

## Case Report

# An Uncommon a Giant Dentigerous Cyst Associated With Unerupted Canine: A Case Report



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**Citation** Owlia F, Akhvan Karbasi MH, Pachenari SH, Heidary A. [An Uncommon a Giant Dentigerous Cyst Associated With Unerupted Canine: A Case Report (Persian)]. *Qom Univ Med Sci J.* 2023; 16(12):1032-1043. <https://doi.org/10.32598/qums.16.12.2606.1>

**doi** <https://doi.org/10.32598/qums.16.12.2606.1>



Received: 12 Mar 2022

Accepted: 18 Feb 2023

Available Online: 01 Mar 2023

### Keywords:

Dentigerous cyst,  
Marsupialization,  
Case reports,  
Odontogenic cysts

## ABSTRACT

**Background and Objectives** Dentigerous cyst (DC) is the second most common developmental odontogenic cyst. On radiographic images, it usually seen as a well-defined unilocular radiolucency in the area surrounding the crown of an unerupted tooth. This study aims to report a case of giant DC in a 9-year-old boy who was treated conservatively.

**Case Report** This study reports a rare case of a mandibular DC associated with the crown of unerupted canine in a 9-year-old boy complained of swelling for about 5 months who had been treated by marsupialization.

**Conclusion** Conservative treatments for the large inflammatory DCs in children can lead to good results, ensuring the normal development of teeth, and proper bone repair.

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## Extended Abstract

### Introduction

**D**entigerous cyst is the most common radiolucent lesion around the tooth crown which is originated from the follicle of an unerupted tooth. This cyst is usually asymptomatic, but it may be extensive and aggressive with rapid growth. In radiography, it is usually seen as a well-defined unilocular radiolucency. It is attached to the cemento-enamel junction area. This cyst is seen in different age groups, but mostly in the second decade of life; its incidence is lower in children under 10 years of age, and it affects men more than women. Dentigerous cyst is mostly seen in mandibular third molar and maxillary canines

Different methods have been suggested for the treatment of dentigerous cyst including enucleation, marsupialization, or their combined use, which is selected depending on the patient's age and the cyst size. Enucleation involves the complete removal of the lesion through surgery, which leads to the reduction of its recurrence, but has the risk of damage to the surrounding vital structures. Marsupialization is a conservative method that sometimes leads to the spontaneous eruption of the involved teeth. Appropriate treatment of dentigerous cyst is necessary because any delay in treatment can lead to deformity, loss of teeth, or turning into tumor and carcinoma.

### Case Report

The patient was a 9-year-old boy referred to the Department of Oral and Maxillofacial medicine of [Shahid Sadoughi University of Medical Sciences](#) in Yazd, Iran with a complaint of bone swelling on the left side of the lower jaw for five months. The patient did not complain of pain or sensory changes in this location. In the extra-oral examination, asymmetry and swelling in the mandibular right angle with hard consistency were observed. In the intraoral examination, a buccolingual bony swelling was observed in the right lower jaw from the mesial of the right lateral incisor to the mesial of the right first molar. The swelling was in the depth of the buccal vestibule and had a hard bone consistency in most areas and a soft consistency in some areas. In the periapical region of tooth E, a prominent white area was seen. In addition, there was decay on the adjacent teeth.

Panoramic and periapical radiographs were requested for the patient. In the panoramic image, unilocular radiolucent lesion with dimensions of 4×8 cm was seen with well-defined border. In terms of mesiodistal extension, the

lesion started from the canine tooth bud on the opposite side of the lower jaw (migrated to the adjacent side and crossed the midline) and extended to the periapical area of the right permanent first molar. In terms of vertical expansion, the lesion extended from the alveolar crest to the edge of the lower border of the mandible, causing a thin border. Root resorption in primary teeth and the displacement of the buds of teeth 43-45 were evident. In the periapical images, it was clear that the lesion border was from the distal of tooth 2 with no clear sclerotic appearance.

In the cone-beam computed tomography (CBCT) images, a unilocular radiolucent lesion with distinct and irregular border was observed in the lower jaw on the right side, extending from the midline along with displacement of the permanent buds and resorption of the roots of the primary teeth. In addition, extensive destruction of buccal and lingual plates was evident in the images with 3D reconstruction.

With the aim of conservative surgery and due to the large size of the lesion, the teeth 83 and 84 were first extracted under local anesthesia and a sample of the cyst wall from the area was collected and sent for histopathological examination. Then, a drain was put in the place for decompression. In the panoramic radiographs two months after the start of the treatment showed changes based on ossification and the movement of permanent teeth buds was evident in the eruption path. During the one-year follow-up period, the patient did not report any pain. In intra-oral and extra-oral examinations, no swelling was observed. Panoramic radiography and CBCT were requested for the patient. Bone formation was evident in both panoramic and CBCT images and no cystic space was observed

### Discussion

Conservative treatments for large inflammatory dentigerous cysts in children can lead to good results with minimal intervention, ensuring the normal development of teeth and proper bone repair. The general condition of the patient can affect the choice of appropriate treatment method. The patient should be followed up until the permanent tooth erupts.

### Ethical Considerations

#### Compliance with ethical guidelines

In this study, informed consent was obtained from the parents of patient. They were assured of the confidentiality of their information. This study was approved by the Research Ethics Committee of [Shahid Sadoughi University of Medical Sciences](#) (Code: IR.SSU.DENTISTRY.REC.1400.040).

### **Funding**

This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

### **Authors contributions**

All authors contributed equally in preparing all parts of the research.

### **Conflicts of interest**

The authors declare that there is no conflict of interest.

### **Acknowledgements**

The authors would like to thank the Pathology Department of the School of Dentistry in [Shahid Sadoughi University of Medical Sciences](#) and the patient's parents for their cooperation.