

CASE REPORT

A Crescent-shaped Radiopacity impeding Molar Tooth Eruption

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ABSTRACT

Aim: This article aimed to report the case of a complex odontoma interfering with tooth eruption.

Background: A common local factor causing tooth impaction or interfering with eruption of teeth is odontoma.

Case report: This case report represented a case of complex odontoma in a girl child overlying the crown of first permanent molar, which involved dental follicle and seemed to be interfering with tooth eruption. Surgical removal was done and follow-up was scheduled to control tooth eruption.

Conclusion: Odontoma as a local factor potentially interfering with tooth eruption can be resolved if it is detected early.

Clinical significance: A routine radiographic survey with panoramic images in mixed dentition period and clinical oral examination would be useful to early detection of tooth eruption problems.

Keywords: Dental follicle, Odontoma, Surgically removal.

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INTRODUCTION

Odontoma is the most common odontogenic tumor of the jaws.¹ The frequency of odontoma varies among different population groups. It occurs among the Caucasian population with a frequency of 65%.² It is considered a hamartomatous benign lesion composed of enamel,

dentin, cementum, and pulp tissues. Although several factors including local trauma, infection, genetic mutation, and inheritance are suggested as the etiologic factors of complex odontoma, the cause of lesion is not clearly understood.³

An odontoma may represent one of two histological types named compound or complex odontoma.⁴ A compound odontoma comprises numerous small teeth and is usually found in the anterior region of maxilla in the first or second decade of life.⁴ A complex odontoma represents an amorphous calcifying mass encapsulated in a fibrous lining. It is diagnosed more commonly in the posterior region of the mandible.⁴

The main complication of odontoma is the impaction or interference with the eruption of permanent or rarely deciduous teeth.^{1,4} This lesion is discovered in routine radiographic examination.⁵ An odontoma appears as a calcified radiopaque mass or tooth-like structure with a radiolucent rim in radiographic view.⁵ This lesion was managed by simple enucleation, and no recurrence was reported up to 15 years.⁴ Unerupted teeth associated with odontoma tended to erupt following the enucleation.⁴

CASE REPORT

A 5-year-old Iranian female child visited a private pediatric dentistry office with a chief complaint of tooth decay. In medical history, no systemic disorder was reported and familial history revealed no special point. Also, history of trauma was denied. Clinical examination revealed no extraoral abnormality. Temporomandibular joints were intact and the jaw movement was normal. No sign of lymphadenopathy was detected in physical examination. Intraorally, the soft tissue appears normal. Primary dentition was completed, but carious lesions were detected on several deciduous teeth, which were considered for pulp therapy. Also, her maxillary primary first molars were previously treated. Posteroanterior panoramic and periapical radiographs were ordered.

Like periapical view, the panoramic radiograph revealed a crescent-shaped radiopaque lesion with a well-defined border surrounded by a radiolucent rim overlying the occlusal surface of the unerupted left mandibular first molar (Fig. 1). The same stage of tooth development according to de Mirjian was seen in four first molars, but the level of eruption of the left mandibular first molar

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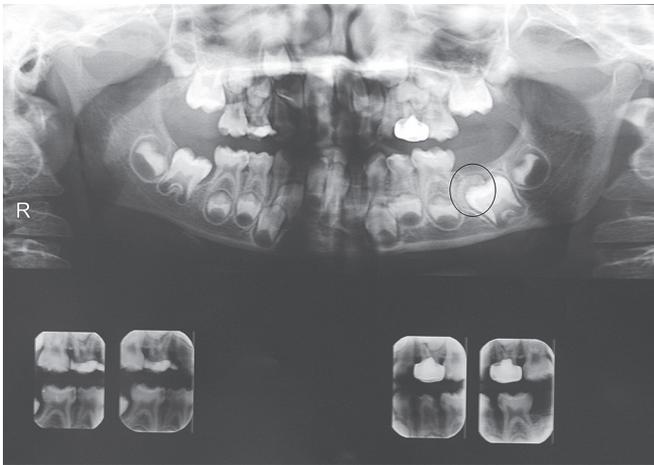


Fig. 1: Panoramic view of lesion

was lower than the others. The differential diagnosis was considered odontoma, ameloblastic fibro-odontoma, and calcifying odontogenic cyst.

Professional consultation was done with a maxillofacial surgeon to make a decision on surgical removal of the lesion, considering probably iatrogenic damage to dental follicle.

Prior to the surgery, cone-beam computed tomography (CBCT) was ordered to determine the exact location of lesion (Fig. 2).

The lesion was approached surgically through a conventional triangular mucoperiosteal flap. An appropriate amount of the crestal bone extending to the buccal cortical plate was removed using surgical bur to gain adequate access to the site. The surgeon intended to divide the mass into sections to avoid hurting the adjacent structure. Finally, after copious irrigation, the flap was repositioned and sutured in place using 4-0 resorbable stitches.

