

Unusually Large Radicular Cyst-Diagnostic Dilemma

Rahul Laturiya¹, Amol Doiphode², Punam Nagargoje³, Tushar Kale⁴, Pravin Andhare⁵,
¹Professor & HOD ² Reader, ³ Lecturer, ⁴ PG Student, ⁵ PG Student

Dept. of Oral & Maxillofacial Surgery, MIDSR Dental College, Latur.

Abstract:

The most common inflammatory jaw cystic lesion is the radicular cyst. Radicular cysts are also known as periapical cysts, dental cysts, or apical periodontal cysts. It occurs most commonly in the maxillary anterior region. The common etiology of the radicular cyst includes trauma and caries. The current report presents a case of an unusually large radicular cyst in the maxillary anterior teeth region. The initial incisional biopsy of the lesion indicated benign tumor, but the FNAC yielded yellow-colored fluid suggesting cystic diagnosis, produced a diagnostic dilemma. .

Keywords: Radicular cyst, Maxilla, Palatal perforation

Corresponding Author: Tushar Kale, PG Student, Oral & Maxillofacial Surgery, MIDSR Dental College, Latur. Email id.: tusharkale003@gmail.com

INTRODUCTION:

Kramer (1974) has defined a cyst as 'a pathological cavity having fluid, semifluid or gaseous contents and which is not created by the accumulation of pus'. [1] Based on the etiology, there are two main types of the odontogenic cysts-developmental and inflammatory.[2] Inflammatory jaw cysts comprise a group of lesions that arise as a result of epithelial proliferation within an inflammatory focus due to several causes. [1]

The periapical cysts are the most common odontogenic cysts, followed by the dentigerous cysts. [3] Males during their third and fifth decades of life are more predominantly affected. [4] The cyst occurs commonly in the anterior maxilla. The etiology of the radicular cyst include trauma, caries, and old silicate restorations in the teeth [5]

Radicular cysts frequently found at the apices of the involved teeth. However, they may also develop in association with the lateral accessory root canals on the lateral aspect of the root. [6] The radicular cysts often diagnosed as an incidental finding on periapical radiographs of non vital teeth. The patient frequently presents slowly enlarging swellings.[7]

The purpose of this paper is to report a case of unusually large radicular cyst presenting with extensive resorption of hard palate making difficulties in diagnosis and treatment planning.

CASE REPORT

A 45-year-old male patient came to the department of oral and maxillofacial surgery with the chief complaint of swelling over the anterior palatal region. The patient noted swelling over the left side of the face for two years, which was preceded by the trauma over the same region. The patient noted swelling over

the anterior part of the palate for six months. There was no relevant systemic and personal history. The extraoral examination of the patient revealed diffuse swelling over the left infraorbital region. Obliteration of left nasolabial fold noted. The swelling was bony hard, non-tender, afebrile on palpation. Intraorally well-defined round swelling was present over the anterior part of the hard palate

Fig. 1 Intraoral examination



Fig. 1a palatal swelling

(Fig 1a). The swelling was approx. 2×2 cm in size extending from 11 till 25. The swelling was soft, fluctuant, and tender on palpation. A well-defined swelling palpated in the buccal vestibule extending from 11 to 23



Fig. 1b Vestibular swelling

(Fig 1b). Which was bony hard and tender on palpation.

The CBCT radiograph showed a well-defined, massive, radiolucent lesion extending from 14 to 25 with palatal perforation. Based on clinical and radiological findings we made a provisional diagnosis of the large cystic lesion. The incisional biopsy report presented a diagnosis of ossifying fibroma, which created a

diagnostic dilemma whether the lesion is solid or cystic.(Fig. 2a,2b & 2c)

Fig. 2 Radiographic examination

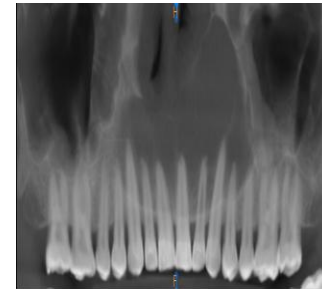


Fig. 2a & Fig.2b CBCT scan



Fig. 2c 3DCT scan

The FNAC yields yellow-colored fluid, which supports the initial cystic diagnosis (Fig.3).



Fig 3 FNAC biopsy

Based on these reports, we made a final diagnosis of the benign mixed solid and cystic lesion.

