



## Marsupilisation of Dentigerous Cyst of Developmental Origin for Orthodontic Eruption of Impacted Maxillary Incisor: A Rare Case Report

**Paramjot Kaur<sup>1\*</sup>, Himanta Bansal<sup>2</sup>, Ishpaul Singh<sup>3</sup>, Rahul Garg<sup>4</sup>, Harkirat Kaur Batth<sup>5</sup> and Taruna Khosla<sup>6</sup>**

<sup>1</sup>Reader, Department of Oral and Maxillofacial Surgery, BJS Dental College and Research Institute, India

<sup>2</sup>Head of Department, Professor, Oral Pathology, BJS Dental College and Research Institute, India

<sup>3</sup>Professor, Oral Pathology, BJS Dental College and Research Institute, India

<sup>4</sup>Reader, Department of Orthodontics, Maharaja Ganga Singh Dental College and Research Institute, India

<sup>5</sup>Sehat Hospital, PH-1, Urban Estate, Jamalpur, Ludhiana, Punjab, India

<sup>6</sup>Reader, Conservative Dentistry, Maharaja Ganga Singh Dental College and Research Institute, India

**\*Corresponding Author:** Paramjot Kaur, Reader, Department of Oral and Maxillofacial Surgery, BJS Dental College and Research Institute, India

**Received:** September 25, 2019; **Published:** October 29, 2019

**DOI:** 10.31080/ASDS.2019.03.0682

### Abstract

The word dentigerous cyst means “tooth bearing” cyst. There are various treatment modalities for dentigerous cysts. However, when preservation of the tooth is desirable, then marsupialization is the treatment of choice. We present a rare case of a 15 year old female patient with a cystic space associated with impacted right maxillary central incisor. The cyst was marsupilised. The histopathology report confirmed the dentigerous cyst. Tooth erupted in the oral cavity after surgical exposure which was followed by minor orthodontic traction. The impacted permanent central incisor became vertical from labially horizontal position in 6 months.

**Keywords:** Surgical Exposure; Impacted Central Incisor; CBCT; Self Marsupilising Dentigerous Cyst

### Introduction

Dentigerous cyst can be defined as an odontogenic cyst that surrounds the crown of an impacted tooth; caused by fluid accumulation between reduced enamel epithelium and the enamel surface, resulting in a cyst in which the crown is located within the lumen [2]. The cyst nearly always involves or is associated with the crown of a normal permanent tooth [1,2]. In this case report dentigerous cyst was marsupilised for the surgical exposure of crown of horizontally labially impacted central incisor, followed by a follow up of the patient who is currently undergoing orthodontic treatment.

### Case Description

A 15 years old female patient consulted for missing maxillary central incisor associated with a gap between the upper front teeth. She also had a past dental history of extraction of a deciduous incisor in the same region about one month back. Her preoperative CBCT images revealed a hyperplastic dental follicle associated with horizontal labially impacted right maxillary central incisor below

the nasal floor with well formed roots in the bony socket. The incisal edge was found to be located 3.8 mm above the alveolar crest with the middle and apical third of the root surface contiguous with the nasal floor. The follicular space around the crown of the tooth appeared enlarged with mild buccal cortical expansion. There was no breach in nasopalatine canal. There was a discontinuity towards the alveolar crest. Therefore, CBCT impression was horizontal labially impacted right central incisor with hyperplastic dental follicle. Her presurgical blood investigations were normal, so the surgical exposure of crown of impacted tooth was done and the surrounding soft tissue was removed under local anesthesia. Tissue specimen was sent to the Oral Pathologist for histopathological analysis. The histopathology report showed the presence of cystic cavity lined by squamous epithelium with underlying thin connective tissue wall and was concluded as dentigerous cyst. The patient was instructed to irrigate the cystic space with sterile saline three times a day and advised to maintain hygiene. She was advised orthodontic treatment and regular follow up by the Oral Surgeon. The orthodontic traction was applied by the Orthodontist (Figure 3). Her postoperative follow up pictures are shown in figures.

Preoperative Phase



Figure 1

Preoperative CBCT images

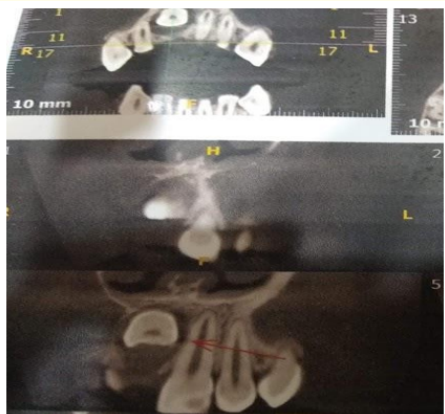


Figure 2



Figure 3

Perioperative Phase



Figure 4



Figure 5



Figure 6



Figure 7

Postoperative Phase



Figure 10: After 6 Months.

Perioperative Phase



Figure 8



Figure 11: One Year Postoperative Picture.



Figure 9: Postoperative Radiograph after 6 months.

