Case report

Radicular Cyst adjacent to Danger area of Face: A Case Report

Dr. Mohd. Iklas Khan[1], Dr. Sandeep Sihmar Sihmar[2], Dr.Shalini Rathi[3], Dr.Paras[4]

1-2. Senior Lecturer, Dept. of Oral Pathology and Microbiology, Daswani Dental College, Kota , Rajasthan , India

3. Senior Lecturer, Dept. of Oral Medicine and Radiology, Maharaja Ganga Singh Dental College, Sri Ganganagar, Rajasthan India

4. Senior Lecturer, Dept. of Medical Anatomy, SGT Medical College, Gurgaon Haryana, India

Corresponding author:

Dr. Sandeep Singh Sihmar,

Senior Lecturer, Dept. of Oral Pathology and Microbiology, Daswani Dental College, Kota , Rajasthan , India

Mobile: +919254431759 email: sandeepsihmar72@gmail.com

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Abstract:

Radicular cysts are the most common (57%- 87%) asymptomatic odontogenic cysts of inflammatory origin affecting the human jaws , it can result in slow growth tumefaction and involve many adjacent sound teeth endangering their vitality and prognosis. It is usually a sequelae of the periapical granuloma originating as a result of bacterial infection and necrosis of the dental pulp, nearly always following carious involvement tooth. We discussed a case of radicular cyst near the danger area of face. It can be threatening if the cyst is present in the dangerous area of the face. The dangerous area of face comprises the upper lip, the lower part of nose and the adjacent area. It has been named as dangerous area because boils, infections of the nose and injuries around the nose, especially those that become infected can readily spread to cavernous sinus resulting in cavernous sinus thrombosis (CST). CST is generally a fulminant process with high rates of morbidity and mortality. In this case report, we are documenting a rare case of radicular cyst of "patient age and sex" in the mention the name of exact location area of the face. We surgically excised the cyst with effective antimicrobial agents and save the adjacent teeth also.

Key words: Radicular cyst, Cavernous sinus, Thrombosis, Necrosis.

Introduction:

Radicular cyst (RC) is also known as periapical cysts, dental cysts, or apical periodontal cyst. RC is the most common inflammatory odontogenic cystic lesion of the maxillary bones that accounts for more than 50 % of all the odontogenic cysts[1]. The incidence of RC is greater in the 3rd to 6th decades and shows a slight male predominance [2]. RC affects teeth with infected and necrotic pulp. These cysts occur as the direct sequelae of chronic apical periodontitis[1]. Most radicular cysts develop slowly and do not become very large. Patients do not experience pain unless acute inflammatory exacerbation is present, and the lesions are often detected only during routine radiographic examination, which is noted as a round or oval, unilocular, well-circumscribed radiolucency attached to the root of a tooth[3]. If the cyst does

become large, symptoms such as swelling, mild sensitivity, tooth mobility and displacement may be observed. The affected tooth is nonresponsive to thermal and electrical pulp tests[4]. RC can be treated with conservative endodontic therapy in small lesions, or combined with biopsy, marsupialization and enucleation[5]. Cysts of inflammatory origin do not recur after appropriate management[1]. Radicular cysts of large size are uncommon, but may present a diagnostic challenge[6].

Case Report:

A 34 year old female patient visited to Darshan Dental Care with a chief complaint of pain and swelling in upper right front teeth region since 2 years. Patient had undergone Root Canal Treatment in 11,12 teeth region 2 years before due to pain. Patient was conscious with all the vitals in normal limit. On intraoral examination, a well defined swelling was present in relation to the right maxillary central and lateral incisiors, which was soft, fluctuant and tender on palpation.

Provisional diagnosis- Radicular Cyst

Investigations

An Intra Oral Periapical Radiograph revealed a well defined radiopacity in pulp chamber and root canals of 21, 22 suggestive of root canal treatment. An ill defined radioluceny with incomplete margin present and hence advised CBCT for accurate margin and depth of the lesion.

