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CASE STUDY

IMPACTION OF MAXILLARY FIRST PRIMARY MOLAR- A RARE CASE REPORT

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ABSTRACT

Tooth impaction is defined as any tooth that fails to erupt into a normal functional position and remains unerupted beyond the time at which it should normally erupt. Reports of impaction and eruption failure in primary teeth are relatively rare compared to permanent teeth. Several factors contribute to the impaction of a deciduous tooth. Impacted primary teeth may be associated with defects in development and eruption of their permanent successors, long-term observation is therefore necessary until the permanent successors erupt. This report describes the diagnosis and treatment of a 8-year-old boy who presented with an impacted maxillary first primary molar.

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INTRODUCTION

Tooth eruption has been described as the movement of a tooth from its normal position within the alveolar process towards its functional position in the oral cavity (Lautenschläger *et al*., 2007). This process is accompanied by multiple tissue changes, such as resorption and apposition of the alveolar bone and development of the root and periodontium (Rasmussen *et al*., 1997). In some instances, anomalies in these physiological phenomena can cause impacted teeth. The impaction may be primary, meaning that the tooth has never erupted, or it may be secondary, meaning that the tooth was reimpacted after eruption (Memarpour *et al*., 2012). Local factors contributing to impacted primary teeth include odontomas, ankylosis, congenitally missing permanent teeth, defects in the periodontal membrane, trauma, injuries of the periodontal ligament, precocious eruption of the first permanent molar, defective eruptive force or a combination of these factors (Antoniades *et al*., 2002). Ankylosis probably playes a leading role in the etiopathogenesis of impaction (Bianchi, 1991). However, in some cases the etiology of tooth impaction is unknown or may have a genetic basis (Memarpour *et al*., 2012).

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Recent studies have suggested that arrested eruption may relate to local disturbances in the periodontal membrane of the RANK-PANKLOPG system (Kjaer, 2008). Although the incidence of impaction of primary teeth is considered to be rare (Bianchi *et al*., 1991), unerupted and impacted premolars are a common finding in children (Murray, 2003). Among all primary teeth the mandibular second primary molar has the highest incidence of semi-eruption or ankylosis (Walker, 2004). Unerupted primary molars may cause problems in the dental arch such as space loss, tipping of adjacent teeth, supra eruption of the antagonist and failure of eruption of the permanent teeth underlying the primary teeth (Memarpour *et al*., 2012; Antoniades *et al*., 2012 and Kjaer *et al*., 2008). Total impaction is considered a very rare phenomenon with very few cases presented in the literature (Antoniades *et al*., 2002 and Borsatto *et al*., 1999). Primary failure of eruption is diagnosed when the unerupted tooth is covered by an intact mucosa and radiographs reveal the tooth to be deeply buried in the jaw bone (Winter *et al*., 1997). Among primary tooth impaction cases, second primary molars are most frequently affected, followed by primary central incisors (Noda, 2006 and Otsuka, 2001). Since impaction of a primary tooth with displacement of the succedaneous permanent tooth might disturb the growth of the permanent dental arch, detection and treatment of impacted primary teeth are essential. The purpose of this report to present a case of impacted primary first molar in an eight year old child.

Case Report

A eight year old boy was referred to dental hospital with chief complaint of swelling in upper right region of jaws. The history suggested intermittent pain with associated swelling. No symptoms of syndrome were evident and also his history did not reveal dental trauma or any infection. There was evidence of intra oral soft tissue swelling over the right side of maxilla at region of missing tooth no.54. Intra-oral examination showed normal development except confirmed absence of maxillary right first primary molar. According to Moorrees *et al*.'s (Moorrees, 1963), classification of tooth formation, the degree of formation of the first premolar was approximately Ri (initial root formation stage) at age of eight years and 2 months. A panoramic radiograph revealed developed unerupted tooth; namely, maxillary right first primary molar (Fig. 1). To know the exact position of the premolar and its association with adjacent important structures a CBCT scan was advised.

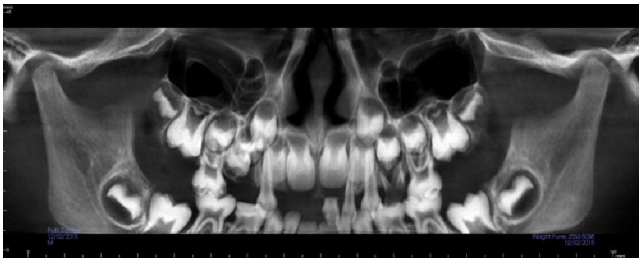
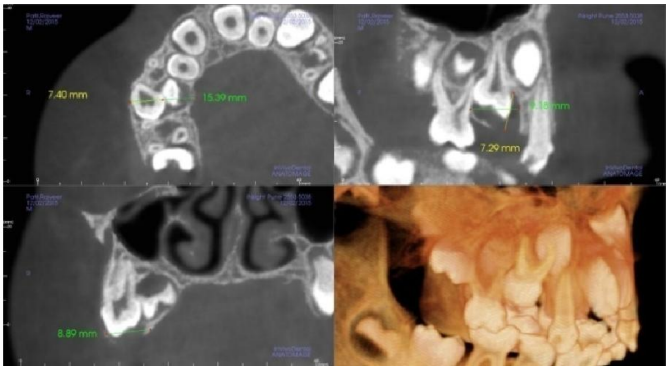


