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CASE REPORT

Bilateral Residual Cysts of Mandibular Permanent Teeth

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ABSTRACT

Introduction: The term residual cyst refers to retained radicular cyst from teeth that have been removed. They are inflammatory cysts that are usually periapical in location and persist after the removal of accompanying tooth. They represent approximately 10% of all odontogenic cysts and are usually asymptomatic and become symptomatic when secondarily infected. Residual cysts are among most common cysts of the jaws.

Case presentation: A 71-year-old female patient reported with symptoms of a swelling on the right lower back tooth region of about 2 year duration. The diagnosis was in terms of bilateral residual cyst, traumatic bone cyst and Odontogenic Keratocyst.

Management and prognosis: The lesions were surgically enucleated under local anesthesia and specimen measuring sent for histopathological examination.

Clinical implications: A proper clinical, radiological, histopathological evaluation including aspiration must be done to establish a definitive diagnosis and treatment.

Keywords: Inflammatory cysts, Periapical cysts, Residual cysts.

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INTRODUCTION

Residual radicular cysts (RRC) are those inflammatory periapical cysts that arise as result of an incomplete surgical removal of a radicular, inflammatory or developmental cyst. They have an indolent growth and comprise of 10% of all odontogenic cysts.[1,2,3]

The most accepted etiologies are enlisted below:[4,5]

- Inadequate removal of periapical cyst or granuloma (remnant left after extraction).
- Removal of lateral dentigerous cyst in impacted tooth with cystic lesion is unrecognized and left *in situ*.
- Development of cystic lesion on either a deciduous tooth or a retained tooth which was either exfoliated or was extracted without knowledge of underlying pathology.

Clinically, a majority of the cases are asymptomatic and are usually discovered on radiographic examination during investigation for other reasons.

Here, we present a case report of a bilateral residual cyst in the mandibular body.

CASE REPORT

A 71-year-old female patient reported in Department of Oral Medicine and Radiology, Mahe Institute of Dental Sciences, with symptoms of a swelling on the right lower back tooth region of about 2 year duration. There was history of pain and slight difficulty in mouth opening. On clinical examination, a solitary, diffuse, firm, ovoid swelling in the lower right buccal vestibular region was seen in relation to 46, 47 with 2 × 4 × 1 cm dimensions (Fig. 1). Surface was smooth and margins were diffused. Mucosa over the swelling and adjacent area was normal. No signs of sinus opening or ulceration were noted. Teeth were missing in relation 35, 36, 37, 38, 46, 47 and 48 (Fig. 2). Orthopantomogram revealed a well-defined unilocular radiolucency on the right side measuring approximately 2.5 × 4 cm in relation to body of mandible. It extended *anterior posteriorly* from root of the first premolar to third molar region, superior inferiorly from the

Fig. 1: Photograph showing mild swelling in the right mandibular region

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Fig. 2: Photograph showing edentulous region

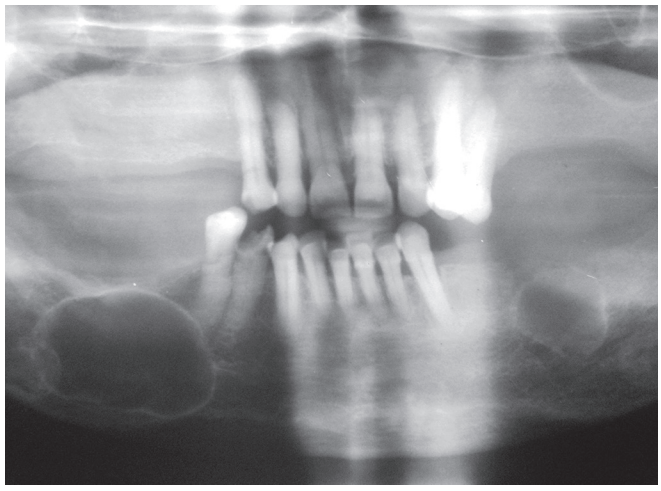

Fig. 3: Radiograph showing well circumscribed bilateral radiolucency in the body of mandible

