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Totally submerged deciduous maxillary molar

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Abstract

The total reimpaction of deciduous teeth is becoming more and more common, even though few cases have been reported in the literature. The condition most often affects the mandibular second deciduous molar and the maxillary first deciduous molar least often. A case of totally submerged maxillary deciduous molar in a 11 year old girl is described.

Key words: reimpacted tooth, teeth eruption, reimpaction, submersion

Introduction

Submersion of a tooth takes place when a previously normally erupted tooth becomes embedded back into the soft tissues and eventually the bone, so that it takes the infraposition. A tooth is considered reimpacted, when its marginal ridges are more than 0,5 mm below the marginal ridges of the adjacent teeth. Tooth impaction is seen relatively common in the permanent dentition with the most frequently involved teeth being the third molars and canines (1,2). The impaction in the primary dentition may be divided as primary or secondary. In case of a primary submersion, the tooth has never erupted, and in secondary, the previously erupted tooth submerged with time. Impaction of primary teeth, particularly primary impaction, is considered a rare event but when it does occur, the first and second primary molars are usually affected (3).

The etiology of such impaction is still unknown, with many causes being pointed out, such as defects in the periodontal membrane, ankylosis, malposition of the tooth bud, trauma and lack of space for eruption due to precocious eruption of the first permanent molar, agenesis of the successor tooth and inheritance (4).

In this case report, we presented a case of a totally impacted primary second maxillary molar and a complication in the form of resulting oro-antral communication.

Case report

The 11 year-old patient, with detected autism, was referred to the Oral Surgery Department of the Medical University of Lodz by her orthodontist, for a consultation of a deeply submerged right second primary molar 55. The patient was symptom-free. On intraoral examination, the absence of the maxillary right second premolar was noted (Fig.1). Apart from the missing tooth, she had full permanent dentition. No abnormal signs in gingiva, buccal tissue and alveolar bone of the right side of maxilla were observed. Panoramic radiograph revealed that maxillary right second primary molar was impacted and the maxillary permanent second premolar was also impacted and moved out of its usual position due to the presence of the submerged tooth (Fig.2). The impacted permanent tooth had well-developed crown and two thirds of the developed roots with no sign of resorption. The impacted deciduous molar was embedded within bone close to the inferior wall of the maxillary sinus (Fig.3).

The family's medical history was noncontributory and patient's mother negated the occurrence of any disturbances in teeth eruption in the family. Due to the fact that the impacted deciduous tooth was an obstacle to the orthodontic tooth movement, the decision has been made to extract the tooth 55, and to leave the impacted permanent tooth for future orthodontic treatment.

The mother has been presented with the treatment plan, and after obtaining written consent the surgery has been scheduled. After surgical and anaesthesiology consultation, because of the size and severity of the surgery and the condition of the patient, she was qualified for the surgery in general anaesthesia, as a part of the 1-day surgery procedures. Surgical removal of the impacted tooth was carried out under general anesthesia. During surgery it occurred that the impacted deciduous tooth was ankylosed and subsequently carefully removed (Fig.4). However, during the procedure a communication with the maxillary sinus was noticed. The wound was sutured and the surgical procedure was completed. There were no complications following surgery. The patient was discharged home under mother's guidance.
During the follow up visit the next day the patient reported slight pain and oedema was observed, apart from that the healing was uneventful. After 6 weeks from the surgery the patient was referred for further orthodontic treatment.

Discussion

Submergence of the deciduous teeth is a rare phenomenon, usually caused by disturbances during the process of eruption. Submerged teeth consist of various types from mild to severe and may involve from one to several teeth (5). Depending on the degree of submergence, the occlusion and position of the tooth germ may be affected, which happened in our case.
In the article we presented a rare case of total impaction of the primary molar and transposition of the succeeding permanent premolar. The etiology of this condition is still unknown. Suggested factors possibly involved in submersion of deciduous teeth are anklyosis, congenitally missing permanent teeth, defects in the periodontal membrane, trauma, injury of the periodontal ligament, precocious eruption of the first permanent molar, defective eruptive force, or a combination of these factors.
However, recent histological and SEM studies of the root surfaces of extracted primary teeth have shown most of these teeth to be anklyosed, which corresponds to our finding.
It is difficult to know for sure whether eruption failure of the primary tooth impair the development of its successor. There are cases in which impacted primary molars erupt normally with reasonably well-developed successors, or even, permanent successor having a position occlusal to the unerupted primary tooth. However most described cases show that the presence of submerged premolar drastically impacts the position, and sometimes the shape of its successor (6,7). In a study describing reimpaction of 14 primary molars, these submerged teeth caused the failure of development and eruption of corresponding premolars (8).