Aspiration was done from the dominant site of swelling, which was pale yellow in color and sent for investigation. Cytology report suggestive as microscopically abundant fibroblasts can be identified with inflammatory infiltrate of variable degree. Lymphocytes are characterized by their dark stained nucleus occupying most of the cytoplasm suggestive of Radicular cyst.

CBCT of maxilla was done which revealed a well defined heart shaped bony cavity in the maxillary front teeth region with well defined radiopacity in relation to right central and lateral incisor pulpal region suggestive of root canal treatment. The cavity was extended from apex of right maxillary canine to left maxillary cental incisor with displacement of right lateral incisor mesially and right canine distally. Marsupalisation followed by

enucleation was done and tissue was sent for histopathology report.

H & E stained section shows mature collagenous connective tissue wall with a thin lining of non-keratinized stratified squamous epithelium. The cyst lining is of 3-5 cell thickness. Few areas showed hyperplasia with arcading pattern which is characteristic of radicular cyst. There is evidence of ciliated epithelium with an inflammatory cell infiltrate consists of lymphocytes and neutrophils. Foci of degeneration are also noted.

Discussion:

Periapical cyst are frequently asymptomatic and long-term evolution of maxillary radicular cysts, with their growing volume causing massive bone destruction in which skeletal reconstruction is required. To maintain the contour and function of the midface in the case of a large cystic lesion involving the supportive bony structure, it is important to reconstruct the secure buttress of the maxilla with autologous rib grafting after complete removal of the lesion. In our case we just excise the cyst lining and clean with Carnoy"s solution.[7]

In a study, 83.8% of all large maxillary radicular cysts were diagnosed from a tooth with previous endodontic treatment. Moreover, the group with radicular cysts with previous endodontic treatment was prone to chronic infection and swelling in more cases than the group without endodontic treatment. In our case we identified, a large radicular cyst associated with a asymptomatic anterior central and lateral root canal treated tooth. In new studies, the possible effects of the microbiology of endodontically and non-endodontically treated teeth are needed.[9]

It involves both the primary and permanent dentition with a range of 0.5%–3.3%. They are more common in males compared to females with a ratio of 1.6:1. The anterior maxilla is more common as compared to the mandible. The involvement of anterior maxilla may be due to trauma, caries, and old silicate restorations in the anterior teeth. In our case, female patient with lesion in anterior maxilla following an endodontic treatment is consistent with the literature.[10]

Non-Odontogenic (10%)	**Odontogenic (90%)**	
Nasopalatine (5-10%) Nasolabial (<1%) Globulomaxillary(<1%) Median(<1%)	Inflammatory Radicular (70%) Paradental (3-5%)	Developmental Follicular (10-15%) Kerotocyst (5-10%) Lateral Periodontal (<1%) Gingival(<1%)

Table. 1 Classification of epithelial lined cysts of the jaws(% of total) based on WHO Classification.[8]

Kesharwani P, Bhowmick S et al discussed a case of radicular cyst of posterior maxiila and concluded that not only the clinical findings but further radiographic investigations such as CT scan are necessary to plan the treatment. In addition, histological examination will help establish the diagnosis.[11] In this case, CBCT helps us to estimate accurate size and depth of the cyst.

Differential diagnosis includes Dentigerous cyst, Ameloblastoma, Odontogenic keratocyst but histopathology reports will help in arriving at an accurate diagnosis.

Figure1. Showing swelling in right maxillary vestibule.

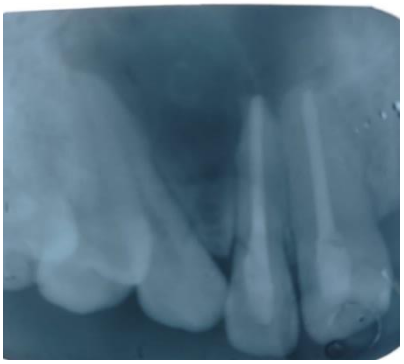

Figure-2. IOPA showing endodontic treated teeth with periapical radiolucency.

