Surgical Enucleation of An Infected Maxillary Radicular Cyst 
with associated Infraorbital space infection: A Case Report

Dr.Ankur Gupta , Dr.D.G.Adwani , Dr.M.V.Naphade , Dr.Nitin Adwani
Department of Oral and Maxillofacial Surgery, VYWS Dental College & Hospital, Amravati, India

Abstract:

Radicular cysts are the most common cystic lesions affecting the jaws. Many radicular cysts are symptomless and are discovered when periapical radiographs are taken of teeth with nonvital pulps. Large cysts usually fulminates to bony expansions being the primary complaint, Pain and infection are other clinical features of some radicular cysts. The present case report demonstrates a large cystic lesion of right maxilla secondarily infected and was associated with infraorbital space infection. The lesion was successfully treated surgically with extraction of offending tooth and enucleation of the cyst.

Keywords: Radicular cysts, Infected cysts, Enucleation.

Introduction:

The radicular cyst is a chronic inflammatory lesion with a closed pathologic cavity lined either partially or completely by non-keratinized stratified squamous epithelium\(^1\). Radicular cysts are the most common inflammatory cysts and arise from the epithelial residues in the periodontal ligament as a result of periapical periodontitis following death and necrosis of the pulp. Maxillary anterior teeth are probably more prone than others to traumatic injuries which may lead to pulp death making maxillary cysts more frequent than mandibular\(^2\). The treatment of the radicular cyst involves the management of the nonvital tooth, either by removal or endodontic treatment, and curettage of the lesion at the time of extraction or by subsequent enucleation, apicectomy, and retrograde restoration if required\(^3\). In this case as the cyst has been infected and the infraorbital space was involved surgical approach was preferred which facilitated drainage apart from the cystic enucleation.

Case report:

A 23 year old male reported to the Department of Oral and maxillofacial surgery, V.Y.W.S. Dental College and Hospital, Amravati with a chief complaint of swelling over right side of face which was associated with continuous throbbing pain since last 3 days. There was history of moist heat over right side of face due to pain which exaggerated the swelling overnight. Detailed history revealed that he has sustained trauma to his upper anterior teeth 1 year back. From past 3 months there were recurrent attacks of slight palatal and labial swelling which used to subside after some fluid discharge and was subsequently ignored by the patient.

On Extraoral examination the swelling indicated the involvement of right infraorbital space infection. Intraoral examination revealed discolored and fractured tooth 11 with tenderness. Palatal swelling 2 × 1 cm in diameter was noted at mid palatine region from 11 to 14 region which was tender and fluctuant. Radiographic
findings revealed well defined radiolucency with well-defined sclerotic borders approximately 4 x 5 cm in dimension involving nearly half of the right maxillary sinus.

Patient consent was taken prior to any type of intervention. Endodonic treatment of the adjacent teeth 12, 13 and 14 done before proceeding with the surgical management. Surgical procedure was performed completely under local anesthesia with proper pre-operative antibiotic coverage. Bilateral Infraorbital, right posterior alveolar, greater palatine and incisive nerve block was given. Crevicular incision taken from 15 to 21 with releasing incisions, quadrangular flap raised extraction of 11 done and 4 – 5 ml pus drained from the socket. Drainage of the Infraorbital space done using blunt dissection. Window was prepared using the buccal approach by No.8 round carbide bur extending from 11 to 14. Whole cystic lining was enucleated and curettaged with care taken not to perforate the exposed maxillary sinus epithelial lining. Thorough toilet the cavity achieved by saline followed by 5% Betadine solution. Closure done using 3-0 Mersilk.

Histopathologically it showed cystic lumen, lined with thin epithelial lining supported by a fibrocellular connective tissue stroma, showing dense chronic inflammatory cell infiltrate with few cholesterol clefts proving the diagnosis as a radicular cyst.

Discussion:

The Radicular cyst is most common odontogenic cyst also called as periapical cyst, apical periodontal cyst and root end cyst. Around 60% of all jaw cysts are Radicular or Residual cyst. The pathogenesis of cysts has been described in three phases. During the first phase, the epithelial cell rests of Malassez begin to proliferate as a direct result of the inflammation and influenced by bacterial antigens, the epidermal growth factors, metabolic and cellular mediators. In the second, a cavity is formed, lined by epithelium (according to the above described theories), and in the third phase the cyst grows, probably by osmosis.

The majority of cases of apical periodontal cyst are asymptomatic. The tooth is seldom painful or even sensitive to percussion. This type of cyst is only infrequently of such a size that it destroys much bone, and even more rarely does it produce expansion of the cortical plates. It represents a chronic inflammatory process and develops only over a prolonged period of time. In some cases such a cyst of long standing may undergo an acute exacerbation of the inflammatory process and develop rapidly into an abscess (periapical abscess) that may then proceed to a cellulitis or form a draining fistula.

Treatment of cysts is still under discussion and some authors believe conservative management by endodontic therapy. However larger cysts do require surgical management including Decompression, marsupialization and enucleation. The present case showed marked signs of spreading infection through the cyst which eventually involved the infra-orbital space. Considering the larger extent of cyst and the superimposed infection surgical modality was the preferred choice of the treatment by enucleation and curettage. The healing was uneventful with gradual subsiding of the infection and swelling.
Figure 1: Pre-operative profile

Figure 2: Intraoral view

Figure 3: OPG showing Cyst Figure

Figure 4: Intra-operative
Cystic enucleation

Figure 5: Closure of surgical site

Figure 6: Postoperative profile

References –


4 Dr. G.B. Vinit, Dr. Navin Kumar Verma. Radicular Cyst: A Case Report. JMOS 2007

http://www.jismdr.org (C) International Journal of science for medical and dental research [10-13]