A surgery under General anesthesia planned. At the time of surgery, complete surgical excision, and the extraction of affected teeth followed by chemical cauterization with the modified Cornoy's solution carried out. Intraoperatively the lesion was cystic. We extracted 11, 12, 21, and 22 due to inadequate bony support and apicectomy was done with 13 and 23 at the time of operation. The excisional biopsy report confirms that the lesion was a radicular cyst.

DISCUSSION

Pulp necrosis or trauma to the tooth causes inflammation in the periapical region of the tooth. It can stimulate the epithelial cell rests of Malassez in periodontal ligament to form the radicular cyst. [8] In our case trauma is the causative agent for the cyst formation. The pathogenesis of the radicular cyst consists of three phases - the phase of initiation, in which the epithelial cell rests initiate proliferation in response to the inflammation. The second phase is the phase of cyst formation, in which the cyst cavity forms within a proliferating epithelial mass in an apical granuloma by degradation and death of cells in the center, and the third one is the phase of enlargement.

The epithelial component of the radicular cyst originates from cell rests of Malassez which are the remnants of Hertwig's 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. [9] Histologically, the radicular cyst generally lined by stratified squamous epithelium. A mature collagenous connective tissue wall containing inflammatory cells limits the cyst. [3]

Radiographically, most of the radicular cysts appear as well defined, round or pear-shaped, unilocular radiolucent lesions. Radicular cysts are lined by a radio opaque rim and found in the

periapical region. A slight displacement of the adjacent teeth or mild root resorption may be present in cases of radicular cysts. [10] In our case the lesion is massive and produced extensive resorption of the hard palate. Radiographic examination revealed unilocular, well defined, radiolucent lesion. Most of the radicular cysts develop slowly and rarely become large enough to extensively erode adjacent bony structures as in our case.

The treatment of the radicular cyst includes complete excision and careful curettage of periapical tissue. The affected teeth extracted, and in some cases, root canal therapy with apicoectomy can be a treatment option. Adequate surgical removal prevents the recurrence of the cyst. Incomplete removal of the cyst results in the recurrence of the lesion months or even years later. [3]

In our case, the history of trauma, the soft and fluctuant consistency of palatal swelling, the radiographic appearance of the radiolucent lesion, and fluid in FNAC biopsy support the cystic diagnosis. On the other hand, the incision biopsy of the lesion suggests the diagnosis of ossifying fibroma, which is a benign fibro-osseous tumor, and the unusual large lesion size presents an aggressive picture. These contrasting findings produced a diagnostic dilemma in our case.

REFERENCES

1. Shear M. and Speight MP textbook of Cysts of the Oral and Maxillofacial regions. 4th ed. Blackwell Munksgaard; 2007. Chapter 1, Classification and Frequency of cysts of the oral and Maxillofacial Tissues; 1-2.
2. SS MS, DP UM, Prasad S, Kumar N. Radicular Cyst-A Case report with an overview on pathogenesis. Indian Journal of Multidisciplinary Dentistry. 2013; 1; 3(4).
3. Rajendran R. Shafer's textbook of oral pathology. 7thed. New Delhi: Elsevier India;

2009. Chapter 17, Diseases of bone and joint (Non-neoplastic and non-infectious disorders of bone, Skeletal dysplasias/ Dysostoses, Constitutional bone disorders); 685-761.
4. Joshi NS, Sujan SG, Rachappa MM. An unusual case report of bilateral mandibular radicular cysts. *ContempClin Dent* 2011; 2:59-62.
 5. Koju S, Chaurasia NK, Marla V, Niroula D, Poudel P. Radicular cyst of the anterior maxilla: An insight into the most common inflammatory cyst of the jaws. *Journal of Dental Research and Review*. 2019; 1; 6(1):26.
 6. Nainani P, Sidhu GK. Radicular cyst—an update with emphasis on Pathogenesis. *Journal of Advanced Medical and Dental Sciences Research*. 2014; 2(3):97-101.
 7. Manwar NU, Agrawal A, Chandak MG. Management of infected radicular cyst by surgical approach. *International Journal of Dental Clinics*. 2011; 3:75-76.
 8. Singh C, Agarwal T, Gupta S. Surgical and supportive management of radicular cyst with palatal perforation: A case report.
 9. Amos MJ, Dalghous A, Alkhabuli J, Mizen KD. Massive maxillary radicular cyst presenting as facial fracture and abscess, a case report. *Libyan Journal of Medicine*. 2007; 2(4):211-3.
 10. Latoo S, Shah AA, Jan SM, Qadir S, Ahmed I, Purra AR, Malik AH. Radicular cyst. *JK Science*. 2009; 11(4):187.