

Inflammatory Dentigerous Cyst: A Case Report

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ABSTRACT

Background: Odontogenic cysts can be developmental or inflammatory in origin and are often destructive to both teeth and jaws. In many cases, clinical, radiographic and histological features overlap between various cysts. In such cases, accurate diagnosis depends upon correlation of all these findings. A dentigerous cyst is one that encloses the crown of an unerupted tooth by expansion of its follicle and is attached to the neck of the tooth. It has been also reported tooth progressing inflammation from root apex of the deciduous tooth bring about the development of dentigerous cyst around the unerupted permanent tooth. One such rare case of inflammatory dentigerous cyst (IDC) in lower left mandibular 3rd molar region in a 17 year old boy is presented in this article, which was treated by enucleation of the cysts along with surgical removal of tooth.

Keywords: Inflammatory cyst, Dentigerous cyst, Unerupted tooth, Arcading pattern.

INTRODUCTION

Dentigerous cysts are one of the most common lesions of the jaws and are often associated with impacted third molars and permanent maxillary canine. They comprise approximately 20%-24% of all jaw cysts and occur over a wide age range with peak incidence in 2nd to 4th decades. ¹⁻⁴ clinically, no pain or discomfort is associated with the cyst unless there is acute inflammatory exacerbation.

Benn and Altini indicated that at least two types of dentigerous cysts occur.⁵ The first type is purely developmental in origin and occurs in mature teeth usually as result of impaction. Enamel hypoplasia of an impacted tooth may be a significant factor in the formation of the cyst. The

second type is inflammatory in origin and occurs in immature teeth as a result of periapical inflammation from a non-vital deciduous tooth or other source, spreading to involve the tooth follicle. Main termed such cysts as 'inflammatory follicular cysts' and hypothesized that the cyst develops around the partly formed crown of a permanent tooth as a result of intra-follicular spread of periapical inflammation. ⁶ The mechanism of development of an IDC is unclear. It is reported that the inflammation present at the root apex of the overlying deciduous tooth may spread around the crown of an unerupted permanent tooth and result in formation of dentigerous cyst.⁷ The aim of the present article is to report an additional case of IDC, possibly associated with inflammation from the surrounding mucosa.

Received: June. 13, 2015; Accepted: Oct. 11, 2015

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CASE REPORT

A 17 year old male reported to K M Shah Dental College and Hospital with a complaint of pain in lower left back region since 2-3 days. The pain was sharp shooting in nature due which the patient was unable to eat food. The swelling gradually increased in size over a period of 3 months. There were no other associated symptoms.

Radiographic examination revealed a periapical radiolucent area of size 2x4 cm in size. A radiolucent region in relation to distal aspect of the 38 was also evident (Figure 1). A provisional diagnosis of pericoronitis irt 38 was made and 38 was extracted. A soft tissue was attached with tooth 38 which was sent for histopathological examination (Figure 2).

Histopathological examination of tissue specimen showed highly cellular fibrous connective tissue with discontinuous non keratinized stratified epithelium. The epithelium also shows inclusion of connective tissue with formation of arcading pattern typical of radicular cyst. The connective tissue is richly vascular, cellular and is mainly composed of mainly chronic inflammatory cell infiltration. Few Russell bodies were also evident in the connective tissue stroma.

A final diagnosis of '**dentigerous cyst with inflammatory changes**' was given considering clinical, radiographic and histopathological features.



Fig 1: Radiograph showing radiolucency distal to 38 (arrow) and periapical radiolucency with distal root 37 extending to mesial root of 38.



Fig 2: Photograph showing a small soft tissue bit attached to cervical area of 38.