Total bony impaction of the primary molars is rarely encountered. During the eruption process, through bone resorption and apposition, the tooth buds ascent towards the alveolar crest. In our case, deep impaction and transposition of the primary molar towards the maxillary sinus could be explained by the fact that while the primary molar failed to ascent, alveolar bone carried upwards with the erupting permanent teeth on either side and carried towards the space allocated for the permanent second premolar by mesial drifting of the permanent first molar and distal drifting of the premolar (9).

Reimpaction of premolar teeth is associated with many complications. Submerged teeth have a high potential to cause malocclusion by inclination of proximal teeth or extrusion of antagonistic teeth. The incidence of the abscess or fistula as a result of tooth decay, and the pressure on the alveolar inferior nerve is often observed, which does not correspond with our case report.

The knowledge of the clinical and radiological image of reimpaction allows for early detection, which in turn prevents subsequent complications.

Conclusion

Proper observation of the unerupted teeth is very important in patients with impacted teeth. Any absence of permanent or deciduous teeth, which have not been previously extracted, should be noted.

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Fig. 1. Intraoral appearance of the right molar region.

Fig. 2. Panoramic radiograph showing a totally impacted deciduous maxillary right molar and impacted maxillary second premolar.

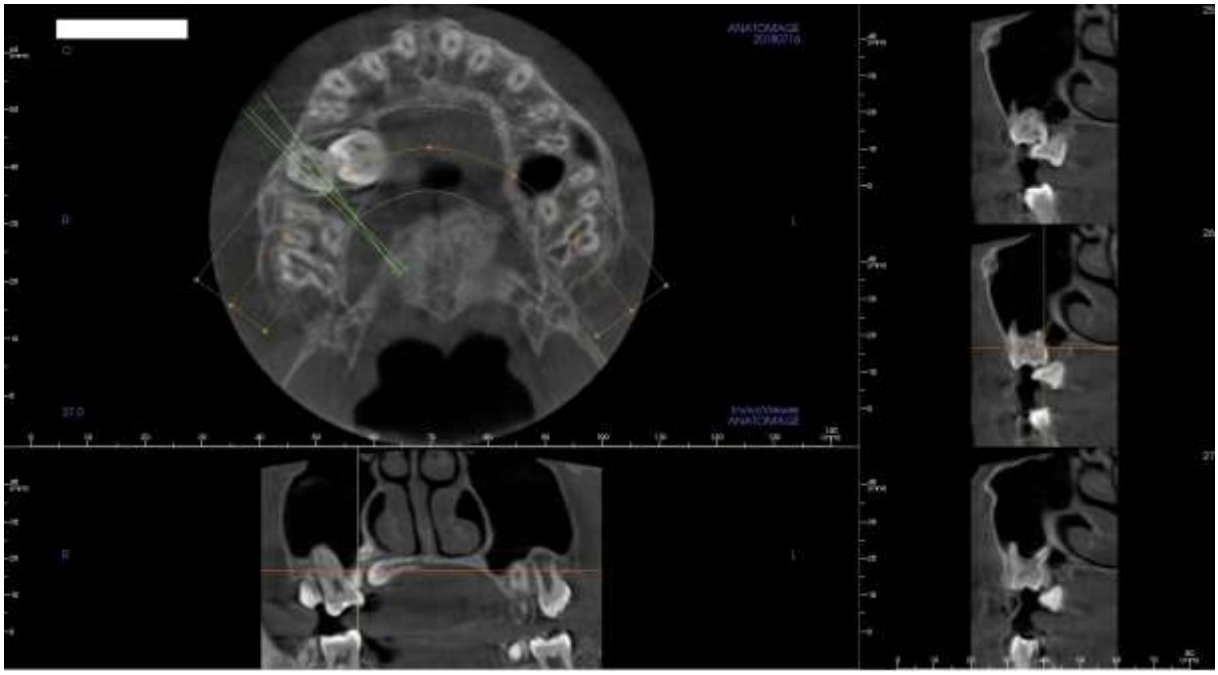

Fig. 3. CT of the maxilla.

Fig. 4. The deciduous submerged molar after extraction.