

## Case Report

# Dentigerous cyst in a 8 year old child – A case report

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### Abstract

A dentigerous cyst or follicular cyst is a benign expansile lesion derived from hydrostatic expansion of a dental follicle and surrounds the crown of an unerupted tooth. These cysts are not common in maxilla and in children under 10 years of age. This article reports the unusual presentation of a case of dentigerous cyst associated with the unerupted permanent maxillary canine in an 8-year-old male child.

**Keywords:** Dentigerous cyst, follicular cyst, maxilla, unerupted tooth

## Introduction

Dentigerous cyst or follicular cyst is a type of odontogenic cyst which encloses the crown of an unerupted tooth and is attached to the amelocemental junction<sup>1</sup>. Dentigerous cyst is the second most common odontogenic cyst contributing about 16.6% to 21.3% of all odontogenic cysts<sup>2</sup>.

Dentigerous cysts occur over a wide age range and commonly develop in the second and third decades of life<sup>3-6</sup>. These cysts may go undetected until it has enlarged sufficiently to produce jaw expansion. Pain is not a feature unless there is secondary inflammation. Main<sup>7</sup> designated such cysts as inflammatory follicular cysts. Most lesions are usually detected during routine radiographic examination, because of eruption failure, or missing tooth. They are less common in the maxilla than in the mandible and show male predilection. Dentigerous cysts in a child are extremely uncommon<sup>8</sup>. This article reports the case of a dentigerous cyst associated with the unerupted permanent maxillary canine in an 8-year-old male child.

## Case Report

A boy aged 8 years reported to a private dental clinic, with a chief complaint of swelling on the right side of the face since 4 months. The patient was apparently healthy and his past medical history was non-contributory. Extra oral examination revealed a single diffuse swelling on right side of

the cheek. The colour of overlying skin was normal.

Intra oral examination showed presence of a right maxillary mass measuring approximately 2.6 cm in diameter and extending from the buccal vestibule of maxillary right deciduous canine to the maxillary right second deciduous molar. The buccal cortical plate showed slight expansion and the overlying mucosa was inflamed [Fig 1]. Carious lesions involving the deciduous canine, first and second molars were evident in the right maxillary quadrant. The patient was in early mixed dentition stage and presented multiple carious lesions. Deep carious lesions were evident in both the mandibular first permanent molars. Radiological examination included panoramic radiograph and PA skull which showed a well defined unilocular radiolucent lesion around the crown of unerupted maxillary right permanent canine, which presented one third of root development [Fig 2 & 3].

Based on clinical and radiological examination, a provisional diagnosis of dentigerous cyst was made. Aspiration yielded yellowish straw coloured fluid, which was consistent with the diagnosis of a cystic lesion. Routine blood and urine investigations were within normal limits. Surgical enucleation of the dentigerous cyst and extraction of unerupted maxillary right permanent canine was done followed by primary closure of the wound. The cyst was seen attached to the neck of the involved tooth [Fig 4].



Figure 1: Pre operative photograph of bony expansion in maxillary right quadrant

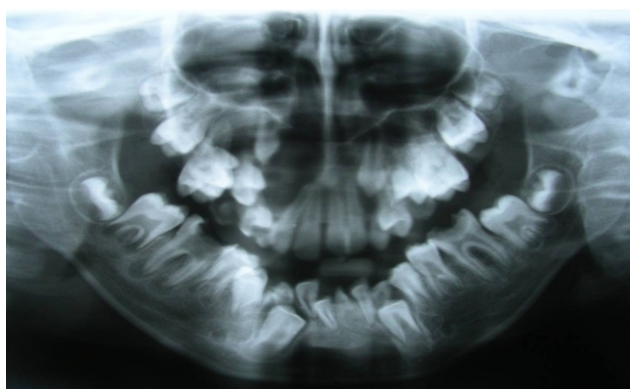


Figure 2: Panoramic radiograph showing radiolucent area involving the unerupted maxillary right permanent canine



Figure 3: PA view of skull



Figure 4: Excised specimen showing cyst attached to the amelocemental junction of the maxillary right permanent canine

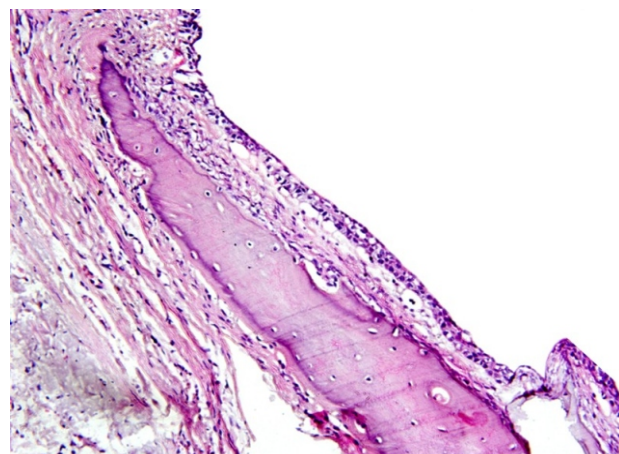


Figure 5: Histopathological picture exhibiting cystic lining with squamous epithelium and occasional presence of mucous cells in the epithelial lining (H&E stain 20x)

