

*Case Report***INFLAMMED DENTIGEROUS CYST IN A 6YR OLD CHILD – A CASE REPORT**

Mohan S, Chauhan A, Agrawal T, Abhishek A

**Abstract:** A dentigerous cyst or follicular cyst is an odontogenic cyst of developmental origin, associated with the crown of an unerupted tooth. Such cyst remains initially completely asymptomatic unless when infected. It is the second most common odontogenic cyst after the radicular cyst. Very few of these cysts have been reported in young children below 10 years of age. This article describes a rare case of inflamed dentigerous cyst in a 6-year-old boy. The clinical, radiographic and histopathologic features are discussed; the increased possibility of occurrence of these cysts at a very young age and the importance of timely diagnosis of such cysts to avoid future complications is emphasized. The chosen treatment was cystic enucleation followed by tooth extraction.

Keywords: Developmental; Dentigerous; Cyst; Odontogenic; Enucleation; Marsupialization;

**INTRODUCTION:**

Dentigerous cysts comprise the second most common type of odontogenic cysts, after radicular cysts, representing nearly 20% of all the true jaw cysts.<sup>1,2</sup> The WHO classification of jaw cysts refers to the dentigerous cysts as epithelial developmental odontogenic cysts.<sup>3</sup> They are attached to or enclose the crown of the unerupted tooth at the cemento-enamel junction.<sup>4</sup> Dentigerous cysts occur predominantly in the third molar region of the mandible. These cysts are often asymptomatic unless there is an acute inflammatory exacerbation and, therefore, these lesions are usually diagnosed on routine radiographic examination.<sup>5</sup> Swelling, tooth mobility, teeth displacement, and sensitivity may be present if the cyst reaches the size larger than 2 cm in diameter.<sup>6</sup> Radiographs show a unilocular radiolucent lesion with well-defined sclerotic margins that is associated with the crown of an unerupted tooth. Radicular resorption of teeth in the region of the lesion is common.

The diagnosis of dentigerous cyst should not be made on radiographic evidence only; it must be based on both macroscopic and microscopic examination. The complications associated with dentigerous cyst include pathologic bone fracture, loss of permanent tooth, bone deformation, and development of squamous cell carcinoma. Since the cyst may increase in size, the indicated treatment is surgical removal of lesion and involved teeth, or decompression to salvage the

involved teeth.<sup>1</sup> Dentigerous cyst is usually removed through an intraoral approach; however on rare occasion an extraoral approach is required.

Here, we are reporting a case of 6 year old boy having inflamed dentigerous cyst with its detailed management.

**CASE REPORT:**

A 6 year old boy was referred to Department of Oral & Maxillofacial Surgery, K.D. Dental College and Hospital, Mathura, with chief complaint of swelling on the right side of mandible since 4 months. The patient was apparently alright four months back, after that he noticed a swelling on right side of face, which gradually increased in size (Fig 1). The patient gave no history of pain in the region of the chief complaint. On general examination, the patient was healthy and gave history of assault but there was no history of hospitalization.

Extra-oral examination showed a diffuse swelling on the right side of the face at the angle of the mandible which was hard and non-tender on palpation at the time of clinical examination with no sinus or active discharge of pus. On intra-oral examination, a hard swelling in 84, 85 regions were found with obliteration of buccal vestibule (Fig 2). The swelling was bony hard with expansion of buccal cortex in 84, 85 regions with no expansion of lingual cortex. There was a "typical egg shell cracking" found in relation to 85 region.

Orthopantomograph (OPG) revealed an oval-shaped unilocular radiolucency around the developing first permanent molar with sclerotic border (Fig 3). Based on clinical and radiographical examination, a provisional diagnosis of dentigerous cyst was made. The contents of the swelling were aspirated and sent for investigation, which revealed yellowish, straw-colored fluid. Other routine investigations were within normal limits. Surgical enucleation of the dentigerous cyst was done (Fig 4) and extraction of unerupted mandibular first molar was done followed by marsupialization of wound. The specimen was sent for histopathological examination (Fig 5) which revealed cystic wall lined by 2-3 layered thick flattened squamous epithelium with occasional presence of mucosal cells. Based on these features, the final diagnosis of inflamed dentigerous cyst was given. Regular monthly follow up was done (Fig 6) during which the clinical and radiographic evaluation showed no signs of recurrence. Three months post-operative result showed good prognosis of the case (Fig 7)