Figure 1. Initial panoramic radiograph

CBCT scan of the same area showed completely developed tooth no 54 and palatally positioned 14. The respective follicles of unerupted teeth were separate (Fig. 2). Based on this information surgical extraction of un-erupted primary first molar was planned to facilitate the eruption of first premolar.



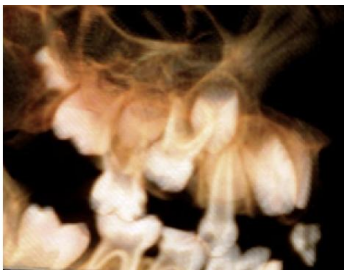


Figure 2. Cone beam computed tomography scan showing completely developed first maxillary deciduous molar and palatally positioned first premolar of right side

A mucoperiosteal flap was raised and surgical extraction of impacted primary first molar with ennucleation of adjacent soft tissue was carried out. The histopathology of the excised mass suggested follicular cyst associated with impacted first maxillary deciduous molar of right

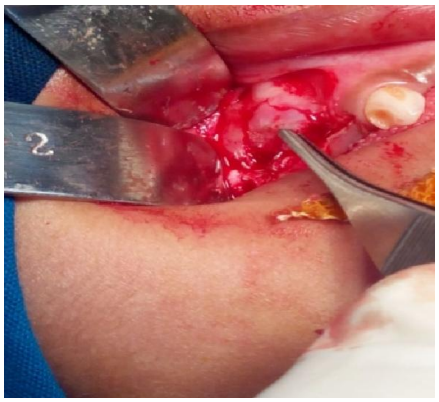


Fig. 3(a).

Fig. 3(b).

Fig. 3(c).

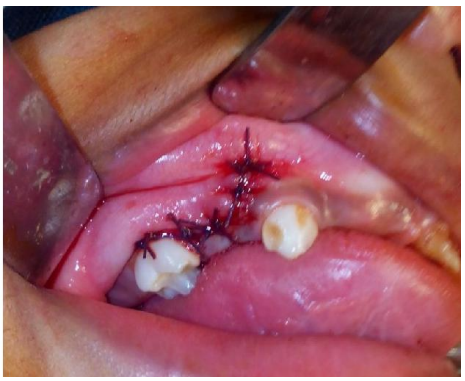


Fig. 3(d).

Figure 3. Surgical extraction of impacted primary first molar. (a) and (b) incision made and mucoperiosteal flap raised. (c) & (d) surgical extraction done and sutures placed

DISCUSSION

Severe infra-occlusion of deciduous molars has been observed relatively infrequently in children affecting only 2.5%-8.3% (Borsatto, 1999). Furthermore, cases of impacted primary molars positioned inferior to the succeeding premolars have been reported as single cases only (Borsatto, 1999). The abnormal position of the second premolar is due to early ankylosis of the second primary molar. Embryological studies have revealed that the tooth buds of permanent premolars develop in the palatine region of the upper arch and in the lingual region of the lower arch in relation to the enamel organ of the primary teeth. Under normal conditions, the permanent tooth bud is located near the occlusal surface of the primary molar. Then it changes its position shifting toward the root of the primary molar (Kjaer *et al*., 2008). In the present case the permanent first premolar may have developed in a superior and more lateral position with respected crown of the impacted primary maxillary first molar. Kjaer *et al*. (2008) estimated that this arrest in eruption occurs before the age of 3 years when the permanent tooth bud in the initial stage is located laterally to the arrested primary molar. Other researchers suggested that non eruption of primary molars could result from abnormal development of the primary molar germ or malposition of the premolar angle before 1 year of age (Järvinen, 1994).

