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# Management of impacted permanent maxillary second molar: A rare case report

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**Abstract :** *Horizontal impaction of permanent maxillary second molar is a very rare occurrence with a prevalence rate of 0.08%. There are many etiological factors for the impaction of a tooth. For a successful outcome, a pediatric dentist should be able to identify the etiological factor, give a proper diagnosis and then provide a better treatment. This case, reports a case of horizontally impacted maxillary left second molar and the ectopic eruption of adjacent third molar in maxillary sinus.*

**Keywords -** *Impaction, Ectopic eruption, Surgical extraction*

## I. INTRODUCTION

Tooth eruption failure or tooth impaction is a common difficulty and almost 20% of the population are affected.[1] Inclination, lack of space, abnormal positioning of the teeth or small jaws in comparison to tooth size, supernumerary teeth, rotation, and/or odontomas or other pathological entities are the aetiological factors that cause tooth impaction. [2] Maxillary and mandibular permanent third molar impaction is very common whereas impaction of permanent maxillary second molar is relatively rare with a prevalence rate of 0.08%.[3] Managing an impacted permanent second molar is a challenging one in the field of pediatric dentistry and the recommended option to treat such case is the removal of the aetiological factor. Early diagnosis and elimination of etiologic factor are the main objectives to promote development of proper arch form and to reduce the severity of subsequent malocclusion. Hence, the objective of this case report is to discuss the management of a relatively rare horizontally impacted permanent maxillary second molar in a pediatric patient.

## II. CASE REPORT

An 11 years old boy came to the Department of Pediatric and Preventive Dentistry with a chief complain of pain and pus discharge in the upper left back teeth region since 1 week. Pain was severe, continuous, aggravates on chewing food and relieves after taking medication. The patient gave no history of trauma or extraction. No swelling was present extra-orally and lymph nodes were non-palpable. Clinical examination revealed mixed dentition period [Figure 1] and presence of pus discharge from the distal side of maxillary left first molar. OPG revealed horizontally impacted maxillary left permanent second molar and ectopic eruption of adjacent third molar in the left maxillary sinus [Figure 2]. Hence, surgical removal of 27 was planned as a treatment option.

### 2.1 CLINICAL PROCEDURE

Posterior superior alveolar nerve block, Middle superior alveolar nerve block and Greater palatine nerve block were administered using Lignox 2% (Adrenaline 1:80000) locally. Incision was given from mesial surface of 65 to distal surface of 26 using a 12 number B.P. blade. A full thickness flap down to the buccal sulcus was raised. Bone was then removed with a bur distal to the deciduous first molar [Figure 3]. A straight elevator is then placed mesially and the impacted 27 was surgically extracted [Figure 4]. A thorough irrigation was done using betadine and normal saline. Later, bone graft was applied (Sybograf-Plus), flap was closed and interrupted sutures were given [Figure 5]. The adjacent third molar was left untouched as it is inside the left maxillary sinus and also its entry inside the maxillary sinus might also be due to the inflammation caused by the impacted 27. Suture was removed after 1 week and post operative OPG was taken[Figure 6]. Electronic pulp testing was done for 26 and it came out to be positive. So, no root canal therapy was done for 26. Follow up was done at 1 month and 6 months to check the position of third molar.

## III. FIGURES

Figure 1: Maxillary occlusal photograph

Figure 2: OPG showing horizontally impacted 27 and 28 impaction in maxillary sinus

Figure 3: Flap raised and window created

Figure 4: Extracted tooth

Figure 5: After suturing

Figure 6: Post operative OPG

## IV. DISCUSSION

The management of impacted teeth differs greatly depending upon their location. The ideal treatment depends upon several criteria including the age of patient and the extent of impaction of the involved tooth. There are various treatment options which may range from conservative approach such as creation of space and passive eruption, to extraction of deciduous tooth and can also include invasive surgical procedures such as tooth

exposure and orthodontic traction. Surgical extraction of the involved tooth is the only choice of option if the above alternatives are not possible.

Faulty positioning of the developing maxillary third molar is an important physical obstruction causing impaction of the maxillary second molar.[4] In this case, the adjacent third molar of the involved tooth lies inside the left maxillary sinus, so the third molar does not seems to be the cause of impaction of the second molar as it stays away from the path of its eruption. In a report of five rare cases impaction of second molar due to ectopic position of third molar germ has been reported and only one of the cases reported showed spontaneous eruption of maxillary second molar after removal of third molar tooth germ.[5] Grover and Lorton[3] stated that the second molars (0.08% of the population for upper second molars and 0.06% for lower second molars) are the most frequently non erupted permanent molars excluding third molars. From the literature, it has been reported that tooth eruption problem is more common in mandible than in maxilla in permanent molars and also the rate of impaction is more in second molar as compared to first molar.[6] In the present case, surgical extraction was done as the impacted second molar was already infected due to which there was pain and pus discharge from the distal side of first molar and if left untreated for days, then it could lead to root resorption or cysts.[7] So, to avoid such circumstances extraction of horizontally impacted maxillary left second molar was done surgically. After 1 week of follow up period all the symptoms i.e. pain and pus discharge had disappeared which proved that the overlying symptoms were due to the horizontally impacted second molar. Also, the first molar was tested for its vitality and as its result was positive, it shows that there was no hindrance to the tooth while extracting. Furthermore follow up was done to check the position of the third molar. In most of the cases pain or swelling is due to the obstruction by third molar but in this case the symptoms are due to the horizontally impacted second molar as all the symptoms disappears after its extraction.

## V. CONCLUSION

The impaction of permanent maxillary second molar in pediatric patients is a rare situation. So, a pediatric dentist should be aware of causes of tooth impaction even the uncommon ones. For a proper management, careful introspection, recording a proper history, determining the responsible etiological factor and early diagnosis of such condition is necessary.

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