The specimen was sent for histopathological examination which revealed cystic wall lined by 2-3 layered thick flattened squamous epithelium with occasional presence of mucous cells [Fig 5]. Suture removal was done after one week and the healing was uneventful. Oral rehabilitation was planned and suggested to the parent but unfortunately the patient did not turn up for subsequent visits.

## Discussion

Dentigerous cysts or follicular cysts belong to the group of developmental odontogenic cysts which develop by the accumulation of fluid within the follicular space of an unerupted tooth after its crown has fully formed. They are seen attached to the neck of the tooth, and is referred to as one

that is in dentigerous relationship to the tooth<sup>9</sup>.

The stimulus and the mechanism of cyst formation remain unclear. Several theories have been proposed to explain its origin<sup>3,4,10,11</sup>. Bloch in his hypothesis suggested that the resultant periapical inflammation from an overlying necrotic deciduous predecessor will spread to involve the follicle of unerupted permanent successor resulting in accumulation of inflammatory exudates, thus leading to dentigerous cyst formation<sup>11,12</sup>. The presence of pain or discomfort associated with this cyst is not a common feature. In the case discussed here, one possible explanation could be that the cyst originated from carious maxillary right deciduous canine, thereby suggesting the role of inflammatory exudate from deciduous teeth as a risk factor in the etiology of dentigerous cysts.

Dentigerous cysts might affect unerupted, impacted, or supernumerary teeth or odontomas, and most frequently involve the mandibular third molar followed in order of frequency by the maxillary canine, mandibular second premolar and maxillary third molar, these teeth being the ones that most frequently fail to erupt<sup>1,3,6</sup>. Small cysts usually exhibit no clinical symptoms, but the less common larger ones cause bony expansion<sup>9</sup>. Some unerupted teeth have a slightly dilated follicle in the pre-eruptive phase. While a normal follicular space is 3-4 mm thick, a dentigerous cyst can be suspected when the follicular space is more than 5 mm<sup>5,12</sup>.

Radiologically dentigerous cyst appears as a unilocular radiolucent area with well defined sclerotic margins, unless when they are infected then the margins are poorly defined, associated with the crown of an unerupted tooth and demonstrates dentigerous relationship. Dentigerous cysts are by far the most common lesions that often exhibit marked displacement of the unerupted tooth within the jaw<sup>9</sup>. With the pressure of an enlarging cyst, the unerupted tooth can be pushed away from its direction of eruption, e.g. the upper canine or incisor may be pushed up into the maxillary sinus or floor of the nose. Odontogenic keratocysts and certain odontogenic tumors may have a similar radiographic appearance and may warrant differentiation by histological examination.

The differential diagnosis of a dentigerous cyst should include other cystic lesion like the odontogenic keratocyst

and odontogenic tumours such as ameloblastoma, ameloblastic fibroma and adenomatoid odontogenic tumour<sup>13,14</sup>. The relationship of the cyst lining to the cervical line of the tooth involved is important. The final diagnosis must be based on both clinical and microscopic examination to determine the lesion type and confirm the diagnostic hypothesis.

The treatment choice of a dentigerous cyst should be based on the size of the lesion, location of the cyst, age of the patient, dentition affected, and relationship with surrounding vital structures<sup>15</sup>. Larger cysts are best treated by marsupialisation or decompression technique and are indicated for growing children and adolescents. This procedure relieves pressure of the cystic fluid, thus reducing the cystic space and allows the spontaneous eruption of the unerupted/impacted tooth<sup>4,10,13,15,16</sup>.

Conservative treatment of a dentigerous cyst in a permanent mandibular molar using erbium lasers has been reported<sup>17</sup>. Enucleation of the cyst along with removal of the involved tooth has been favoured by many authors<sup>3,14,18</sup>, which was the treatment of choice in the present case.

Although dentigerous cysts are more often found in the mandible, they may occur, as in our patient, in the maxilla. The present case can be considered uncommon owing to its unusual occurrence in an 8-year-old male child involving the maxilla and associated with inflammation. Early diagnosis of these cysts is essential to prevent extensive treatment and that they can be managed conservatively.

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