*Fig 1: Preoperative swelling seen on right side of mandible*



*Fig 2: Intraoral view of swelling in relation to 84,85 region*



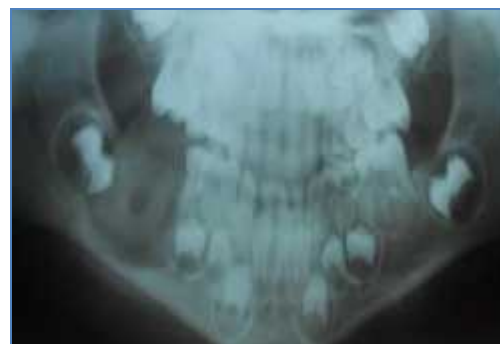
*Fig 3: Preoperative radiograph showing radiolucency in 46 region.*



*Fig 4: Intraoral surgical enucleation of cyst*



*Fig 5: Enucleated cyst sent for histopathological examination*



*FIG 6: Postoperative radiograph after one month showed that size of cyst decreased gradually*

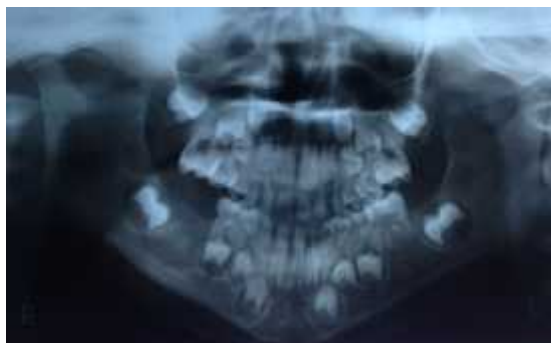


FIG 7: Postoperative radiograph after six months showing bony consolidation

## DISCUSSION

Dentigerous cysts are developmental odontogenic cysts, believed to develop around the crown of an unerupted or impacted tooth by accumulation of fluid between the reduced enamel epithelium (REE) and the tooth enamel.<sup>7</sup> Toller<sup>8</sup> suggested that the likely origin of this cyst could be the breakdown of proliferating cells of the dental follicle after impeded eruption. Occurrence of dentigerous cysts according to shear is usually in 3<sup>rd</sup> and 4<sup>th</sup> decade.<sup>9</sup> In contrast to this finding, Y Shibata *et al.* showed that the age of discovery of the dentigerous cyst was generally 9-11 years.<sup>10</sup> Though most dentigerous cysts are developmental in origin, there are a few examples of these cysts with inflammatory pathogenesis. Benn and Altini<sup>11</sup> have proposed three feasible mechanisms that exist for histogenesis of the dentigerous cyst. Developmental dentigerous cyst forms from dental follicle and becomes secondarily inflamed, and the source of inflammation is usually a non-vital tooth. The second type develops from radicular cyst, which forms at apex of a non-vital deciduous tooth. The permanent successor erupts into radicular cyst and results in dentigerous cyst that is extra follicular in origin. Third type is due to peri-apical inflammation from non-vital deciduous tooth or other source, which spreads to involve follicle of permanent successor, as a result of inflammatory exudates and dentigerous cyst formation occurs as seen in our case. The diagnosis of dentigerous cyst is based on the combination of radiographic, histopathological, and clinical features. The usual treatment is careful enucleation of cyst together with the removal of unerupted

tooth. If eruption of the involved tooth is feasible then the marsupialisation is performed. Large dentigerous cysts can be treated with enucleation or marsupialisation with complete lining may be excised at a later stage with less extensive surgical procedure.<sup>12</sup> Complete removal of the cyst is extremely important given that, recurrent cysts, ameloblastoma, squamous cell carcinoma and mucoepidermoid carcinoma have been reported to result from long-standing dentigerous cyst or its remnants.<sup>13</sup>

**CONCLUSION:** Dentigerous cysts are rare in the first decade of life, and when they occur, they manifest with minimal symptoms. But they can attain considerable size over a period of time. A thorough review of a child's initial radiographs is important to detect the presence of these cysts in very young children. Our case, is a rare presentation of dentigerous cyst in a 6-year old boy. In summary, dentigerous cyst development associated with an unerupted permanent tooth is not uncommon. As dentigerous cysts are asymptomatic, they can attain considerable size without the notice of the patient, and this warrants the early clinical and radiographic detection of the cyst, so that early treatment strategies will prevent or decrease the morbidity associated with the same.

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