



## A Typical Dentigerous Cyst in the Mandible

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**ABSTRACT:** *Dentigerous cyst or follicular cyst are benign odontogenic cyst developmental in origin. It is usually asymptomatic and found as an incidental finding on radiographic examination unless infected. Most commonly seen in permanent dentition surrounding the crown of an impacted tooth, seldom is a deciduous tooth involved. Here we present to you a case of typical dentigerous cyst associated with impacted mandibular third molar in a 32-year-old female patient.*

**Keywords:** *benign odontogenic cyst, dentigerous cyst, follicular cyst, impacted mandibular third molar.*

### I. INTRODUCTION

The dentigerous cyst or follicular cyst originates from reduced enamel epithelium of the dental follicle of an impacted tooth mostly a part of the normal permanent dentition rarely deciduous or supernumerary tooth<sup>1,5</sup>. It is the most common odontogenic cyst after radicular cyst and comprises of 20% of all the cysts found in the jaw<sup>2</sup>. This cyst can attain a large size and can also resorb the roots of adjacent teeth<sup>3</sup>.

Dentigerous cysts are seen mostly in the second and third decade of life but according to a study conducted by Brown it was found to be more prevalent in the fifth decade of life<sup>1,5</sup>. As in our case of Dentigerous cyst found in the mandibular third molar which is the most common site for its occurrence followed by maxillary canine, mandibular second premolar and maxillary third molar<sup>2</sup>.

The radiographic appearance of a dentigerous cyst is seen as a radiolucent area with well-defined sclerotic borders involving the crown of an impacted tooth, rarely seen with trabeculae's mimicking a multilocular lesion<sup>5</sup>. In our case we present to you a typical dentigerous cyst seen in its most common site and radiographic appearance showing its simplicity in diagnosis and treatment.

### II. CASE HISTORY

A 32-year-old female from Mumbai reported to the department of dentistry complaining of pain on the right side of the mandible since one month. On clinical examination no swelling or redness was seen in the area of chief complaint. The overlying mucosa was normal without any ulcerative or degenerative changes.

On palpation, there was no bony expansion seen with respect to the buccal and lingual cortical plates posterior to 47. [fig. 1] All the third molars were impacted; rest of the oral cavity was without any pathology. The surrounding teeth were checked for vitality, mobility, and percussion test which proved to be within normal limits. Oral hygiene was good. No cervical lymphadenopathy was noted. Orthopantomograph revealed well-defined radiolucent lesion enveloping more than two thirds of impacted 48, involving the body and the start of the ramus on the right side of the mandible. [fig. 2]

Cone beam computed tomography was performed which along with the clinical and radiographic evidences helped us reach the provisional diagnosis of dentigerous cyst. This also gave us the exact extent of the lesion and helped us plan the surgery. After all routine investigations, the patient was taken under general anaesthesia. [fig. 3]

Anterior releasing incision was made on the mesial aspect of lower right second molar and extended distally till the anterior border of the ramus. Mucoperiosteal flap was reflected to expose the underlying tooth. Tooth along with the cystic lining was removed in toto, cystic lining was sent for histopathology. [fig. 4] Cavity was packed with bone-graft composed of hydroxy apatite and tricalcium phosphate, primary closure was achieved with 3-0 vicryl interrupted sutures. [fig. 5]

### **III. HISTOPATHOLOGY**

The entire lesion along with the tooth was sent for histopathological examination. Under higher magnification, a stratified squamous non keratinized epithelium, 3-6 layers thick overlying a dense fibrous stroma was seen. The stroma was fibrous comprising of compactly arranged thick to thin bundles of collagen fibres and predominantly spindle shaped fibroblasts interposed with areas of haemorrhage was seen. Scanty and patchy area of chronic inflammatory infiltrate, cut section of mucous salivary gland, as well as area of mature bone was also seen. Endothelial lined blood vessels along with red blood cells are seen in the stroma. [fig. 6] [fig. 7]

### **IV. Discussion**

Various mechanisms have been put forward to explain the pathogenesis and possible histogenesis of dentigerous cyst. Two theories of origin have been proposed: 1 extrafollicular theory of origin, 2 intrafollicular theory of origin. The intrafollicular theory states that the cyst is formed as a result of fluid accumulation between the outer and the inner enamel epithelium or the enamel organ itself. The mechanism of fluid accumulation as explained by Mains theory<sup>6</sup> states that the pressure of the impacted tooth on the follicle obstructs the venous outflow causing rapid transudation of serum across the capillary wall<sup>5</sup>.

Radiographically dentigerous cyst appear in three variants: 1 central, 2 lateral, 3 circumferential type. They are usually seen as a unilocular well defined lesion with a sclerotic border as seen in our case, rarely does it appear as multilocular lesion.