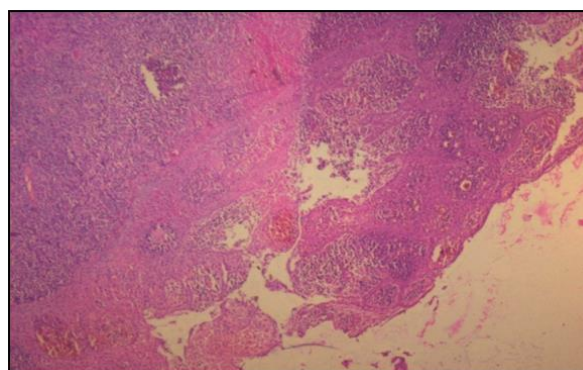


Fig 3: Photomicrograph showing nonkeratinised stratified squamous epithelial lining having arcading pattern with inclusion of connective tissue (H & E stain X 50).

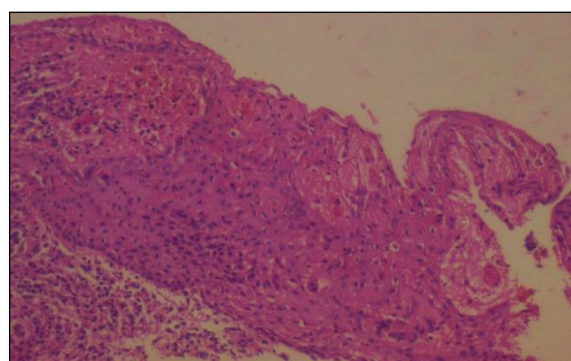


Fig 4: Photomicrograph showing stratified squamous epithelium with varying thickness and underlying connective tissue with inflammatory cell infiltrate (H & E stain X 100).

DISCUSSION

A dentigerous cyst is an epithelial-lined developmental cavity that encloses the crown of an unerupted tooth at the cement-enamel junction. Dentigerous cyst are the second most common odontogenic cyst after radicular cyst.⁴ Dentigerous cysts are usually discovered when radiographs are taken to investigate a failure of tooth eruption, mal-aligned or missing tooth.⁸ Histologically, typical non-inflammatory dentigerous cysts are lined by thin nonkeratinized stratified squamous epithelium. However, many variations in the thickness of the lining epithelium may be noted depending on type and severity of inflammation present.^{1,2}

Inflammatory dentigerous cyst (IDC) is only found in mixed dentition. Radiographically, they appear as round or ovoid well demarcated unilocular radiolucencies with a sclerotic border within the mandible.⁹ IDC are usually associated with the root or roots non-vital primary tooth and the crown of an unerupted permanent tooth. In the present case, we believe that inflammation spread from the gingiva of tooth 38. The inflammatory type of dentigerous cyst occurs in immature teeth as result of periapical inflammation from non-vital deciduous tooth or other source, spreading to involve the tooth follicle. Benn and Atlanti considered three possible mechanisms in the histogenesis of inflammatory dentigerous cysts. Main termed such as inflammatory follicular cysts and hypothesized that the cyst develop around the partly formed crown of a permanent tooth as a result of intra-follicular spread of periapical inflammation from an overlying diseased primary tooth.⁶ Three cases of inflammatory dentigerous cysts of extra follicular origin have been reported by wood et al in 1988.¹⁰

The treatment of inflammatory dentigerous cyst includes extraction of the nonvital primary tooth and marsupilization of the cysts. This allows healing of cystic cavity and eruption of permanent tooth, provided that these procedures are performed at the normal type of eruption.⁶ The procedure can be done in local anesthesia. However, the patients must be followed until the eruption of displaced permanent tooth and bony consolidation. Removal of permanent tooth may be necessary if it has arrested development or is hopelessly

displaced.¹¹ In our case enucleation was done after extraction of 48.

CONCLUSION

A dentigerous cyst is one that encloses the crown of an unerupted tooth by expansion of its follicle and is attached to the neck of the tooth. which was best treated by enucleation of the cysts along with surgical removal of tooth.

CONFLICT OF INTEREST

No potential conflict of interest relevant to this article was reported.

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