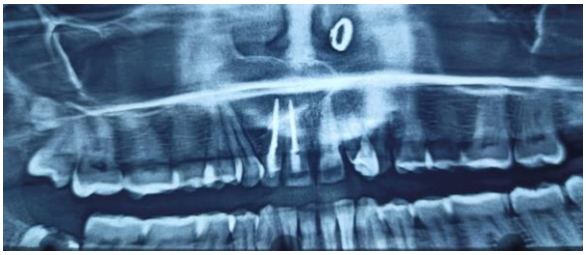

Figure-3. Orthopantomograph showing howing radioopaque lining of Cyst w.r.t 11,12,13,14,21,22.

Figure 4.CBCT showing radiolucency 30mm x 20mm size with a radioopaque lininig.

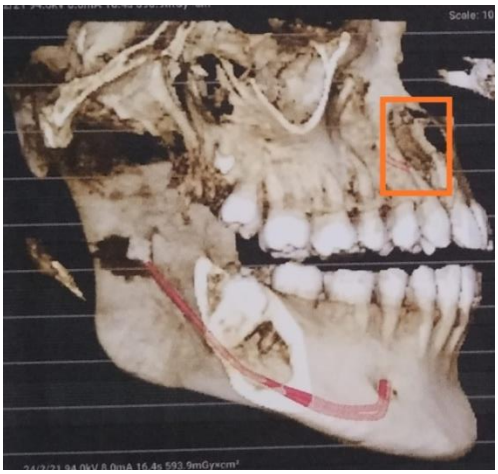

Figure 5. CBCT showing depth of the lesion in 3D view.

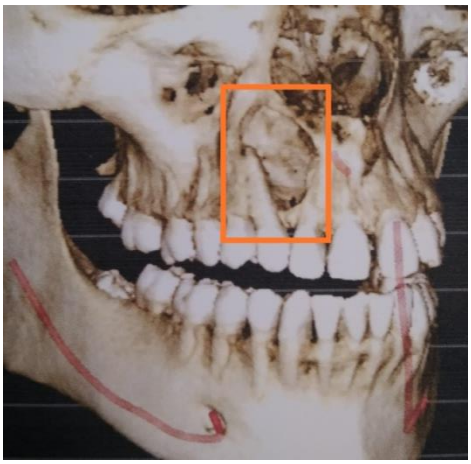

Figure 6. CBCT showing deviation of canine root in 3D view.

Figure 7 . Intra-operative showing vestibular flap elevation.

Figure 8. Intra-operative picture showing cyst opening.

Figure 9. Post operative view with suture.

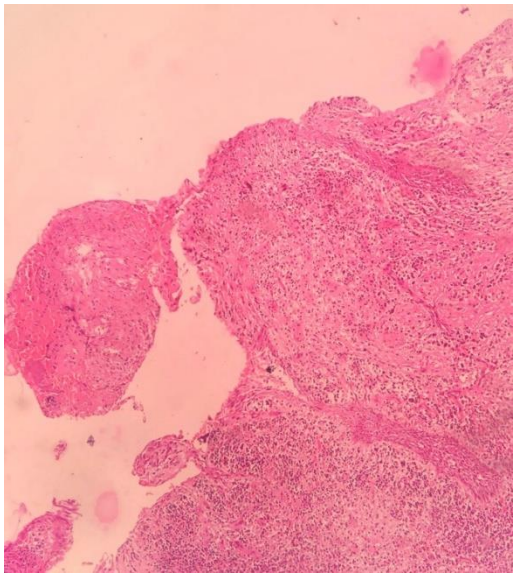

Figure 10. Photomicrograph of H & E stained slide showing 3-5 layer thick odontogenic epithelial lining with connective tissue wall containing intense inflammation.

CONCLUSION:

This is a case of large cystic lesion mimicking Ameloblastoma or Dentigerous cyst radiographically, but turns out to be radicular cyst. Hence, complete analsyis of the clinical signs and symptoms with radiographic and histopathological findings are mandatory and Diagnosis doesn't depend on the size of the lesion.

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