



DENTIGEROUS CYST WITH IMPACTED MAXILLARY SUPERNUMERARY TOOTH- A CASE REPORT

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<p>Article Info <i>Received 15/03/2015</i> <i>Revised 27/04/2015</i> <i>Accepted 02/05/2015</i></p> <p>Key words: Dentigerous Cyst, Impacted Supernumerary Tooth, Anterior Maxilla.</p>	<p>ABSTRACT Dentigerous cyst is the most common developmental odontogenic cyst of the jaws and is frequently noted as an incidental finding on routine radiographs. The most common teeth affected are impacted mandibular third molars and permanent maxillary canines. A patient aged 21yrs old, male reported with chief complain of swelling on left side of face and feeling of blocked left nose since last 4 months diagnosed with Dentigerous cyst, managed surgically. Dentigerous cysts are classically defined as cystic lesions that are caused by separation of follicles from around the crown of unerupted teeth. They are usually derived from the epithelial remnants of tooth forming organs. The dentigerous cyst is potentially capable of becoming a aggressive lesion. The prognosis for most histopathologically diagnosed dentigerous cysts is excellent, recurrence being a rare finding.</p>
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INTRODUCTION

Dentigerous cyst is the most common developmental odontogenic cyst of the jaws and is frequently noted as an incidental finding on routine radiographs. The most common teeth affected are impacted mandibular third molars and permanent maxillary canines [1]. The presence of ectopic tooth has been estimated to occur in 1% of the general population and has been found in the nasal cavity, maxillary sinus, mandibular bone, palate and orbital cavity of some patients [2,3]. Patients with dentigerous cyst in maxillary bone or sinus may present with facial swelling, purulent rhinorrhoea, nasal obstruction, external nasal deformity and epiphora. Radiographically, it typically shows a unilocular radiolucent shadow with a well-defined sclerotic border associated with the crown of an unerupted tooth [4,5]. This paper addresses its unusual location, the important aspect of its etiopathogenesis, its clinical characteristics, differential diagnosis and management.

CASE REPORT

A patient aged 21yrs old, male reported to the department of oral & maxillofacial surgery, PGIDS, Rohtak, with chief complain of swelling on left side of face and feeling of blocked left nose since last 4 months. Swelling was progressively increasing and there was no associated pain except difficulty in nasal breathing. On examination, facial asymmetry was present with a diffuse swelling lateral to the left side of nose, which was non tender, a febrile, non-pulsatile. Intraorally, complete set of teeth were present, a soft swelling was present obliterating the left labial vestibule in relation to 21, 22, 23 (fig-1). On aspiration a clear straw color fluid was aspirated following which an orthopantomogram of the patient was done. The orthopantomograph (fig-2) revealed a well defined unilocular radiolucency surrounding a tooth, circular in shape with corticated periphery, displacing the left maxillary sinus, present in the left maxilla.



A provisional diagnosis of dentigerous cyst associated with supernumerary tooth was made. An incisional biopsy was planned and done, tissue procured was sent for histopathological examination that came out to be dentigerous cyst which was consistent with clinical diagnosis.

Management: After going through routine investigation and taking informed written consent, patient was planned for enucleation of the lesion under local anesthesia, along with the removal of the supernumerary teeth. Mucoperiosteal flap was reflected from 13 to 25 using Howarth's and no. 9 Molt's periosteal elevator to expose the lesion. On exposure, (fig-3) thinned out cortical bone was found in relation to 21, 22, 23. The thinned out cortical

bone was removed with the help of bone rongeur, exposing the cystic lining. The cystic lining was then separated from the bone with the help of Lucas curette along with the tooth (fig-4). The tissue procured was preserved in a vial containing 10% formalin. This was followed by complete toilet of the surgical wound using betadine & saline. After achieving the haemostasis, the wound was closed with 3-0 silk suture material (fig-5). Patient was put on a course of antibiotics and analgesics. Patient reported on 7th postoperative day for suture removal and healing was found to be satisfactory. There was no apparent complication following the surgery. The removed tissue was submitted for histopathological examination and that comes out to be a dentigerous cyst.

Figure 1. Preoperative swelling showing obliteration of left maxillary vestibule



Figure 2. Preoperative orthopantomogram showing radiolucency surrounding impacted supernumerary tooth on left side of maxilla.



