.

DISCUSSION

Radicular cysts, a subset of odontogenic lesions, originate from epithelial cell rests of Malassez within the periodontal ligament, primarily due to inflammatory stimuli resulting from bacterial infection and subsequent pulp necrosis. While often diagnosed incidentally through radiographic examination or during acute exacerbations, they may exhibit slow growth and remain asymptomatic until complications arise. In this case, the patient presented with pain and swelling in the lower left posterior jaw, consistent with the clinical presentation of a radicular cyst.

Radiographically, radicular cysts appear as round radiolucent lesions with well-defined borders localized to the periapical region of affected teeth. In this case, the unilocular radiolucency observed in the periapical region of teeth 38 and 37 supported the provisional diagnosis of a radicular cyst. Treatment modalities for radicular cysts vary depending on lesion characteristics and patient factors. Surgical enucleation is commonly employed for larger lesions, as performed in this case, along with extraction of involved teeth. The use of platelet-rich fibrin for bone regeneration aids in promoting optimal healing outcomes.

Histopathological examination plays a crucial role in confirming the diagnosis of radicular cysts. In this case, the histopathological findings were consistent with those of a radicular cyst, supporting the clinical and radiographic diagnosis.

Notably, this case presented an atypical manifestation of a radicular cyst in the mandibular posterior region of a female patient, despite this deviation, successful management was achieved through surgical intervention.

CONCLUSION

This case emphasizes the importance of considering radicular cysts in the differential diagnosis of jaw swellings, even in atypical presentations. Comprehensive evaluation, including clinical, radiographic, and histopathological assessment, is essential for accurate diagnosis and optimal treatment outcomes. This discussion highlights successful management of radicular cysts, ensuring timely intervention and prevention of potential complications.

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