Contemporaneous Impaction of Primary Maxillary Second Molar and Its Succedaneous Tooth - A Rare Occurrence

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ABSTRACT
A tooth is considered impacted when it has failed to fully erupt into the oral cavity within its expected developmental time period and can no longer reasonably be expected to do so. The prevalence of impacted premolars has been found to vary according to age. Submergence is a term defining a tooth that remains below the occlusal plane. Dental ankylosis is thought to be major etiological mechanism of submergence. Early detection and intervention of any impacted tooth must be done either surgical or orthodontically else it may lead to sequelae of malocclusion,

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INTRODUCTION
By definition, an impacted tooth is one that is embedded in the alveolus so that its eruption is prevented or where the tooth is locked in its position by bone or the adjacent tooth/teeth (1).

The prevalence of impacted premolars has been found to vary according to age. The overall prevalence in adults has been reported to be 0.5% - the range being 0.2 to 0.3% for mandibular premolars. Mandibular second premolars rank third after third permanent molars and maxillary permanent canines, in frequency of impactions (1). Impaction of maxillary premolars and canines is seen more often palatally compared with buccally, while the incidence of mandibular premolars is predominantly lingual (1). Literature specific to impacted premolars is not extensive, despite the fact that mandibular second premolars alone account for approximately 24% of all dental impactions (1). Submergence is a term defining a tooth that remains below the occlusal plane (2). Dental ankylosis is thought to be major etiological mechanism of submergence (2,3). Hence submerged deciduous teeth means the affected teeth which do not come to the level of adjacent normal occluding teeth or teeth that are always 0.5 mm or more below the intact marginal ridges of the adjacent teeth (4). Regarding simultaneous impaction of deciduous maxillary second molar and its successor i.e. second maxillary premolar, exact data is not available.

CASE REPORT
A 15 year old girl reported to the department of Orthodontics, PGIDS, Rohtak for opinion and treatment of her mal-aligned teeth. After examination, she was referred to the department of Oral & Maxillofacial Surgery regarding impacted 2nd primary maxillary molar and 2nd maxillary premolar. On clinical presentation, the maxillary left second premolar was absent and maxillary left primary 2nd molar was found to be severely

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submerged. Panoramic radiographs (Figure 1) revealed an impacted maxillary left second premolar (above the 2nd primary molar) with dilacerated root, close to the inferior & medial wall of the maxillary sinus and a submerged deciduous molar.

The patient was scheduled for removal of the impacted second maxillary premolar and submerged deciduous second molar under local anesthesia after performing routine blood investigations and taking informed consent. Incision planned for the surgery included crevicular incisions around permanent maxillary left lateral incisor to permanent maxillary left second molar. Mucoperiosteal flap was reflected using Howarth’s and no. 9 Molt’s periosteal elevator to expose the deciduous tooth and the same was removed with the help of elevator. This revealed the buccal cusp of 2nd premolar which was followed to expose the whole crown buccally and seemed to be tilted bucco-lingually and close to root of first premolar on mesial aspect. As already observed in panoramic radiograph, the impacted premolar was abutting the sinus membrane distally. So to remove it from this strategic location, bone was removed from its occlusal aspect and bone gutting was done buccally using tapered fissure bur under copious saline irrigation. Then the tooth was sectioned as per planning to separate the crown from the root segment. Crown was retrieved and remaining root segment was luxated using elevators and retrieved (Figure 2). This was followed by complete toilet of the surgical wound using betadine & saline (Figure 3). After achieving the haemostasis, the wound was closed with 3-0 silk suture material (Figure 4). Patient was put on a course of antibiotics and analgesics. Patient reported on 7th postoperative day for suture removal and healing was found to be satisfactory. Postoperative radiograph was done (Figure 5). There was no complication following the surgery.
DISCUSSION
A tooth is considered impacted when it has failed to fully erupt into the oral cavity within its expected developmental time period and can no longer reasonably be expected to do so.

Studies report prevalence rates of submerged primary teeth to be from 1.3 to 8.9% of the population with a significantly higher incidence between siblings (3,5). Generally, primary mandibular molars are affected more than 10 times as often as primary maxillary molars (5). The submerged primary tooth can be simply classified as slight, moderate and severe. Slight submerged tooth can be described as tooth between occlusal surface and proximal contact, moderate being within the occlusal-gingival dimensions of the inter-proximal contact point and severe being anywhere below the interproximal contact (6).

In case of severe submersion, clinical trouble may comprise incomplete alveolar process development, lack of normal mesial drift, non response to orthodontic forces, retained primary teeth with or without a successor and impaction of the successor, depressed tooth with tipping adjacent teeth, supra-eruption of opposite teeth, lateral open bite and higher frequency of crossbites (2,6). According to Kurol and Thilander (7), these disturbances have no long term possessions on occlusion. On the contrary, Karnei-Reem (8) notifies that they have detected a significant deviation of the dental inter-incisor midline toward the affected side. In the present case, severely submerged maxillary left second primary molar impacted its permanent successor and because of space loss, the adjacent teeth inclined diminishing the space of related tooth.

The impacted premolars and canines, if left unattended may develop dentigerous cysts around them (9). Adenomatoid Odontogenic Tumors (10) has also been described to develop in relation to impacted teeth. These cysts and tumors may cause displacement of adjacent tooth, bone resorption etc and might require extensive surgical intervention under general anesthesia for its enucleation.

Impacted premolars are often present very high in the palatal vault, close to the nasal and sinus floor and thus might not be detected on a routine periapical radiograph (11). Panoramic radiographs thus play a vital role in the detection of these highly placed maxillary premolars.

Treatment options for impacted teeth include observation, intervention, relocation, and extraction (12). Selection of the appropriate treatment option depends on the underlying etiological factors, space requirements, need for extractions of primary molars, degree of impaction, and root formation of the impacted premolar should be considered (13). Factors such as the patient’s age, medical history, dental status, oral hygiene, functional as well as occlusal relationship and attitude toward the treatment will influence the choice of treatment option (14).

The impacted premolar in present case was planned for removal because of the following reasons: patient’s age at the time of presentation was way beyond chronological age of eruption of second premolar, presence of dilacerated root with closed apex, arch length & tooth material discrepancy which had already lead to anterior crowding of tooth as well as the position of the impacted premolar was so unfavourable that no orthodontic traction of the tooth was possible, hence surgical removal was planned accordingly.

CONCLUSION
To conclude, if a patient reports with a complaint of missing tooth in late mixed dentition period or in permanent dentition in early years of life, diagnosis of impacted tooth should be considered and should be confirmed on the basis of radiological findings. Early detection and intervention of any impacted tooth must be done either surgical or orthodontically else it may lead to sequelae of malocclusion, damage to adjacent dentition or development of any pathological lesions which may further require extensive surgical procedure leading to added patient morbidity.

REFERENCES