

Dentigerous Cyst Treated Conservatively: A Rare Case Report

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Abstract

Dentigerous cysts are common cysts of the jaw, usually associated with the crowns of permanent teeth. Dentigerous cysts are usually treated with marsupialization and surgical enucleation of the cyst and the cystic lining. This case report presents the treatment of a dentigerous cyst involving the lower left quadrant which was treated conservatively by an endodontic approach and showed complete healing in a 3-month follow-up radiograph.

Keywords: Conservative approach, Dentigerous cyst, Non-surgical treatment.

INTRODUCTION

A dentigerous cyst is a commonly occurring cyst of the jaws associated with crowns of permanent teeth; they tend to be more frequent in males. Single dentigerous cysts are the second most common odontogenic cysts after radicular cysts. It usually presents with a unilocular well-defined radiolucent lesion with sclerotic margins and fluid accumulation between the epithelium and crown of an unerupted or impacted tooth.^[1] Dentigerous cyst occasionally becomes extensive as the lesion is usually asymptomatic which leads to difficulty in management; therefore, early diagnosis in such cases is of great help in conserving the surrounding oral structures.

To receive a true diagnosis, radiographic appearance along with incisional biopsy is necessary to rule out any other pathology.

However, small or extensive, management of a cyst requires meticulous diagnosis and treatment modalities to salvage the surrounding teeth and vital structures and to prevent its recurrence. Non-surgical therapy should be considered as a first-line treatment option as it proves to be a more conservative approach. The other different methods include decompression, marsupialization, and enucleation of the cyst to try and save the tooth involved to preserve the natural dentition.

Studies have reported that 94.4% of total or partial resolution of lesions of endodontic origin with simple non-surgical treatment under proper infection control.

CASE REPORT

A 32-year-old man was referred to the endodontics department for evaluation of an intraoral swelling associated with pain and pus discharge in the lower left quadrant of the jaw that had started about 4 months ago.

There were no underlying systemic diseases or syndromes present. The patient had no history of trauma to the orofacial region. Intraoral clinical examination revealed painful intraoral swelling in the region involving the lower left lateral incisor, canine, 1st premolar, 2nd premolar, and 1st molar on the buccal aspect and a partially impacted lateral incisor-32. Buccal mucosa was pale pink in color and was distended obliterating the labial and buccal vestibule. Involved teeth were tender on percussion.

On radiographic examination [Figure 1], the panoramic radiograph presented a large, well-defined unilocular radiolucent lesion with sclerotic borders in the lower left quadrant. Radiolucency was observed around the roots of the lower left lateral incisor, canine, 1st premolar, 2nd premolar, and

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Received: May. 02, 2023; **Accepted:** Jun. 01, 2023; **Published:** Jun. 08, 2023

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How to cite this article: Ghoderao PJ, Justin MR, Sarda A, Shrivastva H, Kad S, Chawardol R. Dentigerous Cyst Treated Conservatively: A Rare Case Report. J Res Adv Dent 2023;14(5):1-3.

Access this article online

Website:
www.jrad.co.in

DOI:
<https://doi.org/10.53064/jrad.2022.14.5.409>

1st molar. The lateral incisor was partially impacted between the lower left central incisor and the canine. Mesial tipping of canine and distal tipping of incisors was observed obliterating the eruption pathway of the associated lateral incisor.

Incisional biopsy was performed in the anterior left mandibular region for histopathological examination under local anesthesia. The specimen that was collected included whitish soft bits 1 cc in volume [Figure 2] which was sent for further laboratory investigations. Microscopic findings showed a cystic lining of benign squamous epithelium and moderate chronic inflammatory infiltrate rich in plasma cells which confirmed the diagnosis of an inflamed dentigerous cyst [Figure 3].

The patient was presented with the conventional approach of extraction of the impacted lateral incisor followed by marsupialization and enucleation which is the most commonly used approach for the treatment of the dentigerous cyst that is associated with the impacted tooth.

However, the patient was reluctant to undergo extraction of the impacted lateral incisor or any other surgical treatment due to which a non-surgical approach had to be formulated and presented for the patient's comfort and convenience.

The conservative approach included endodontic treatment of the lower left canine, 1st premolar, 2nd premolar, and 1st molar. Access opening was performed under the inferior

alveolar nerve block, followed by thorough chemomechanical preparation [Figure 4]. During instrumentation, the canals were thoroughly irrigated with copious amount of 3% sodium hypochlorite.

Metapex was given as an intracanal medicament for 2 weeks and was changed subsequently 4 times before obturation was carried out to allow proper healing of the periapical radiolucent lesion. Lesion regression was observed following the fourth Metapex dressing which was kept for 2 weeks each.

