Impacted Maxillary Permanent Central Incisor Associated with Compound Odontoma: A Case Report

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Odontomas are the most common odontogenic tumor and usually asymptomatic. Odontogenic tumors comprise an unusual group of lesions of the jaws, derived from primordial tooth-forming tissues and presenting in a large number of histologic patterns. Some of these lesions, particularly the odontomas are now interpreted as developmental malformations or hamartomatous lesions rather than true neoplasms. Odontomas are classified as either compound odontoma (resembling normal teeth) and complex odontoma (amorphous calcified masses). Etiology odontoma has not known, may be because of infection or traumatic injury in that place. Clinical and radiographic examination were needed for accurate diagnosis. In general, odontogenic tumors tend to be more common in younger patients but can occur at any age. This case report was about a child 12 years old who came to the clinic Pediatric Dentistry, faculty of Dentistry, Indonesia University with complain about the left maxillary central incisor tooth wasn’t eruption, The treatment of odontogenic tumors was surgical treatment with local anesthesia.

Keywords: unerupted permanent tooth, anterior tooth of maxilla, odontoma

Introduction

The most commonly encountered odontogenic tumors are odontomas. These tumors account for 22% of all odontogenic tumors of the jaws (1). The term odontoma is used for describing the growth in which functional ameloblasts and odontoblasts forming the enamel and dentin, or in other words both the epithelial and mesenchymal cells co-differentiate simultaneously (2).

The etiology of odontoma has not been fully explained. It has been proposed that local traumas or infections may cause odontomas. Odontomas are commonly encountered in the first and second decades of life, and are accepted as developmental anomalies (hamartomas) rather than true neoplasms. They consist particularly of enamel, dentin, cement and occasionally pulpa tissue. Odontomas are generally asymptomatic, and are detected accidentally during routine radiographic examinations. These tumors are classified into complex odontomas and compound odontomas depending on their radiographic and microscopic characteristics. Both odontomas are found in the bone tissue. However, in very rare cases, they can extend into the oral cavity (1-8).

In radiographic examinations, odontomas appear as dense radio-opaque lesions with prominent external margins surrounded by a thin radiolucent zone. Compound odontomas are in forms of clusters of tooth-like structures of different sizes and volumes that are surrounded by a narrow radiolucent zone, while complex odontomas display irregular and disorganized radio-opacity. Odontomas are frequently accompanied by a yet non-erupted tooth, and prevent tooth eruption. Some small odontomas are found within the roots of an erupted tooth. These do not prevent tooth eruption (1,2,5,8,9).

Microscopically compound odontomas are formed by multiple structures resembling teeth with single roots that comprise loose fibrous matrices. The mature enamel coat disappears during the decalcification procedure for preparation of micro-
scopic slides, however, enamel matrices are frequently found in varying amounts. Pulpa may frequently be observed in the crown and root zones of the tooth-like structures. The complex odontomas predominantly include mature tubular dentin and are composed of randomly assembled dentin, enamel, enamel matrix, cement and pulpa tissues. In about 20% of the odontomas, small islets of eosinophilic-staining epithelial ghost cells are present. Thus it is very important for paediatric dentists to understand the clinical features of odontoma in children (5).

Case Report

In the clinic Pediatric Dentistry came a child 12 years-old girl patient admitted to our clinic with the complaint of the left maxillary central incisor tooth was absent, painless with gingival swelling and normal mucosa were found between the maxillary central incisors. The left maxillary lateral incisor and the left canine teeth were still deciduous.

Radiographic view: The radiographic examination of the tooth patient, a radio-opaque mass surrounded by a radiolucent zone was found in the region of left central maxillary incisor, preventing the eruption of the left central incisor tooth and left canine (Figure 1).

After a multidisciplinary team study of a pedodontist and oral surgeon was planned. Without any premedication surgery was done with local anaesthesia. Small tooth like calcified pieces were excavated from the lesion region (Figure 2).

After surgery the surgeon found compound type odontoma containing enamel and dentine was reported in the pathology results. There were 8 small teeth, the mass was concluded to be a compound odontoma. Which that condition was not visible in radiographed (Figure 3, 4).

For the guidance of eruption patient was taken into a routine appointment schedule. During the follow-up of the patient in 1 year 8 months intervals, the direction of eruption of the embedded tooth was observed and orthodontic treatment is planned, if needed (Figure 5).
Discussion

In the management of eruption disturbances in the primary dentition early recognition and diagnosis as well as proper step of treatment and careful following up are very important. An impacted tooth is one in which eruption into a normal functional position is obstructed by some physical barrier. Impaction of the primary teeth is uncommon. Factors contributing to impaction include developmental anomalies such as malposition, dilaceration, ankylosis, tumors, odontoma, dentigerous cysts, presence of supernumerary teeth and systemic-genetic interrelation such as cleidocranial dysostosis and hypopituitarism. Impaction of an anterior primary tooth is very rare. When it occurs it is most often associated with the presence of a supernumerary tooth or odontoma (10,11).

However, there have been many studies in which odontomas caused various disturbances to tooth eruption. Many times, odontoma may cause disturbances in the eruption of teeth such as impaction, delayed eruption or retention of primary teeth (10-12).

The most frequent cause of discovery of an odontoma is impaction of the permanent teeth with or without persistence of the primary teeth or, less frequently, symptomless swelling or accidental radiographic finding. Thus it is very important for paediatric dentists to understand the clinical features of odontoma in children (6).

Many studies have reported that odontoma occurs most frequently during the first two decades of life. Katz reported that odontomas were most commonly removed from the 11-15 year-old age group. It reported that 50% were in the first decade of life in 39 cases. In the present study, the case was 12 year-old (6,13,14).

Odontomas are usually asymptomatic and there are two types of odontoma. Both types of odontomas are located within the bone tissue. Compound odontoma is encountered about 2 folds more frequently than complex odontoma, and most frequently between the maxillary incisor and canine teeth, while the complex odontoma is most commonly found in the mandibular molar regions. In our case of compound odontoma, the location was in the region of maxillary incisors. This was in accordance with literature. Although compound odontoma is distributed equally among sexes, complex odontoma is more frequently found in women. The patient in our case was female 12 years old. In 70% of the odontomas, pathologic alterations are observed in the neighboring teeth such as devitalization, malformation, aplasia, malposition and remaining embedded. In our case, the left central maxillary tooth is neighboring the odontoma, while the permanent central incisor was embedded (5,9,15).

The treatment advocated for odontomas in both primary and permanent dentition is their surgical removal and there is little probability of recurrence. Ameloblastic fibroodontomas and Odontoameloblastomas show a great resemblance to common odontomas, especially in the radiographic examination. Therefore, it has been suggested that all specimens should be sent to an oral pathologist for microscopic examination.

Conclusion

The result of pathology reports indicated that this present case is compound odontoma.

References