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Bilateral Radicular Cyst in Posterior Maxilla: An Unusual Case Report

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KEYWORDS

Radicular cyst, Odontogenic Cyst, Epithelial Cell Rests of Malassez, Radiolucency, Biopsy, Enucleation

ABSTRACT: Radicular cyst is a pathological cavity partially or completely lined by epithelium that may arises from epithelial residues of cell rest of malassez in the inflamed periapical tissues. Radicular cyst usually originates as a sequela to periapical inflammatory reaction following an injury. It is typically asymptomatic but causes pain and swelling if it is secondary infected. 52 to 68% of cyst occurring in the jaw are radicular cyst. 15 to 20% of cases occurs post endodontically treated tooth. This paper reports occurrence of bilateral maxillary radicular cyst in relation to molars.

INTRODUCTION

WHO (World Health Organization**)** classifies cyst of jaw bone as developmental, neoplastic and inflammatory origin[1,5,6]. Radicular cyst is formed by inflammatory proliferation of epithelial cell rests of malassez in periapical region of a tooth having necrotic pulp[1]. The most common site is anterior region of maxilla and mandibular pre molar region[1]. The incidence of radicular cyst is noted in third to fourth decade with male dominance[2]. The pathogenesis is complex process and it is based on the osmotic theory and abscess theory[3,7-10]. Therefore, we present a rare case with bilateral radicular cyst in relation to first molar of the maxilla.

CASE REPORT

A 33-year-old male came to opd with the chief complaint of pus discharge with on and off swelling in his upper left and right back tooth region for the past few weeks. History of presenting illness reveals that patient had dental caries followed by one and half years back patient had pus discharge and swelling in 16, 17 tooth region and 27 tooth region. Both his 16, 17 and 27 tooth were endodontically treated followed by crown under antibiotic coverage after which patient became normal. Six months later, he had the same complaint of pus discharge from the right upper tooth region for which, the patient again visited the dentist and got his RCT tooth extracted with antibiotic coverage in upper left back tooth region. Again 6 months later, Patient got pus discharge in upper left back tooth region for which endodontic treatment was done for adjacent tooth followed by crown under antibiotic coverage. He also stated that for the past 6 months he had recurrent pus discharge for which he used to consulted a dentist and used to be on antibiotics for 5 days after which it gets resolved. His history also reveals that, he had decayed followed by he had got pain for which he had underwent endodontic treatment in 25 tooth region under antibiotic coverage followed by fixed prosthesis given. Patient's medical history was not relevant.

On intra-oral examination, Dental caries was seen in 18 and 28, fixed prosthesis in 17,25 and 27. 16 tooth was missing (Figure 1) with a sinus opening seen buccally with pus discharge and bleeding, RCT was done in 15,17 and 27. IOPA was taken in relation to 15,16,17 (Figure 2). IOPA reveals, missing 16, root canal treated 17, gutta-

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percha extending from 16 to 17 buccally (Figure 3). A well, defined periapical radiolucency was noted in the apex of the tooth approx. 3x2 cm extending from periapical region of 16 and 17 tooth region. A provisional diagnosis of Radicular cyst in relation to 16, 17 was given. Patient was then subjected to specialized radiography cone beam CT of maxilla and mandible. To our surprise, a high-density radiolucent lesion was noted measuring about 9.7mm antero-posteriorly, 12mm superior-inferiorly in relation to 16 and extending till 17 of the apical tooth regions. A diffuse high density radiolucent lesion was noted in relation to apical portion of 27 and 16,17 tooth region of size approx., superior-inferiorly 11mm, antero-posteriorly 10.7mm approx. (Figure 4). On the basis of clinical and radiographic findings, the final diagnosis was made as maxillary Bilateral radicular cyst in relation to 16 and 27 was given. Enucleation and excisional biopsy under conscious sedation was planned for the patient.

With all precautionary aseptic conditions, horizontal crestal incision in the edentulous area and the crevicular incision was made in relation to 16 tooth regions, flaps were raised with bony defect was noted. Cyst enucleation and excisional biopsy was done. Two vertical and one horizontal incision were made in relation to 27 tooth region, flaps were raised, enucleation and excisional biopsy was done in relation to 27 tooth region. Both cysts were enucleated bilaterally and closure of flaps were done with silk sutures and specimens were sent for histopathological examination. HPE reveals, cystic cavity with lining epithelium with evident of inflammatory cell infiltrate reported as bilateral maxillary radicular cyst.

DISCUSSION

Radicular cyst is a unique disease entity and it is different from developmental and neoplastic cysts[1]. Radicular cyst occurring in maxilla are 60%, but mostly they occur in the anterior region[3]. Bilateral radicular cyst in the maxillary molars are unusual and rare. A case of deciduous bilateral maxillary radicular cyst has been reported in literature[11]. How ever, permanent bilateral maxillary radicular cyst has not been reported. Prevalence of radicular cyst in endodontically treated tooth is 15%[1]. Most of the radicular cysts are seen in maxilla. Most radicular cysts slowly increase in size and causes cortical plate expansion which is characterized by egg shell crackling. Radio graphically, radicular cysts may mimic like Dentigerous cysts, Odontogenic keratocysts, and Odontogenic tumors such as Ameloblastoma, Pindborg tumor, Odontogenic fibroma, and Cementomas. The common signs of radicular cysts are buccal cortical plate expansion, well defined radiolucency, thin reactive cortex and displacement of adjacent permanent teeth. In our present case, the traumatic incident with chronic inflammatory lesion at the periapical aspect of maxillary molars evoked a stimulation of epithelial rests of malassez. Continued activation of the inflammatory mediators had resulted in enlargement of the lesion and reached to the present state.[4] Conventional radiography and cone beam computed tomography are the first line of investigation to rule out Radicular cyst.

