

# SEVERE IMPACTION OF THE PRIMARY MAXILLARY SECOND MOLAR ALONG WITH HORIZONTAL IMPACTION OF THE PERMANENT FIRST PREMOLAR -A RARE CASE REPORT

## ABSTRACT

**AIM-**The purpose of this case report is to present a case of a totally impacted maxillary second molar and horizontally impacted first premolar .

**BACKGROUND-**Impaction of deciduous teeth is an uncommon event. Various factors which lead to the impaction of a deciduous tooth include ankylosis, congenitally missing permanent teeth, defects in periodontal membrane, trauma, defects in eruptive forces or a combination of all these factors.

**REPORT-**A 12-year-old male patient reported to the department with a chief complaint of pain in the upper left back teeth region. On clinical examination, first premolar tooth was missing. Panoramic and maxillary occlusal radiographs revealed a horizontally impacted first premolar close to the inferior wall of the maxillary sinus and a vertically impacted second deciduous molar embedded within bone close to the inferior wall of the maxillary sinus between 2<sup>nd</sup> premolar and 1<sup>st</sup> permanent molar.

**CONCLUSION-**The complete impaction of deciduous teeth is a rare condition and very few cases have been reported in the literature. This case reports a totally impacted maxillary second deciduous molar along with a horizontally impacted 1<sup>st</sup> premolar tooth and its surgical management.

**Key Words-** Teeth, maxillary occlusal radiograph, maxillary sinus, ankylosis

## INTRODUCTION

In the process of tooth development and eruption, the tooth might fail to erupt. This failure to erupt is known as Tooth impaction. Reports of impaction and eruption failure in primary

teeth are relatively rare compared to permanent teeth. The prevalence of impaction in the general population ranges from 0.8-3.6% [Urbanowicz et. al. 2016] <sup>[1]</sup> Impaction is most commonly seen in the permanent dentition but unusually it can also be seen in the primary dentition.

The most common primary tooth to get impacted is the second primary molar. It ranges from 2.5-

8.3% in its prevalence.[AristidisArhakis and EiriniBoutiou 2016]<sup>[2]</sup>, 1.3-35% [Gunduz K.Muğlali M, Inal S. 2007]<sup>[3]</sup> In literature the incidence of impacted primary teeth is 1:10,000cases making it a rarephenomenon [Sfasciotti G.L. etal.2017]<sup>[4]</sup>

The etiology of primary impacted teeth is still not clear however various studies suggest itscause to be ankylosis.<sup>[4]</sup>It has been reported in the literature that pericoronalmyxofibroushyperplasis could present a hindrance to normal tooth eruption . [Taguchi et al 2005<sup>[5]</sup>,Yonemochi et al 1998<sup>[6]</sup>] Other factors that might cause this impaction can be odontomas,congenitally missing permanent teeth, periodontal ligament, membrane defects or injury, or acombination of all.[ Memarpour M. et al. 2012]<sup>[7]</sup> Bianchi and Rocuzzo 1991 defined thecriteria to be used to diagnose primary impaction are, the tooth should be deeply positioned inthejaw,nocavitiesandrestoration,norootresorption,frequenteruptionofthecorrespondingpermanent tooth, possibleretention and malposition of theadjacent permanent tooth.<sup>[8]</sup>

GenuineRe-Impactionisarareconditionandresultsfromaprogressivelossofocclusalcontactwith no further growth in the height of alveolar process of the submerged deciduous tooth. Bycontrasttheadjacentpermanent teetherupt;theregionalalveolarprocess moveocclusally andthesubmergedtooth is completely buried in the oral tissue.<sup>[3]</sup>

Impactionofprimaryteethcaninturnleadtomalposition,orevendisplacementandimpactionofpermanentteeth.Thiscanhinderthegrowthofpermanentdentalarchforms,soitsdetectionand early intervention becomes a necessary step. The present case report describes an unusualcase of eruption failure of the primary second molar and horizontally impacted permanentmaxillary first premolar which is considered a rarity in dental practice.This is the first case ofindiabeing reported .

## CASE REPORT

A 12-year-old male patient reported to the Department of Pediatric and preventive dentistry, with a chief complaint of pain in the upper left back tooth region since 2-weeks. No relevant past medical or dental history was reported. Family history was non-contributory.

On clinical examination, there was normal development of dentition with the exception of absence of the left maxillary first premolar tooth.

There was no associated swelling or discoloration of the surrounding tissue.

