Non-surgical management of a periapical cyst: A case report

Ashwini P Bhangale¹, Meenal N Gulve²

¹²Department of Conservative Dentistry and Endodontics, Mahatma Gandhi Vidyamandir’s Karmaveer Bhausaheb Hiray Dental College and Hospital, Nashik, Maharashtra, India.

Commentary:

Periapical lesions are perhaps triggered by bacterial activity¹. The endodontic microbes are most often obligate anaerobes; they efficaciously subdue the cellular and molecular host defense mechanism i.e. Neutrophils, Macrophages, Lymphocytes, and osteoclasts, cytokines, interferon, eicosanoids, and growth factors; with their virulence factors such endotoxins, enzymes, and modulins to produce the periapical pathology². There is variability observed in the periapical lesions, which include periapical abscess, periapical cyst, and periapical granuloma depending on its appearance and symptoms³⁴.

Periapical Cyst is defined as a pathological cavity which is lined by the epithelium surrounding the apex of the root of the infected tooth and is filled with gaseous or fluid content. It is the commonest cyst of odontogenic origin encountered in the oral cavity. The periapical cyst contributes to 6-55% of the periapical lesion⁵. A Periapical Cyst is a sequela of periapical granuloma⁶. The periapical cysts are often asymptomatic. The periapical cyst is prevalently encountered in the anterior region of the maxilla and frequently the stimulating factor in untreated caries. The Epithelial cell Rests of Malassez deeds as a derivation for the epithelium of the cyst⁶. The histologic examination is the most accepted method incorporated to accurately diagnose the periapical lesions as it is radiographically impossible to differentiate between a granuloma and a cyst. The histological characteristics of the periapical cyst include cyst lined by stratified squamous epithelium, surrounded by a fibrous layer constituting of chronic inflammatory cells; plasma cell in the majority, infrequently cholesterol clefts appearing in the lining epithelium and Rushton bodies⁷. A non-invasive clinical diagnosis for a periapical cyst can be attained by confirming the following factors such as, the association of the cyst is only with a non-vital tooth, discoloration, pain, tenderness on percussion, swelling associated with the soft tissue of the affected tooth, a presence of a radio-opaque margin encircling the characteristic unilocular ovoid radiolucent area which is confluent with the Lamina Dura, cortication, the dimension of the lesion is larger than 200 mm² and the fluid drained from the canals appears to be straw-colored⁸.

Endodontic treatment should be implemented as a treatment of choice preceding any surgical approach as it is less invasive. Calcium hydroxide paste is strongly endorsed for the treatment of periapical lesions. This is mainly owing to its antimicrobial and bone tissue formation properties about its highly alkaline nature which helps in neutralizing the bacterial endotoxins and hence is considered as a pioneer in the healing of the periapical pathology⁹-¹⁴. The healing of the periapical tissue takes place after the Hydroxyl ions escape through the apical foramen, surpassing the cystic lining due to the inflammatory process which in-turn initiates healing by the connective tissue intervention¹⁵. Complete removal of the necrotic tissue and the inflammatory periapical epithelium to be done to elude the recurrence of cyst, coupled with the properly fitted prosthesis, will aid in the healing of the lesion in an antiseptic environment.

Subsequently, if the endodontic treatment is unsuccessful, only then the surgical approach shall be taken into consideration¹⁶. The complete healing of the cyst after the endodontic intervention may take up to 12 months, which can be attained by appropriate debridement; trailed by obturation, and regular follow-up¹⁷.

The present case report aims at presenting the successful non-surgical management of a tooth in the maxillary anterior tooth region.
References


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Corresponding Author:
Ashwini P Bangale,
Department of Conservative Dentistry and Endodontics,
Mahatma Gandhi Vidyamandir’s Karmaveer Bhausaheb Hiray Dental College and Hospital,
Nashik, Maharashtra, India.
Email id: ashwinniebangale@gmail.com