Case Report:

Residual Cyst in an Elderly Patient: A case report with brief review of literature

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Abstract

The term residual cyst is used for a cyst that has persisted after its associated tooth has been extracted or lost. Residual cysts are commonly observed in males and frequently found in the anterior region of the maxillary jaw. Residual cysts are among most common cysts of the jaws and are generally asymptomatic. We are reporting a case of residual cyst in the mandible of a 59-year-old male patient with emphasis on the pathogenesis, clinical, radiological features and treatment aspects.

Keywords: Jaw cysts, inflammatory cysts, radicular cyst, residual cyst

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Introduction

Residual cyst is considered to be a variant of radicular cyst that remains behind in the jaws after removal of the offending tooth. Along with the radicular cysts, they are by far the most common cystic lesions in the jaws. Because of its close association with the periapical cyst, it is more appropriate to refer it to in the discussion of radicular cysts.¹

Radicular Cyst:

Radicular cyst is one which arises from the epithelial residues in the periodontal ligament as a result of inflammation, following the death of the dental pulp and are usually found most commonly at the apices of the involved tooth.²

Synonyms:³

Periapical cyst, apical periodontal cyst, dental cyst, root end cyst.

Other Variations:⁴

1. Inflammatory periodontal cyst or inflammatory collateral cyst. Cyst occurring towards the cervical margin of the lateral aspect of a root

as a consequence of an inflammatory process in a PERIODONTAL pocket (Main 1970).

2. Paradental cyst: Craiz (1976) described cysts of inflammatory origin occurring on the lateral aspects of the roots of partially erupted mandibular 3rd molars with an associated history of pericoronitis.
3. Mandibular infected buccal cyst is a similar lesion as paradental cyst occurring on the buccal surfaces of mandibular molars in young children (Stoneman and Worth 1983).

Case report:

An adult male aged 59 years visited us with a chief complaint of multiple missing teeth. Patient reported that he had mobility and occasional pain in few teeth and he visited a dentist who extracted some of his teeth. His past medical history and dental history was not significant. His personal history was significant for cigarette smoking for the past 15 years.

Intraoral examination rendered missing of maxillary right first and both third molars, and all

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mandibular molars. No any soft tissue abnormality was noted.

Radiographic examination demonstrated well defined spherical radiolucency surrounded by well defined sclerotic border measuring 2 x 2 cm in the region of right mandibular molar region. The internal structure was uniformly radiolucent and there were no noticeable effects on adjacent structures (Figure 1). Surgical enucleation and curettage was carried out under local anesthesia. The biopsy specimen revealed cystic lining consistency of non-keratinized stratified squamous epithelium of varying thickness with epithelial proliferation in an arcading pattern in certain areas with few inflammatory cells in an eosinophilic background confirmed the diagnosis residual cyst. The patient was recalled for follow up and prosthetic rehabilitation.

Discussion

Clinical features:

Frequency: Most common cystic lesion in the jaws comprising of 68% of all cysts⁵

Age: Peak incidence is seen in third decades. Very few cases are seen in first decade. After 5th decade, there is a gradual decline.

According to Shear radicular cysts tend to be found at a some what older age in the English than the South African group and suggested that the South African group is exposed to the relevant aetiological factor mainly dental caries at an earlier age than the English group.⁶

Sex: Male preponderance, especially in 4th and 5th decades. The lower frequency in females has been attributed by some workers may be because they are less likely to neglect their teeth especially the maxillary anterior incisors. Males moreover are more likely to sustain trauma to their maximum anterior teeth.⁷

Race: Whites are seen to be affected more than the blacks.⁴

Site: Occur in all tooth bearing areas of jaws with a high frequency in maxillary anterior region that can be attributed to:

- Anatomic Susceptibility of the maxillary anterior teeth to trauma
- Hazard posed by dental caries
- In past silicate restorations in the anterior posed a high risk to the pulp.
- High prevalence of palatal invaginations in maxillary lateral incisors and the frequency with which pulp death supervenes in these teeth.⁸

Clinical presentation:^{7,8}

1. Usually asymptomatic, unless secondarily infected.
2. Associated with non vital tooth.
3. Slowly enlarging swelling
4. Initially, the enlargement is bony hard but as the cyst increases in size and when the cortex thins and if bone is destroyed the swelling exhibits springiness.
5. Occasionally a sinus may lead from the cyst city to the oral mucosa.
6. Radicular cyst arising from deciduous teeth appear to be very rare.

Radiological features:^{9,10}

Location: Epicentre of a root canal is located approximately at the apex of a non vital tooth. Occasionally appears on the mesial or distal surface of a tooth root at the opening of an accessory canal or infrequently in a deep PD pocket.

Periphery and Shape: Well defined cortical border. Loss of this cortex is seen if cyst becomes infected or alteration of the cortex into a more sclerotic border.

Outline: Curved or circular unless it is influenced by surrounding structures

Internal Structure: Occasionally dystrophic calcification may develop and appear as sparsely distributed, small particulated radio opaque

Effects on surrounding structures: Displacement, resorption of the roots of adjacent teeth may occur. Resorption pattern may have a curved outline. Rarely roots of related non-vital tooth may be resorbed cyst may invaginate the antrum. The outer cortical plates may expand in curved or circular shape. Cyst displaces the mandibular alveolar nerve canal in an inferior direction.

Histopathological features:

The cystic wall varies from being thin to the thick of approximately 5 mm. The inner Surface appears smooth or corrugated with projection of yellow mural nodules of cholesterol into the cavity. Fluid contents are usually brown form the breakdown of blood and when cholesterol crystals are present – impart a shimmering gold or straw colour. The cyst wall is lined by stratified squamous epithelium and ranges in thickness from one to 50 cell layers.¹¹ Majorities are between six and 20 cell layers thick, demonstrating exocytosis, spongiosis of hyperplasia. Proliferating epithelium is associated with intense inflammatory process consists predominantly of PMN leucocytes whereas the adjacent fibrous capsule is infiltrated mainly by chronic inflammatory cells. Ortho or

para keratinized linings are very rarely seen in radicular cyst. Secretory characteristics in the form of mucous cells or ciliated cells are frequently found in the epithelium linings. (Increased frequency of mucous cells with age at the rate of 7% per decade) and occasional metaplasia may be seen.¹²

Rushton's hyaline bodies are found in epithelium lining of approximately 10% of radicular cysts and are rarely present in fibrous capsule. First described by Dewey in 1918 these bodies measure up to about 0.1 mm and are linear, straight or curved or of hair-pin shape and sometimes concentrically laminated. They are brittle and frequently fracture. Circular or polycyclic bodies are also seen with a clear outer layer surrounding a central granular body.¹³ It has been also stated that deposits of cholesterol crystals are found in many radicular cysts.¹⁴

Treatment:^{11,12}

Excision through extraction or curettage or endodontic treatment and apical surgery.

- Enucleation
- Marsupialization
- Decompression
- Decompression with delayed enucleation
- Decortication and bone replacement for large cyst

Malignant transformation:¹⁵

Squamous cell carcinoma may occasionally arise from epithelium lining of radicular cyst.

Conclusion

A proper clinical, radiological, histopathological examination must be carried out to establish a confirmative diagnosis and management should be planned accordingly for residual cysts. A timely follow-up protocol should be established after giving appropriate therapy, to rule out any further recurrence and malignant transformation.

Figure 1. Panoramic radiograph showing well defined radiolucency

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