It is to be expected that an ankylosed unerupted primary tooth will become more deeply covered by the alveolar bone during growth (Amir *et al*., 1982). Although extraction of infraoccluded primary molars should be avoided, because resorption and exfoliation will most often occur within the normal time frame, extraction of an unerupted primary molar is recommended .This is to permit normal eruption of the tooth, to prevent the unerupted tooth from interfering with the development of the premolar and to avoid the risk of cyst formation (Amir, 1982). Treatment options for an impacted premolar include extraction of the primary tooth and patient follow-up without treatment, but with supervision of the eruption process (Frank *et al*., 2000). Other treatment strategies are surgical exposure or surgical repositioning with or without orthodontic traction and surgical removal of the erupted premolar (Pindborg *et al*., 1970). The etiology of tooth impaction includes systemic and local factors such as dental germ abnormality, eruption cyst, odontoma, tooth displacement, ankylosis, gingival hyperplasia, and eruption space deficiency (Pindborg, 1970). In the present cases, there were no relevant considerations in the family or medical history and the contralateral primary molars erupted normally, and therefore systemic etiological factors can be ruled out.

Conclusion

Impaction and eruption failure of primary teeth might be associated with a disturbance of the permanent successors. It is important that pediatric dentists detect the impaction of primary molars during primary dentition to prevent disturbing the complete and sound eruption of permanent dentition and avoid treatment complications. Furthermore a long term observation is necessary until the permanent successors erupt.

REFERENCES

Amir, E., Duperon, D.F. 1982. Unerupted second primary molar. *J. Dent. Child.,* Sep- Oct;49(5);365-8.

Antoniades, K., Kavadia, S., Milioti, K., Anto- niades, V., Markovitsi, E. 2002. Submerged teeth. *J. Clin. Pediatr. Dent*., Spring; 26(3):239-42.

Bianchi, S.D. and Roccuzzo, M. 1991. Primary impac- tion of primary teeth: a review and report of three cases. *J Clin Pediatr Dent.,* Spring;15(3):165-8.

Borsatto, M.C., Sant'Anna, A.T., Niero, H., Soares, U.N., Pardini, L.C. 1999. Unerupted second primary mandibular molar positioned inferior to the second premolar: case report. *Pediatr. Dent.,* May-Jun; 21(3):205-8.

Moorrees, C. F., Fanning, E. A. and Hunt Jr., E. E. 1963. "Age variation of formation stages for ten permanent teeth," *Journal of Dental Research*, vol. 42, no. 6, pp. 1490–1502.

Frank, C.A. 2000. Treatment options for im- pacted teeth. *JADA J. Am. Dent. Assoc*, May;131(5): 623-32.

Pindborg, J. J., 1970. Pathology of the Dental Hard Tissues, Munks- gaard, Copenhagen, Denmark.

Järvinen, S.H. 1994. Unerupted second primary molars: report of two cases. *J Dent Child.* Sep-Dec; 61(5-6):397-400.

Kjaer, I., Fink-Jensen, M., Andreasen, J.O. 2008. Classification and sequelae of arrested erup- tion of primary molars. *Int. J. Paediatr. Dent*., 2008 Jan; 18(1):11-17.

Lautenschläger, G.A., Gallina, M.C., Ferreira Júnior, O., Lara, V.S. 2007. Primary failure of tooth eruption associated with secondarily inflamed dental follicle: inflammatory follicular cyst? *Braz. Dent. J.*, 18:144-7.

Memarpour, M., Rahimi, M., Bagheri, A. and K. Mina 2012. Unerupted Primary Molar Teeth Positioned Inferior to the Permanent Premolar: A Case Report. Journal of Dentistry, Tehran University of Medical Sciences, Tehran, Iran, Vol. 9, No.1)

Murray, P., Brown, N.L. 2003. The conservative approach to managing unerupted lower pre- molars - two case reports. *Int. J. Paediatr Dent.,* May; 13(3):198-203.

Rasmussen, P., Kotsaki, A. 1997. Inherited primary failure of eruption in the primary dentition: report of five cases. *ASDC J. Dent. Child.,* 64(1):43-7.

Noda, T., Takagi, M., Hayashi-Sakai, S. and Taguchi, Y. 2006. "Eruption disturbances in Japanese children and adolescents," *Pediatric Dental Journal*, vol. 16, no. 1, pp. 50–56.

Walker, L.M., Wood, A.J., McDonald, A., Car- penter, W. 2004. Unerupted mandibular second primary molar with an unusual histopatho- logical finding: a case report. *J Dent Child (Chic)*. Jan-Apr; 71(1):77-9.

Winter, G.B., Gelbier, M.J. and Goodman, J.R. 1997. Severe Infra-occlusion and failed eruption of deciduous molars associated with eruptive and developmental disturbances in the per- manent dentition: a report of 28 selected cas- es. Br. *J. Orthod*., May;24(2):149-57.

Otsuka, Y., Mitomi, T., Tomizawa, M. and Noda, T. 2001. "A review of clinical features in 13 cases of impacted primary teeth," *International Journal of Paediatric Dentistry,* vol. 11, no. 1, pp. 57–63.

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