

# SURGICAL MANAGEMENT OF RADICULAR CYST – A CASE REPORT

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## **ABSTRACT:**

*Radicular cyst is derived from the epithelial cell rests of Malassez. The associated tooth is nonvital, usually asymptomatic, and may result in swelling, tenderness, tooth mobility, or other problems with rare possibility of neoplastic transformation of its epithelial lining. The treatment options include endodontic procedure, extraction of offending tooth, enucleation with primary closure, and marsupialization. The present report describes the case of a radicular cyst of anterior maxillary region in a 60-year-old male patient, with radiographic and clinical findings.*

**KEYWORDS:** *Radicular cyst, periapical cyst.*

## **1. INTRODUCTION:**

The most common cystic lesions that occur in the maxilla or mandible are radicular cysts. They account for upto 70% of all cystic bone lesions<sup>1</sup>. These are also referred to as ‘periapical cysts’ and result from infection of corresponding tooth/teeth. A radicular cyst is nothing but an inflammatory cyst which develops from the epithelial deposits in the periodontal space or following pulpal necrosis. This leads to apical periodontitis, followed by granuloma formation and finally leads to the formation of a cyst.

It is commonly found in the anterior maxillary region, although it can be found in the mandible as well<sup>2</sup>. Clinically, in most cases it is hard to identify a radicular cyst. Such a cyst is found only on radiographic examination, where it tends to appear as a pear shaped or round radiolucent lesion<sup>3</sup>. These cysts are more commonly found in men, especially in third and fourth decades of their lifespan.

The following is a case report of a radicular cyst in the anterior maxillary region.

## **2. CASE REPORT:**

A 60 year old male patient reported to the department of oral and maxillofacial surgery, Sree Balaji Dental College and hospital, Chennai. The patient complained of pain in the left anterior maxillary region in relation to the lateral incisor, for the past 3 months. The patient had no other symptoms.

On examination, extra orally, the patient had no signs of any swelling. Intra orally, it was found that 22 was fractured and only a root stump was present. Tenderness on palpation was present in relation the buccal mucosa and gingiva from 21- 25 region. The root stump was found to be mobile.

An orthopantomogram was taken for the patient. A large unilocular radiolucency with well defined borders was seen in the anterior maxillary region extending from the periapical region of the upper left central incisor to the root of the upper left second premolar . On the basis of clinical and radiological examination, the provisional diagnosis of radicular cysts was made.



Enucleation of the cyst along with the extraction of the mobile upper left central incisor , canine and the involved root stump was planned and executed under general anaesthesia .

Crevicular incision was placed mesial aspect of upper left central incisor to the distal aspect of the upper second premolar with releasing incision on either side . A trapezoidal mucoperiosteal flap was elevated ,the involved root stump of the lateral incisor and the mobile central incisor and canine were extracted , following which the cyst was enucleated .



The surgically excised lesion was about 3cm x 2cm in size. The specimen was sent for histopathological examination, which showed non keratinized stratified squamous epithelial lining with inflammatory cell infiltration , reporting as radicular cyst .

### 3. DISCUSSION:

As already mentioned, radicular or periapical cysts are inflammatory jaw cysts that appear at the apices of the infected teeth with necrotic pulp . Latoo et al. quoted that radicular cysts account to 52-68% of the

jaw cysts<sup>5</sup>. The anterior maxilla is more common than any other site. Sheer et al. quoted that the reason for the increased prevalence of these cysts in the anterior maxilla could be due to trauma, caries, old restorations in the anterior teeth etc<sup>6</sup>.

Torabinejad described the pathogenesis of radicular cyst according to the “breakdown / nutritional deficiency” and “abscess cavity theory”<sup>7</sup>. This theory suggests that after provocation, the epithelial cells continue to proliferate following which the central cells become deprived of nutrition from the surrounding connective tissue and undergo liquefactive necrosis, leading to the development of a microscopic cyst.

In most cases, the teeth involved with the radicular cyst are asymptomatic. Swelling of the jaw, pain or loosening of teeth. Lustig et al. quoted that root resorption of the affected tooth and displacement of adjacent teeth can also be observed<sup>8</sup>.

‘Springiness’ or ‘egg shell crackling’ is a feature that is observed in radicular cysts, due to the advanced bone resorption. As mentioned by Bava FA et al., almost all radicular cysts are lined completely or in the fragment by non-keratinised stratified squamous epithelium<sup>7</sup>.

The treatment of radicular cysts will vary depending on the size of the lesion, its location, extent etc. The surgical management involves extraction, enucleation and marsupialization. Other treatment modalities such as endodontic treatment are also done in some cases.

#### 4. CONCLUSION:

Radicular cyst is one of the most common lesions seen in dental practice. It is most identified incidentally, following radiographic examination. Since there is a high chance of neoplastic transformation, it is advised to carry out proper treatment and follow up patients diagnosed with radicular cyst.

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