

## Replantation of an Immature Permanent Tooth after Cyst Enucleation: Two Years Follow -Up

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### Case Report

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#### Article History

Received: 30.07.2018

Accepted: 07.08.2018

Published: 30.08.2018

#### DOI:

10.21276/sjodr.2018.3.8.4



**Abstract:** Dentigerous cysts are the most common bony lesions of the jaws in children. It is one of the most prevalent types of odontogenic cysts associated with an erupted or developing tooth. This paper describes a case in which a conservative enucleation surgery of dentigerous cyst is made to save unerupted permanent tooth. Seen the great capacity to regenerate the bony structures at the children, conservative surgery should be tempted in dentigerous cysts in report with open apices teeth.

**Keywords:** Dentigerous cysts, immature tooth, enucleation, conservative surgery.

### INTRODUCTION

Dentigerous simply means containing teeth. It develops around the crown of impacted, embedded or unerupted teeth by expansion of follicle when fluid collects or a space occurs between the reduced enamel epithelium and the enamel of an impacted tooth [1-4]. The tooth is often displaced into ectopic positions [2, 3, 5].

Dentigerous cyst is the second most common of the developmental odontogenic cysts of the jaw and accounts for approximately 20-24 % of all epithelium-lined jaw cysts [5].

The teeth most often involved are mandibular third molars, maxillary canines, and mandibular premolars [5].

A dentigerous cyst is seen as a well-defined radiolucent lesion of alveolar bone in preadolescents and inhibits the eruption of the involved permanent tooth [4].

The pathogenesis of these cysts is unknown. In rare cases the dentigerous cyst develops as a result of the intrafollicular spread of periapical inflammation [6].

The standard treatment for a dentigerous cyst is enucleation and extraction of the cyst-associated impacted or unerupted tooth to prevent recurrence of the cyst.

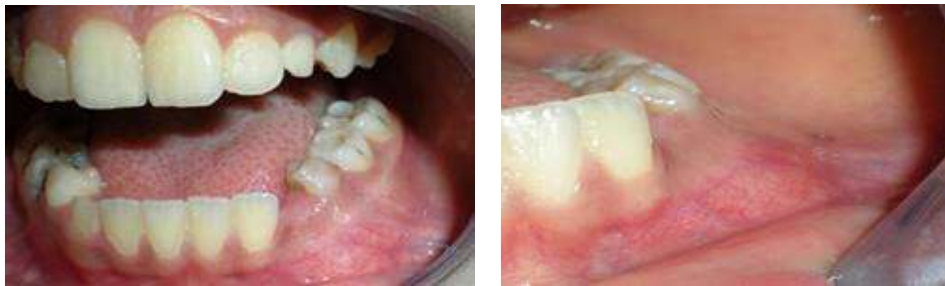
Marsupialization is another advisable conservative treatment to preserve the cyst-associated tooth and promote its eruption [4, 5, 7].

### CASE REPORT

A 9 year-old girl reported to the department of Pediatric and Preventive Dentistry, Dental Faculty of Medicine of Monastir with complaint of a swelling of two months' duration on the left side of the mandible.

On general examination, the patient was apparently healthy and there is no significant past medical history.

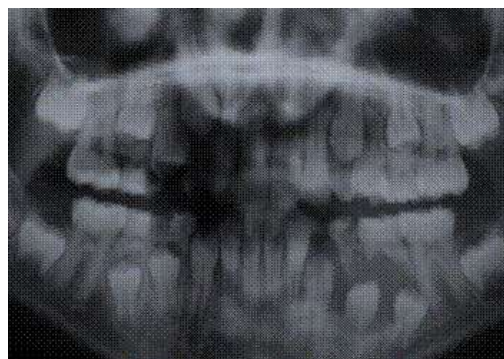
Intraoral examination revealed expansion of the alveolus around the primary molars (tooth no.74 and 75), the swelling was well defined, firm in consistency, painless on palpation (Fig-1A δ B).



**Fig-1A & 1B: Intraoral examination: expansion of the alveolus around the primary molars (tooth no.74 and 75)**

Radiographic examination on the left lower back region showed large, circular, well defined, and

unilocular Radiolucent lesion surrounding the crown of the mandibular left first premolar (Fig-2A).



**Fig-2 A: Large, circular, well-defined, and unilocular Radiolucent lesion surrounding the crown of the mandibular left first premolar**

The second left premolar is displaced into ectopic position. The roots of primary molars were

resorbed and tooth structure was completely mutilated (Fig-2B).