A

panoramic radiograph (OPG) and a maxillary occlusal radiograph (figure 1,2) were advised which revealed the presence of an impacted left maxillary second primary molar and a horizontally impacted permanent first premolar tooth. The root of the horizontally impacted first premolar tooth was at the apex of the left permanent canine with its coronal portion at the apex of the left permanent second premolar. The impacted first premolar tooth was positioned in close proximity with the inferior wall of the maxillary sinus. The crown tip of the impacted premolar was near the junction of the crown and root of the impacted second primary molar tooth. (Fig.1) Based on this information a surgical management plan was made.

The patient was scheduled for surgical extraction of both the impacted teeth under Local anesthesia. Hematological tests were advised before the surgery. Buccal approach was planned. Posterior superior alveolar, greater palatine nerve blocks were given, followed by buccal infiltration. Buccal flap was raised at 23, 25 and 26. During the procedure the retained deciduous tooth i.e., 65 was found to be ankylosed. Bone cutting was done to expose the tooth. The tooth was extracted with the help of a maxillary extraction forcep. On extraction of the retained deciduous tooth, the crown of horizontally impacted first premolar was revealed after which its careful extraction was performed. Bone graft was placed in the socket, and suturing was done. Coe-Pak was placed over the surgical site to prevent postoperative pain and

bleeding. Antibiotics and analgesics were prescribed (Tab. Augmentin 375mg, Tab. Ibuprofen 400mg) for 7 days and the patient was recalled after 14 days for suture removal.

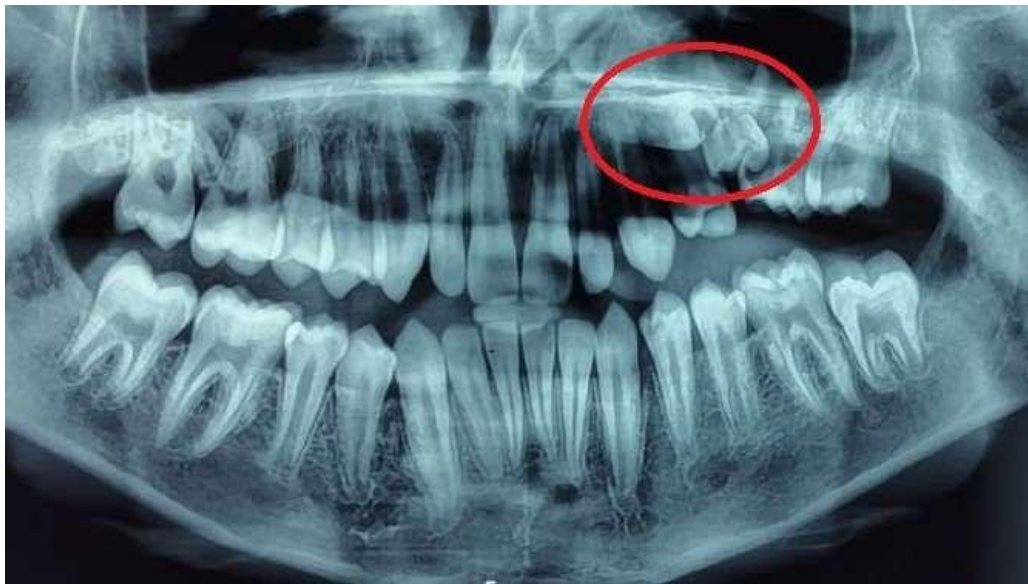


Figure 1 OPG of a 12-year-old male with impacted teeth (65,24) [Refer the circle in red]