Discussion

Dentigerous cysts occur with peak frequency in 2<sup>nd</sup> to 4<sup>th</sup> decades, more frequently in males than in females. However, we report a right permanent maxillary right central incisor, which was impacted in a 15 year old female patient, which is a rare incidence, that is reported to be 1.5% [3] in literature [1-6].

A dentigerous cyst develops after the tooth crown is almost formed, expanding the follicle, enclosing the crown of an unerupted tooth [1]. These cysts are attached to the cemento-enamel junction of the unerupted tooth [1], which is an important diagnostic sign [7], as was seen in our case. The most common sites of these cysts are the mandibular and maxillary third molar and maxillary cuspid areas [3], but in our case the cyst was found to be associated with maxillary anterior tooth.

Preoperative CBCT images revealed a developmental origin [4] dentigerous cyst associated with horizontal-labially impacted right

maxillary central incisor below the nasal floor with well formed roots in the bony socket.

Shear [3] emphasizes on conservative surgical treatment, combined with orthodontics to retain the unerupted tooth and ensure its eruption into normal occlusion. Various treatment modalities are indicated for dentigerous cysts. However, when preservation of the tooth is desirable in a 15 year old patient, then marsupialization is the treatment of choice. In this case surgical exposure of crown of impacted tooth was done and the surrounding soft tissue was sent for histopathological analysis. The histopathology report confirmed the presence of dentigerous cyst. The patient was instructed to irrigate the cystic space with sterile saline three times a day and advised to maintain hygiene. She was advised orthodontic treatment, opinion and regular follow up [6]. After surgical exposure the tooth started to erupt in the oral cavity and a minor orthodontic traction was given by an orthodontist [8] as seen in (Figures 4 and 8). The impacted permanent central incisor became vertical from labially horizontal position in 6 months as seen in (Figures 9 and 11) [8,9]. Hyomoto M., et al. [10] in their study suggested that a period of 100 days was essential to decide whether to extract or to use traction for the eruption of the impacted tooth. They also stated that teeth with incompletely formed roots had a good potential for eruption. However, in this case the root apex appeared closed in the CBCT scan [11] (Figure 3). The tooth erupted successfully [8] and the patient is undergoing orthodontic treatment (figures 9,10,11). Various complications associated with dentigerous cysts include pathological bone fracture, loss of the permanent tooth, bone deformation, and development of squamous cell carcinoma, mucoepidermoid carcinoma and ameloblastoma [2]. So it is important to diagnose it at the earliest to prevent these complications and a long term follow up is required to diagnose recurrence as well.

## Conclusion

It is important to obtain complete history and perform a thorough clinical and radiographic examination of all the unerupted teeth. Biopsy of the removed tissue specimen must be done to correlate clinical and radiological findings. The result of this technique was elimination of the pathology and maintenance of proper dentition.

## Bibliography

1. Boyczuk MP, et al. "Identifying a deciduous dentigerous cyst". *Journal of the American Dental Association* 126 (1995): 643-644.
2. Chakraborty A, et al. "Localized disturbances associated with primary teeth eruption". *Journal of Indian Society of Pedodontics and Preventive Dentistry* 12 (1994): 25-28.
3. Shear M. "Cysts of the Oral Region". 2 nd edition. Bristol: Wright SG (1983): 56-75 479-82.
4. Benn A and Altini M. "Dentigerous cysts of inflammatory origin. A clinicopathologic study". *Oral Surgery, Oral Medicine, Oral Pathology, and Oral Radiology* 81 (1996): 203-209.
5. Dahiwal P, et al. "A rare dentigerous cyst of maxillary central incisor associated with multiple impacted teeth: Case report and review of literature". *Journal of Indian Academy of Oral Medicine and Radiology* 27 (2015): 273-277.
6. Baranwal H C, et al. "Dentigerous cyst associated with an impacted maxillary mesiodens". *European Journal of General Dentistry* 1 (2012): 50-53.
7. Ziccardi VB, et al. "Using fenestration technique to treat a large dentigerous cyst". *Journal of the American Dental Association* 128 (1997): 201-207.
8. Contar CM, et al. "Marsupialization of dentigerous cyst: report of a case". *Journal of Oral and Maxillofacial Surgery* 14.1 (2015): 4-6.
9. Kirtaniya B C, et al. "Marsupialization: A conservative approach for treating dentigerous cyst in children in the mixed dentition". *Journal of Indian Society of Pedodontics and Preventive Dentistry* 28 (2010): 203-208.
10. M Hyomoto, et al. "Clinical conditions for eruption of maxillary canines and mandibular premolars associated with dentigerous cysts". *American Journal of Orthodontics and Dentofacial Orthopedics* 124.5 (2003): 515-520.
11. Omami M, et al. "Cone-beam computed tomography exploration and surgical management of palatal, inverted, and impacted mesiodens". *Contemporary Clinical Dentistry* 6.S2 (2015): 289-293.

**Volume 3 Issue 11 November 2019**

**© All rights are reserved by Paramjot Kaur, et al.**