Figure 3. Intra operative photograph showing thinned out cortical bone.



Figure 4. Intraoperative photograph showing cystic lining removed in-toto along with supernumerary impacted tooth.



Figure 5. Closure of the surgical site



DISCUSSION

Dentigerous cysts are the most common developmental odontogenic cysts. They are usually derived from the epithelial remnants of tooth forming organs [6]. Dentigerous cysts are classically defined as cystic lesions that are caused by separation of follicles from around the crown of unerupted teeth. Most commonly dentigerous cyst involves lower 3rd molar (mandibular). Dentigerous cysts were earlier termed as "Follicular cysts" since it was assumed that these cysts were derived from tooth follicle which is a mesodermal structure. Later this term was abandoned as it was conceived on an erroneous perception. Dentigerous cysts can also be caused by:

1. Impacted teeth
2. Supernumerary teeth – Is defined as teeth in excess of usual configuration of 20 deciduous and 32 permanent teeth. Dentigerous cysts arising from supernumerary teeth, nearly accounts for 5% of all these cysts.
3. Ectopic teeth (eruption of the teeth in sites other than the natural position). Most commonly seen ectopically erupted teeth involves 3rd molars
4. Rarely a tooth / root of teeth may be found in the sinus cavity. These teeth may have dentigerous cyst associated with it [7].

Theories of dentigerous cyst formation:

Usually all dentigerous cysts arise from the enamel organ after completion of amelogenesis.

Dentigerous cyst arises due to accumulation of fluid causing separation of enamel of the unerupted tooth. The fluid present inside the cyst is hyperosmolar due to the presence of albumin, immunoglobulin and squamous epithelial debris. This hyperosmolar fluid causes influx of extracellular fluid into the cyst causing huge expansion of cyst to occur. The epithelial lining of the cyst secretes collagenase and osteoclast activating factor which causes local bone resorption causing further increase in the size of the cyst. This enlarging cyst encloses the crown of the unerupted teeth and is attached to its cemento-enamel junction.

Radiographically[8], the dentigerous cyst presents as a well-defined unilocular radiolucency, often with a sclerotic border. Three types of dentigerous cyst have been described radiographically: The central or coronal variety, in which the radiolucency surrounds just the crown of the

tooth, with the crown projecting into the cyst lumen. In the lateral variety, the cyst develops laterally along the tooth root and partially surrounds the crown; the circumferential variant exists when the cyst surrounds the crown but also extends down along the root surface, as if the entire tooth is located within the cyst. Our case was radiographically a presentation of the circumferential variety.

Typically, dentigerous cysts are painless and small. However, they may be large and result in a palpable mass as seen in our patient. It usually presents in the second or third decade of life and can originate from any tooth including supernumerary tooth [9] as was in our case. Furthermore, it shows a male predilection [10] like in our case. Clinical presentation may include facial swelling, intra oral swelling, nasal symptoms and ophthalmological manifestations of nose and paranasal sinus diseases [11]. The differential diagnosis of dentigerous cyst includes odontogenic tumor, unicystic ameloblastoma, and fibrous dysplasia of the maxilla, osteoma of the maxilla and sino nasal malignant tumors¹². When small, it is difficult to differentiate a dentigerous cyst from a large but normal dental follicle. Occasionally, other more ominous lesions arise within the walls of the dentigerous cyst, including mucoepidermoid carcinoma arising from mucous cells within the cyst walls and squamous cell carcinoma¹³. Treatment usually involves removal of the entire cyst and the associated unerupted tooth as was in our case; however, marsupialization of the cyst is also reported.

CONCLUSION

The odontogenic cysts are derived from epithelium associated with the development of the dental apparatus. The type of epithelium can vary with most lesions having stratified squamous but some developmental or fissural cysts in the maxilla may have respiratory epithelium. Dentigerous cyst is one of the most common types of developmental odontogenic cyst estimated to be about 20% of all jaw cysts. The dentigerous cyst is potentially capable of becoming an aggressive lesion. The prognosis for most histopathologically diagnosed dentigerous cysts is excellent, recurrence being a rare finding. In all dentigerous cyst, the microscopic features must be determined, to rule out its transformation in an ameloblastoma or, to squamous cell carcinoma.

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