Management of infected radicular cyst by surgical approach
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Abstract
Radicular cysts are the most common cystic lesions affecting the jaws. They are most commonly found at the apices of the involved teeth. This condition is usually asymptomatic but can result in slow growth tumefaction in the affected region. Radiographically most radicular cyst appears as round or pear shaped unilocular radiolucent lesion in the periapical region. This case report presents the successful surgical management of large infected radicular cyst.

Key Words: Radicular cyst; enucleation; apicoectomy

Introduction
Radicular cysts are the most common (52%–68%) cystic lesions affecting the jaws. They are most commonly found at the apices of the involved teeth, however they may also be found on the lateral aspects of the roots in relation to lateral accessory root canals. (1) Radicular cysts are direct sequel to chronic apical periodontitis but not every chronic lesion develops into a cyst. These cysts can occur in the periapical area of any teeth, at any age but are seldom seen associated with the primary dentition. (2) It is more frequent in maxillary than mandibular teeth.

Most of the radicular cyst are symptomless and are discovered when periapical radiograph are taken of teeth with non-vital pulps. Patient often complains of slowly enlarging swellings. (3) Radiographically most radicular cyst appears as round or pear shaped unilocular radiolucent lesion in the periapical region. The cyst may displace adjacent teeth or cause mild root resorption. (4) The treatment options for radicular cyst can be conventional nonsurgical root canal therapy when lesion is localized or surgical treatment like enucleation, marsupialization or decompression when lesion is large. (5) This case report presents the successful surgical management of large infected radicular cyst.

Case report
A 25 years old male patient reported to the Department of Conservative Dentistry and Endodontics, Sharad Pawar Dental College and Hospital, Wardha, with a chief complaint of swelling in palatal region for last one month. Patient gives History of trauma in upper anterior teeth 5 years back. He revealed that when the pus gets collected the swelling increases in size then discharges through palatal aspect. Once the pus discharged the swelling subside and reoccurs after some days.

On intra oral examination a swelling was present in the palatal region, which was extending from 21 to 23 regions measuring 2.5 x 3 cms. Swelling was soft and fluctuant in nature. Electric and thermal pulp vitality testing showed negative response in 21, 22 and 23 while adjacent teeth showed normal response. Teeth were painless to vertical percussion. Initially an IOPA was taken to know the extent of lesion which revealed a lesion involving periapical region of 21, 22 and 23 regions respectively. A fine needle aspiration of the swelling showed a discharge containing pus and blood. From the History and Clinical examination a provisional diagnosis of infected radicular cyst in 21, 22 and 23 was made.

Treatment planning was followed by explanation of the procedure to the patient and an informed consent was obtained. In the same visit root canal treatment was started under rubber dam application followed by working length determination. After complete biomechanical preparation, calcium hydroxide was used as an intracanal medicament for one week. In next visit root canal treatment was completed followed by surgical enucleation of cyst, apicoectomy and retrograde filling of involved teeth. The procedure is as follows: After administration of local anesthesia crevicular incision was given in palatal region which extends from 11 to 25 regions. A full thickness mucoperiosteal flap was reflected and irrigated with normal saline. Large palatal bone resorption was present on the site. Complete curettage and enucleation of cyst done. For apicoectomy trapezoidal flap which extends from 12 to 23 region and site was exposed. Complete curettage done and granulation tissue was removed. Root end of involved teeth are resected and retrograde filling was done with Glass inomer cement. Closure of flap was done with 3-0 silk following hemostasis. The histopathology report confirmed the diagnosis of an infected radicular cyst. Post-operative instruction given to the patient and patient was kept under Antibiotics and Analgesics. Patient was recalled at intervals of 1, 7 days 3, 6 months and 1 year.
Radicular cysts are inflammatory lesions leading to bone resorption and can reach great dimensions and become symptomatic when infected or with great size due to nerve compression.(7, 8)

The treatments of these cysts are still under discussion and many professionals opt for a conservative treatment by means of endodontic technique.(9) However in large lesions the endodontic treatment alone is not efficient and it should be associated to a decompression or a marsupialization or even to enucleation.(10,11) In the present case due to the patient’s apprehension regarding the presence of a swelling and also the characteristic of the lesion, cooperation and systemic condition of the patient.

**Discussion**

A radicular cyst is an odontogenic cyst of inflammatory origin preceded by a chronic periapical granuloma and stimulation of cell rests of Malassez found in the periodontal membrane. Rests of Malassez are remnants of Hertwigs’ root sheath. Although the source of the epithelium is usually a rest of Malassez, other sources, such as crevicular epithelium, sinus lining, or epithelium lining of fistulous tracts, have been suggested.(6) Radicular cysts are inflammatory lesions leading to bone resorption and can reach great dimensions and become symptomatic when infected or with great size due to nerve compression.(7, 8)

The treatment of the radicular cysts should be defined according to the clinical and radiographic evaluations according to each case.

**References**


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