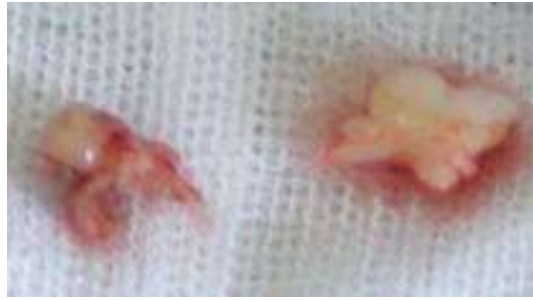
**Fig-2 B: The second left premolar is displaced into ectopic position. The roots of primary molars were resorbed and tooth structure was completely mutilated**

The most likely diagnosis were: dentigerous cyst related to the first left premolar or a periapical cyst related to the first primary left molar (tooth n° 74). Surgical enucleation of the cyst was chosen as the treatment of choice.

The treatment consisted of raising the flap and extraction of the two primary left molars with total enucleation of the dentigerous cyst (Fig-3A & B).



**Fig-3A: The flap is raised**



**Fig-3B: Extraction of the two primary left molars**

The surgery was done using local anesthesia (inferior alveolar, long buccal and lingual nerve block) and under antibiotic cover. The cyst was attached to the cemento-enamel junction of the first left premolar.

The cyst membrane was carefully dissected from its neck with a bistoury, after that the tooth was replanted approximately at the place where it was found. Here was a good spot that was bleeding freely, which helps a tooth bud to become revascularized (Fig-4 A & B).



**Fig-4A: Enucleation of the dentigerous cyst**



**Fig-4B: The cyst membrane was carefully dissected from its neck with a bistoury**



**Fig-5: Homeostasis**

The cavity was packed with gauze of oxidized cellulose to achieve homeostasis (Fig-5).

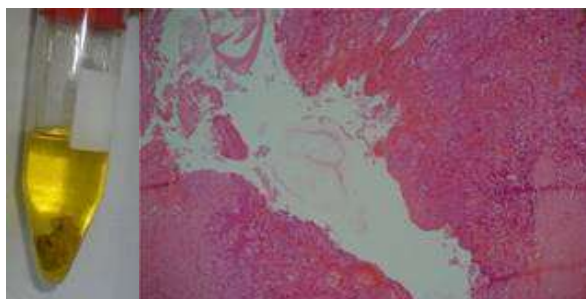


**Fig-6: Sutures**

Sutures were realized and were removed after ten days (Fig-6).

Histological examination showed a thin fibrous cyst no keratinized stratified squamous epithelium with islands of odontogenic epithelium.

The connective tissue showed a slight inflammatory cell infiltrate, which confirmed the diagnosis of dentigerous cyst (Fig-7).



**Fig-7: Histological examination**

The patient was asked to report back after one month for further clinical and radiographic follow up,

bone neoformation was observed in the same region (Fig 8).



**Fig-8: Bone neoformation was observed**

The replanted first left premolar could be seen developing and making an attempt to erupt, a space

maintainer made to provide the space for the eruption of left second premolar (Fig-9).



**Fig-9: The replanted first left premolar could be seen developing and making an attempt to erupt, a space maintainer made to provide the space for the eruption of left second premolar**



After six months follow up the eruption of first and second left premolars was clinically and

radiographically achieved into its proper position (Fig-10: A & B).



**Fig-10 A & B: Six months later, the eruption of first and second left premolars was clinically and radiographically achieved into its proper position**

Test vitality and percussion are normals. Root development in the replanted first premolar seems to be continued and there is no mobility.

Two years later, the replanted first premolar was in proper occlusion, test vitality and percussion were normals. Root development was radiographically achieved.



**Fig-11: Two years later, the replanted first premolar was in occlusion**



**Fig-12: The root development is radiographically achieved**

## DISCUSSION

Treatment of dentigerous cyst depends on size, location, and disfigurement and often requires variable bone removal to ensure total removal of the cyst, especially in cases of large ones [1, 8, 9].

The nature of the causative tooth influences the type of surgical treatment required for the dentigerous cyst. If the cyst is associated with supernumerary or wisdom tooth complete enucleation of the cyst along with extraction of the tooth may be the first treatment choice [10, 11].

The treatment of dentigerous cyst involving the pre-erupted permanent tooth has long been

discussed. In the past, teeth found unerupted in or adjacent to dentigerous cyst were sacrificed.

However, preservation of teeth is desirable especially in young patients when the lesion is isolated, marsupialization is the treatment of choice [12, 2].

This case illustrates the conservative surgical treatment for dentigerous cyst in a young patient in the mixed dentition where replantation of unerupted permanent tooth is tempted.

In fact, children have a much greater capacity to regenerate the bony structures than adults, and teeth with open apices have a greater eruptive potential.

This modality of treatment saves a tooth in occlusion and prevents a young patient from psychological and mental trauma because of the loss of tooth [13, 14].

### CONCLUSION

This case report adds a new case of a conservative enucleation surgery of dentigerous cyst. In this case a successful replantation of unerupted tooth involved in the cyst cavity is made.

It's a new modality of treatment other than marsupialization and enucleation with extraction in dentigerous cysts.

Pediatric dentists should be conservative when it's a question of an immature unerupted tooth with open apice so replantation after enucleation should be tempted.

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