Surgical Pathology Report	
Clinical History :	C/O Swelling in lower front teeth region. ? Dentigerous cyst. ? Peripheral giant cell granuloma
Specimen :	Incisional biopsy of lesion in anterior mandibular region for HPE.
Gross :	Multiple whitish soft tissue bits 1cc in volume received. All processed. (Block 1)
Microscopy :	Biopsy shows a cystic lesion lined by benign squamous epithelium and moderate chronic inflammatory infiltrate rich in plasma cells. Keratin material is not seen. No e/o malignancy.
Impression :	Anterior mandibular lesion; Incisional biopsy: Consistent with inflamed dentigerous cyst. No e/o malignancy.
*** End of Report ***	

Figure 3: Diagnostic laboratory report



Figure 1: Pretreatment panoramic radiograph visualizing the unilocular radiolucent lesion in the left mandibular region



Figure 2: Specimen collected (1cc volume)

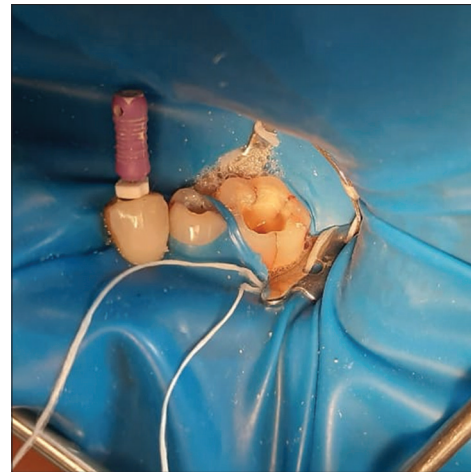


Figure 4: Access opening of premolars and molar in the lower left quadrant



Figure 5: Panoramic radiograph depicting lesion regression following 4th week of Metapex dressing



Figure 6: 1-year follow-up panoramic radiograph

After complete healing of the lesion, canals were dried thoroughly with sterile paper points, master cone was selected and obturation of the lower canine, 1st premolar, 2nd premolar, and 1st molar was carried out by lateral condensation. Access cavity was then filled and sealed.

The patient was kept for 6-month follow-up to monitor for any recurrence of apical pathology. 6-month and 1-year follow-up panoramic radiographs showed the healed lesion [Figures 5 and 6].

Limitations

The patient refused to undergo extraction with the partially impacted lateral incisor and prosthetic or orthodontic rehabilitation of the lower arch.

DISCUSSION

In this scenario, the lesion particularly an extensive lesion is treated with intracanal medicament using a conservative treatment approach. There has been an evident debate on two schools of thoughts about surgical and non-surgical approach. There have been many studies suggesting that true cyst is unlikely to be resolved without surgical intervention.^[2] Several treatment methods have been adapted for treatment one of them being marsupialization described by Partsch which requires a window. Decompression is a conservative surgical approach. Cystectomy which is complete enucleation is a more aggressive approach that endangers a lot of surrounding vital structures.^[3]

Dentigerous cyst are very commonly occurring odontogenic cysts that they are generally solitary and associated with impacted or unerupted teeth.^[1] Patients frequently present with unerupted teeth or slow-growing swelling as was in this case with partially impacted lateral incisor. Patients usually have painless swelling unlike in this case where patient presented with pain that had started 2 weeks before the patient presented to the endodontic department. In cases of cysts of odontogenic origin, histological and radiographical diagnosis is of great importance to confirm the provisional diagnosis

that is made based solely on clinical picture presented to get to a definitive diagnosis. Early diagnosis is usually done on routine radiograph.

Odontogenic keratocysts and unicystic ameloblastoma presents with the same radiographic features and are therefore regarded in differential diagnosis.

Cystic lesions associated with impacted teeth need extraction of the tooth involved and enucleation but due to patients' apprehension about surgical intervention of any kind, non-surgical treatment through intracanal medicaments and aspiration through the canal was undertaken. The advantage with root canal preparation is healing of periapical region with thorough preparation and removal of the infected pulpal tissue and reduction in bacterial colonization. The patient had to be followed with routine periodic follow-ups to monitor any recurrence of the periapical lesion. It is claimed that non-surgical management of cyst should lead to local or generalized destruction of epithelial lining.^[5]

Endodontic infection control is another most important factor to be considered in non-surgical treatment with copious irrigation and disinfection with use of appropriate intracanal medicament.^[6]

Inflammatory cyst that are treated by non-surgical means may regress post treatment by apoptotic mechanism or programmed cell death which is seen in inflammatory pocket cysts.^[4]

CONCLUSION

Root canal treatment with thorough intracanal medicament may obviate the need for surgical intervention. Surgical intervention should be opted in cases of non-responding lesions to make the treatment as atraumatic as possible.

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