

## Case Report

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# Extensive dentigerous cyst with two ectopic teeth – surgical management

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### Abstract

*Dentigerous cyst develops around impacted, unerupted or developing teeth. It is often asymptomatic. However, it can be large and cause symptoms related to expansion. Painless swelling is the main symptoms, may be painful if infected. It can be found incidentally on dental radiography. Our patient is a 15 years old girl with painless swelling in right cheek with nasal obstruction. Diagnosis was confirmed by CT scan and needle aspiration. Under general anaesthesia enucleation of the cyst with removal of unerupted teeth was performed by Caldwell-Luc procedure. Post operative period was uneventful.*

**Key Words:** Dentigerous cyst, Cald well-Luc, Ectopic Teeth;

### Introduction

A cyst is defined as an epithelial lined pathologic cavity that may contain fluid or semisolid material. A group of cystic lesion are devoid of epithelial lining and known as pseudocyst.<sup>1</sup> Jaw cysts are more frequent in jaw bone than in any other bone because of

presence of epithelium from odontogenic (teeth) elements and nonodontogenic epithelium from of embryonic origin. The jaw cysts are classified as (1) odontogenic cysts, (2) nonodontogenic cysts & (3) pseudocysts.

Apical cysts are the most common (55 percent) and are a result of dentall infection stimulating the epithelial remnants. Dentigerous cysts are second most common (15 %to18%) type of jaw cysts. Dentigerous cysts develop from the epithelial sac that surrounds the crown of impacted, unerupted or developing teeth. They are originated from enamel epithelium after the tooth enamel is formed and cysts are developed subsequently to an accumulation of fluid between the remnant of enamel organ and the tooth crown. By convention, the follicular space around the crown of the tooth needs to be greater than 4mm to be recognized as a dentigerous cyst, as the presence of the sac is a common phenomenon that helps

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the tooth erupt through the bone of these cysts. The noninflamed dentigerous cyst has an epithelial lining composed of two to three layers of cuboidal or ovoid epithelial cells.

Small dentigerous cysts are asymptomatic but large cyst produce a bony expansion giving rise to intra oral or extra oral swelling or both, facial asymmetry & pain (when secondarily infected).

Untreated expanding cysts can cause bony destruction, infection, oral or facial sinuses, weakening of jaw, displacement of teeth, resorption of adjacent tooth root etc.

Treatment of choice is enucleation of cyst with removal of ectopic teeth. For extremely large surgical defect primary bone grafting with autologous cancellous bone to accelerate healing is required. Marsupialization of cyst is often required. Long time follow-up is required to rule out post operative recurrence and post operative cystic development.<sup>2</sup>

### Case Report

A 15 years old girl from Chattak, Sunamgonj was presented in the department of Otolaryngology & Head Neck Surgery, Jalalabad Ragib-Rabeya Medical College Hospital, Bangladesh, with the complaints of gradual swelling of the right cheek for last 3 years, nasal obstruction & absence of two tooth in right upper Jaw. She gave no history of pain & nasal discharge. On examination, extensive swelling of her right cheek causing facial asymmetry was noted (Fig-1). The swelling involved right side of nose and right upper Jaw (Fig-2). On palpation there was egg shell like crackling. Missing of canine & lateral incisor of right upper Jaw was found on examination. CT scan of nose & paranasal sinuses revealed a well delineated large (3.6 cmX3.4cm, approx) expansile cystic lesion



**Figure-1:** Facial deformity



**Figure-2:** Intra oral swelling with two missed two teeth (Lateral incisor & canine)

enclosing two ectopic teeth at right maxilla (Fig-3). The lesion pushed the lateral wall of nasal cavity towards nasal septum. There was no bony erosion. Needle aspiration from the swelling revealed a light straw coloured fluid which was diagnostic of a cyst. Thus a pre-operative diagnosis of dentigerous cyst with two ectopic tooth was made. She had undergone a Caldwell-Luc procedure under general anaesthesia where entire cyst wall together with the ectopic teeth were



**Figure-3:** CT Scan showing cyst with two unerupted teeth

enucleated from the right maxillary antrum (Fig-4). The entire specimens was sent for histopathological examination and reported as cyst with no evidence of malignancy.



**Figure-4:** Enucleated Dentigerous Cyst with two teeth

She had a course of antibiotic (cefixime and metronidazole) and her symptoms resolved following the surgery. The swollen cheek subsided (Fig-5). The postoperative period was without any complication.



**Figure-5:** Patient on 5<sup>th</sup> POD

#### Discussion

Dentigerous cysts are derive from reduced enamel epithelium surrounding the crown of an unerupted tooth.<sup>1</sup> The lower third molar and the upper canine are the most commonly involved teeth. It occurs at any age but peak incidence range from the 10-30 years.<sup>3,4</sup>

Diagnosis of a dentigerous cyst can be made by careful clinical, radiological and histological investigations.

The cyst usually remains asymptomatic but may produce painless bony expansion or facial asymmetry if it becomes large.<sup>5,6</sup> If inflamed it causes facial pain, headache, and nasolacrimal obstruction.<sup>5,6,7,8</sup> A large maxillary cyst involving the whole sinus transmit pressure to the wall of the sinus and may produce nasal & ophthalmic symptoms, i.e. Epiphora.<sup>4,5</sup>

In early stage cysts are usually discovered accidentally on routine radiological examination. X-ray revealed a well delineated round to oval mass that is associated with an unerupted teeth. However, radiographically it is difficult to distinguish dentigerous cysts

from other jaw cyst as most of them present as circumscribed, radiolucent lesion. CT scan is required in large lesion to assess degree of expansion and involvement of surrounding structure. Needle aspiration of a light straw coloured fluid is diagnostic.

Ameloblastoma, a benign epithelial odontogenic tumour has similar clinical and radiographic characteristics such as relatively rapid growth, painless facial swelling, and predilection at the mandibular molar area. Age group in ameloblastoma is younger compared to that of the cyst and odontogenic epithelium of dentigerous cyst is usually replaced by squamous epithelium.<sup>9</sup> Root resorption adjacent to the lesion is a critical factor in the radiographic differential diagnosis between the lesions and that of ameloblastoma is higher than dentigerous cyst.<sup>9,10</sup>

Despite the disadvantage of damaging the vitality of engaged teeth and tissue, cyst enucleation is the most common procedure to prevent the development of benign or malignant tumours caused by cystic remnants. The Caldwell-Luc approach was reported to be the most common treatment when dentigerous cysts are associated with an impacted tooth within the maxillary sinus.<sup>11,12</sup> Marsupialization is another treatment when cyst is burrowed beneath vital teeth or large cyst developed in elderly to preserve the cyst-associated tooth and promote its eruption.<sup>13</sup> The major disadvantage of marsupialization is the recurrence or persistence of the lesion.

After enucleation the resultant haematoma may become infected and thus prophylactic antibiotics are advised. The adjacent teeth should be monitored as these can become devitalized and large cavities can leave the Jaw weak and prone to fracture. This usually happens seven to the days after treatment when the bone is being remodeled. The patient should be warned of the risk of fracture and

advised to eat a soft diet for two to three weeks.<sup>14</sup>

### Conclusion

The dentigerous cysts are often an incidental finding on routine radiographic examination of the Jaws. Regular dental and oral examination with appropriate imaging is required to identify jaw cyst earlier before any complications like bone destruction and facial deformity can occur. The removal of impacted teeth is a preventive measure.

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