CONCLUSION

The present case report demonstrates a radicular cyst invading the periapical region maxillary molar tooth gives us in a unique identification. The radio graphical appearance and a similar pathology picture of the two cysts in a contralateral arch could be used as an interesting data due to its rarity. Bilateral maxillary radicular cyst in permanent dentition has not been reported, so this case reports its unique in first of its time. Although radicular cysts appear as common cystic lesions of the jaws, one should require a sound knowledge about the presentation and aggressiveness of the lesion.

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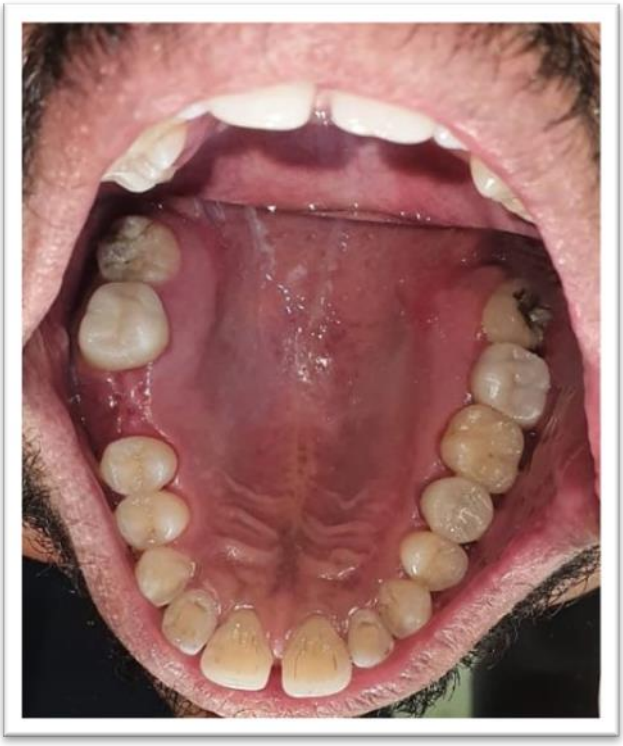

FIGURE 1: Pre Operative Intraoral Image

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Figure 2: IOPA wrt 15,16,17

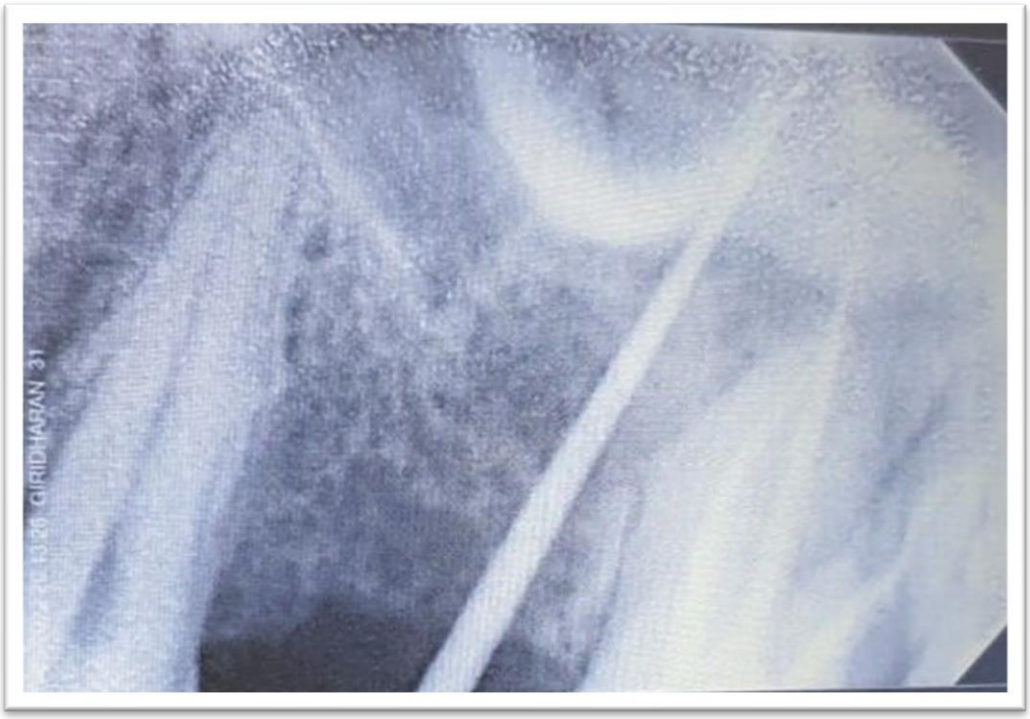

Figure 3 :IOPA reveals, missing 16, root canal treated 17, gutta-percha extending from 16 to 17 buccally

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Figure 4 **:** Diffuse high density radiolucent lesion was noted in relation to apical portion of 27 and 16,17 tooth region.