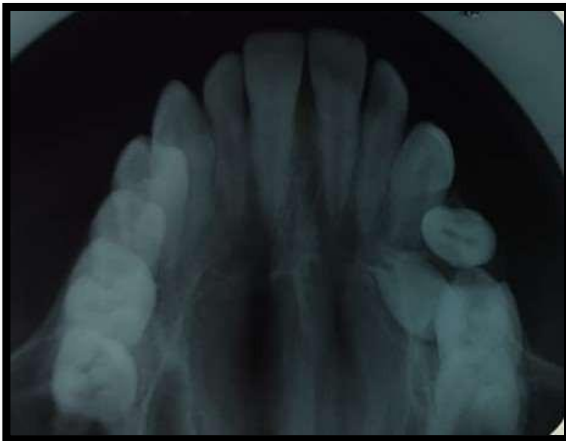


Figure 2 Maxillary Occlusal radiograph

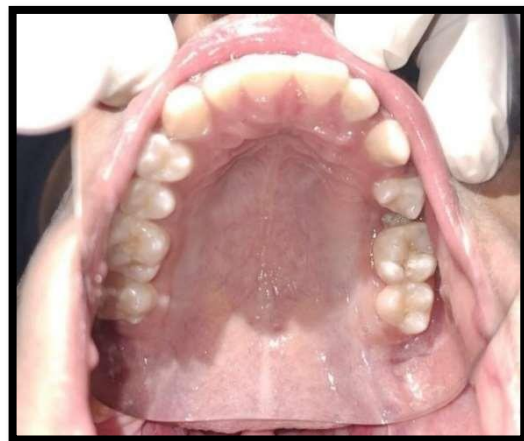


Figure 3 Preoperative maxillary view



Figure 4 Gingival incisions for raising the buccal flap

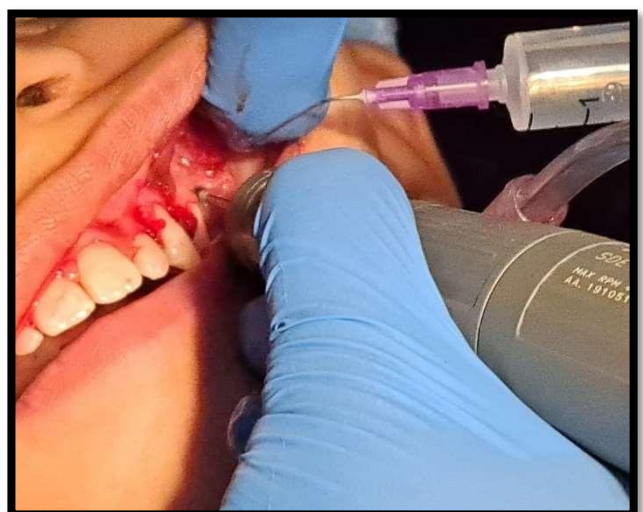


Figure 5 Bone cutting was a done



Figure 6 Extraction of retained second deciduous molar



Figure 7 Extraction of horizontally impacted first primary molar



Figure 8 Bone graft was placed



Figure 9 extracted impacted teeth



Figure 10 sutures placed



Figure 11 Coe-Pak was placed

## DISCUSSION

Primary teeth impaction is a very rare condition that is usually due to disturbances in the eruption process. There can be various reasons for this impaction including the presence of odontomas, supernumerary teeth, periodontal injuries, hyperplasia of gingiva over erupting tooth, and most commonly ankylosis of the tooth.[Matsuyama J.]<sup>[9]</sup> In the present case, the etiology was concluded to be ankylosis of the primary second molar.

The impaction of deciduous teeth can lead to various complications such as pain, swelling, tooth decay, mal-alignment of teeth, and gingival inflammations. Along with all these complications, an impacted primary tooth can hinder or displace its permanent successor

as was seen in this case where there was displacement of the first premolar tooth which had led to its horizontal impaction. To avoid these complications early diagnosis and intervention are required. Yawaka Y. et al<sup>[14]</sup> in their case report concluded that early detection and treatment of impacted primary teeth is of utmost importance for children's healthy growth and development. Ten Cate<sup>[10]</sup>, Thornton et al<sup>[11]</sup>, and Biederman<sup>[12]</sup> recommended early extraction as the treatment for primary impacted teeth. Watanabe et al<sup>[15]</sup> in their case reports similar to the present case initially attempted to preserve the unerupted primary tooth but it was finally extracted to allow eruption of the succedaneous permanent tooth. McDonald on the contrary has advised the wait-and-watch method in some cases for the tooth to exfoliate on its own<sup>[13]</sup>. In the present case, the primary impacted (second deciduous molar) tooth was causing hindrance in the eruption of permanent teeth and also there was a risk of cyst formation associated with the impacted tooth so the treatment planned was surgical extraction of the tooth.

For the treatment of impacted premolar, various treatment strategies are advised which include extraction of the primary impacted teeth and keeping the patient under follow-up supervising the eruption of the permanent teeth, surgical exposure and repositioning of the tooth, and

surgical removal of the premolar.<sup>[5]</sup> In the present case, surgical extraction was performed as the premolar was horizontally impacted and positioned above the roots of the permanent canine and second premolar. The extraction of both teeth was successfully carried out without any complications.

Pediatric dentists play a very important role in the early detection and management of such cases to prevent any further complications and thereby preventing any eruption disturbances of permanent teeth.

## CONCLUSION

Impaction of primary teeth is a very rare condition and can lead to various complications, even disrupting the normal eruption pattern of permanent teeth. Early detection and management is of utmost importance in such cases. This case throws light on the importance of dental and stomatognathic screening of a child during its deciduous dentition stage. The present case reports one such rare case of impacted second deciduous molar and first premolar.

### **Consent**

As per international standard or university standard, patients' written consent has been collected and preserved by the author(s).

### **Ethical Approval:**

As per international standard or university standard guideline participant consent and ethical approval has been collected and preserved by the authors.

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