The mass was sent to the Department of Oral and Maxillofacial Pathology for histological investigation. Microscopically, a mature tubular dentinal structure with the pits and fissures containing a fine enamel

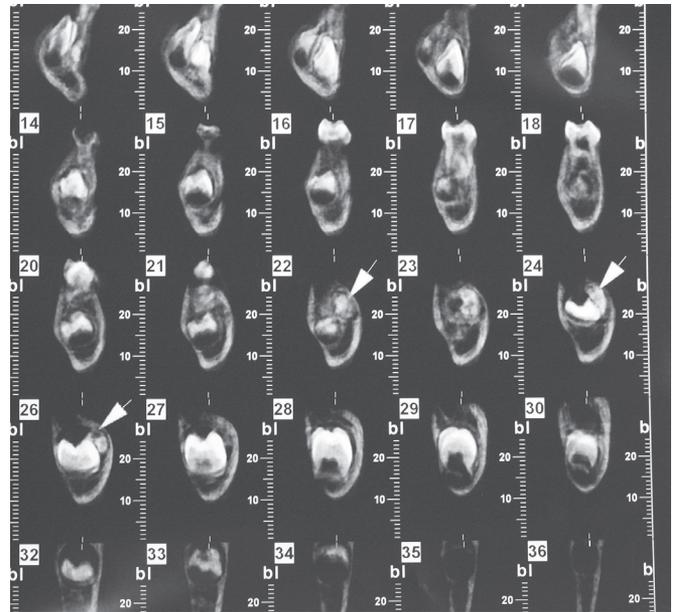


Fig. 2: Cone-beam computed tomography view of lesion

matrix was observed. In some of the areas, a thin layer of cementum surrounding the mass was detected too. The final diagnosis was complex odontoma. The histological view of the lesion is illustrated in Figure 3.

The follow-up period was planned until the eruption of the first molar. Seven months after surgical procedure, in a periapical radiograph, the root development was seen to be continued and the tooth crown was nearer to the alveolar crest. Figure 4 shows the follow-up periapical radiograph.

DISCUSSION

In the present case, odontoma occurred in a 5-year-old girl, but it is reported that males are affected by the complex odontoma more than females. The mentioned case of complex odontoma tended to be physically and biologically interfering with eruption of the permanent first molar. The lesion involved the dental follicle, which



Fig. 3: Histological view of lesion

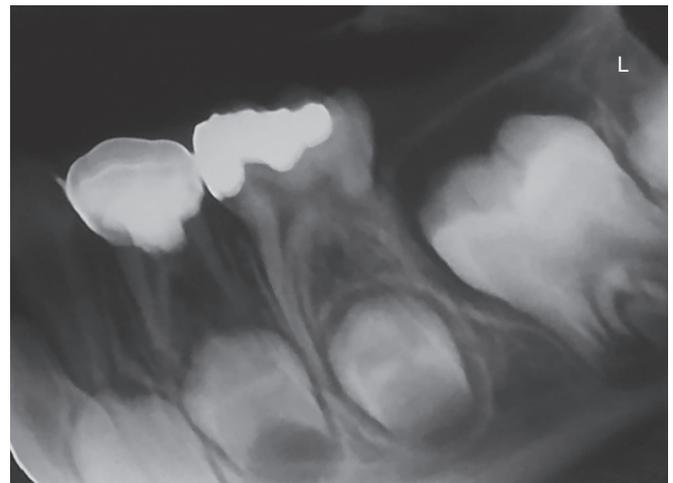


Fig. 4: Follow-up periapical view of lesion

is a challenge to remove it, since intact dental follicle was shown to be required for tooth eruption.⁶ Making a decision on surgical removal of the lesion was critical and required professional consultation. Dentists should be alert of the proper time and sequence of tooth eruption and should prescribe an appropriate radiograph for further examination.

The radiographic manifestation of complex odontoma varied from the unilocular radiolucency to the well-defined radiopacity surrounded by a narrow radiolucent rim, based on the development stage and degree of calcification.⁴

Radiographic appearance of odontoma is similar to ameloblastic fibro-odontoma and calcifying odontogenic cyst. No gender predilection was seen for the incidence of these lesions. The first and second decades of life are the common age involved with them. Ameloblastic fibro-odontoma is usually found in the posterior region of mandible, while calcifying odontogenic cyst frequently occurs in the anterior region of maxilla. Histological findings help dentists to distinguish the above lesions.¹

CONCLUSION

Dentists should be alert of the time and sequence of tooth eruption and should prescribe an appropriate

radiograph for further examination when dealing with the delayed eruption. Sometimes, odontoma interferes with tooth eruption. Making a decision on surgical removal of odontoma in proper time was critical and required professional consultation.

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