Treatment options depend on the size and the site of the cyst. In case of a large cyst marsupialization is preferred in order to conserve the bone or save the surrounding vital structures in case there is any involvement. On the other hand small cyst can be surgically removed entirely (enucleation) resulting in excellent prognosis and very rare recurrence rate<sup>7</sup>.

In our case since the cyst was not very large and was not involving any vital structures surgical enucleation was done and bone-graft was placed.

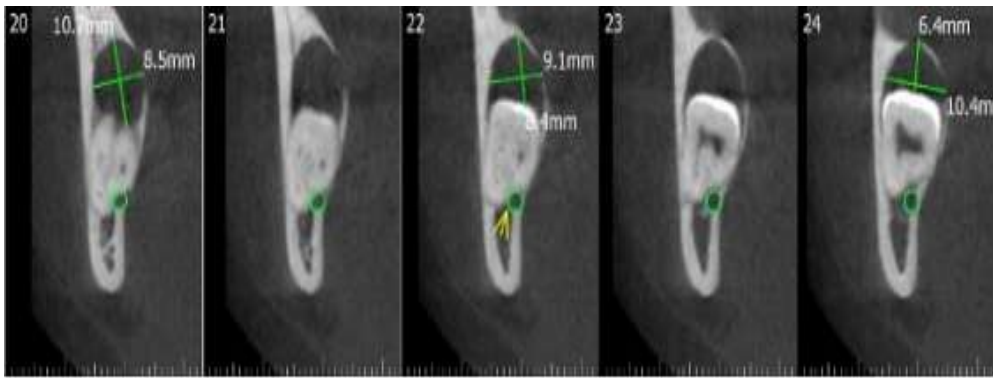
### **V. FIGURES AND TABLES**



**Fig. 1**



**Fig. 2**



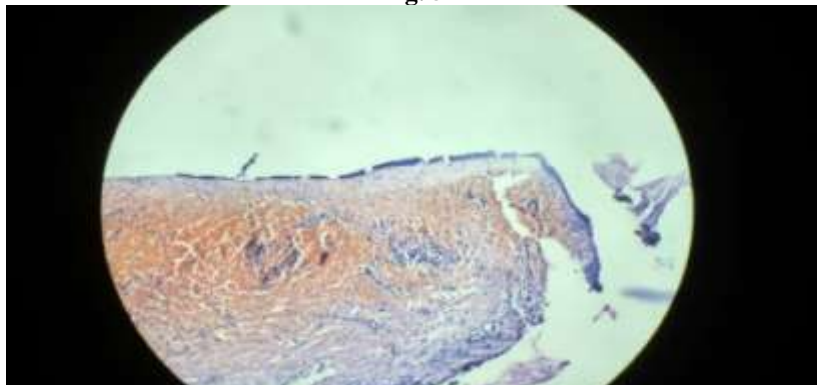
**Fig. 3**



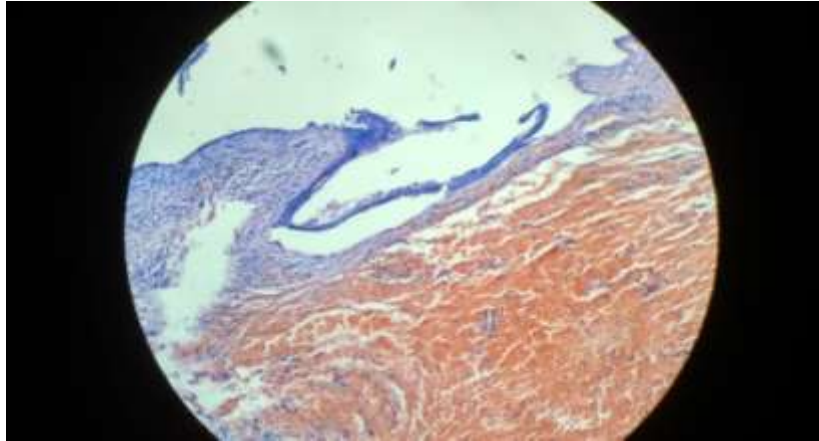
**Fig. 4**



**Fig. 5**



**Fig.6**



**Fig.7**

## **VI. CONCLUSION**

Dentigerous cyst are usually asymptomatic and can attain a large size before they can be noticed causing a lot of destruction of the surrounding bone and in some cases resorption of adjacent roots of the teeth hence we like to conclude that early diagnosis and conservative treatment may reduce the morbidity. Since the occurrence is mostly around impacted teeth, such teeth should be under regular follow ups, in order to diagnose the case at the earliest.

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