Fig. 4: Surgical specimen measuring 1.5 × 1.5 cm

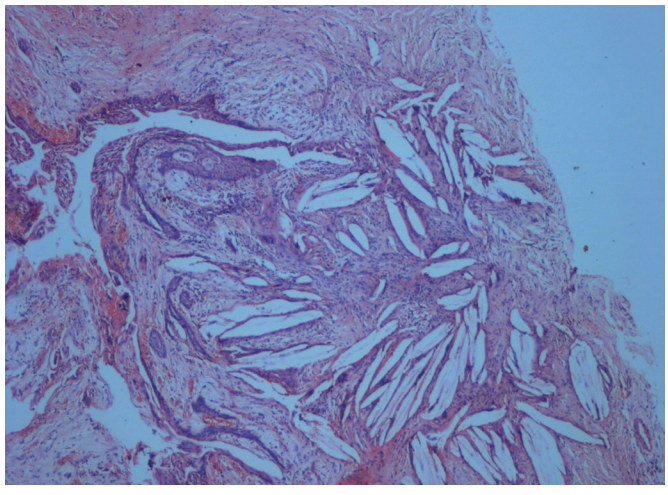

Fig. 5: H&E stained photomicrograph showing cystic lining and cholesterol cleft

crest of the alveolar ridge to 6 mm above the lower border of the mandible, with intact cortical border. A similar smaller lesion was also seen almost symmetrically on the left side of the jaw in relation to body of mandible in the premolar-molar region, measuring about 2 × 2 cm (Fig. 3). Routine laboratory findings were within normal limits. Based on the above said findings, a differential diagnosis of bilateral residual cyst, traumatic bone cyst, and Odontogenic Keratocyst were given. After obtaining the informed consent, both the lesions were surgically enucleated under local anesthesia and the specimens measuring 1.5 × 1.5 cm (Fig. 4) sent for histopathological examination. The histopathological features revealed non keratinized stratified squamous atrophic epithelium and the connective tissue wall showed inflammatory cell infiltration with numerous cholesterol clefts. A hyaline amorphous eosinophilic structure was also seen in the lining of the epithelium (Fig. 5). Hence, based on the clinical and histopathological findings we arrived at a final diagnosis of bilateral residual cyst. The postoperative period was uneventful.

DISCUSSION

Residual radicular cyst is defined as an odontogenic cyst that persists after the associated tooth has been extracted.[9] It is generally believed that the majority of them represent slowly resolving radicular cysts.[1,14,10]

The origin of residual cyst is thought to be from the epithelial rests of Malassez, while, in some cases, it arises from the respiratory epithelium of the maxillary sinus when the periapical lesion communicates with the sinus wall. It may also come from oral epithelium from a fistulas tract or oral epithelium proliferating apically from a periodontal pocket. [7] The epithelium may be derived from the surface epithelium or from the epithelium of adjacent glands or hair follicles.[8]

Residual radicular cyst are reported to occur more commonly in the anterior maxilla when compared to mandible. They usually affect the distal aspects of jaw in relation to extracted premolars-molars region[6]. Residual radicular cyst are recognized as well-defined, asymptomatic, circumscribed radiolucencies in an edentulous

area, usually seen in males with ages varies from 30 to 60 years.[1,14,12,13] In case of large radicular cyst, pathologic fracture or signs of encroachment on associated structures may be the presenting symptoms.

There is increase in mineralized deposits within the cysts lumen seen in residual cysts. This is thought to be an age change response. Mineralization noted in old cysts is thought to be due to dystrophic calcification of degenerated cellular material within the cyst lumen. Overall, reduction of cyst size with increasing epithelial atrophy and loss of hyaline bodies and mucous cells has been shown to occur as cyst ages. Lesions that persist as RRC will also undergo slow resolution if inflammation is not a prominent feature.[14]

The radiographic appearance of residual cysts resembles the unicystic ameloblastoma, odontogenic keratocyst, but the histopathological findings are different for these two. Odontogenic keratocyst shows keratinized stratified odontogenic epithelium with the rete peg formation and presence of daughter cysts. In unicystic ameloblastoma neoplastic proliferation of odontogenic epithelial cells with reverse polarity of the nuclei and the overlying cells are loosely arranged, which resembles stellate reticulum.[4]

Histopathologically cystic lining usually consists of nonkeratinized stratified squamous epithelium of varying thickness. The underlying connective tissue capsule reveals bundles of collagen fibers arranged parallel to each other. The connective tissue is usually infiltrated with chronic inflammatory cells predominantly lymphocytes. Occasionally, macrophages or plasma cells may be observed. Rushton bodies, identified during the histologic examination, occur in about 8% of RRCs. These bodies are thought to represent eosinophilic straight, rounded or curved irregular structures with an epithelial lining. They are secretory products of odontogenic epithelium considered to be formed in response to contact with particulate matter in a manner similar to the formation of dental cuticle.[11]

The treatment of residual cysts depends on the size and localization of the lesion, the bone integrity of the cystic wall and proximity to vital structures. The surgical approach to the cystic lesion is either marsupialization or enucleation while care should be excised to maintain and preserve the contour of edentulous ridge.

True residual cysts do not recur after appropriate treatment and thus are known to have an excellent prognosis.

CONCLUSION

This report presents bilateral residual cyst in the mandibular body. Majority of the cases are asymptomatic and are discovered on radiographic examination. The treatment of choice is marsupialization or enucleation and care should be taken to maintain and preserve the edentulous ridge. Thorough knowledge about the clinical, radiographical, and histopathological features enables clinicians in early and accurate diagnosis leading to good prognosis.

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