

## A case series of rare variations in impacted permanent molars

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**Abstract:** Axial movement of the tooth from the developmental position within the jaw to its functional position in the occlusal plane is called as eruption of tooth. Failure of the eruption of tooth may be caused by any interference in the sequential events of eruption or by the pathology of the surrounding bone. This can lead to the aberrant eruption pattern or ectopic eruption of the tooth. Impacted tooth therefore can be abnormal, non-functional or pathological. However, some teeth are rarely impacted or some patterns of impaction are rarely seen. The present case series reports ectopic eruption of the permanent molars with rare presentations.

**Keywords:** Ectopic eruption, Impaction, Permanent molars.

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### INTRODUCTION

Impacted tooth is defined as the tooth which cannot erupt into its normal functioning occlusal position and is pathologic and therefore require treatment. The impaction of permanent teeth commonly occurs in the descending order of third molars, followed by maxillary canines, mandibular premolars, mandibular canine, maxillary premolars, maxillary central incisors, and mandibular second molars. First permanent mandibular molars and permanent maxillary second molars are rarely impacted [1-3].

Interference in the natural process of eruption can lead to impaction of tooth and can lead also lead to arch length deficiency or other consequences in future [1, 4].

Here we report a case series of permanent molars with rare impaction patterns. Ectopic eruptions of the third molar are rare and impactions of first and second molars are infrequent. However, we report a case of first molars impacted, deep maxillary third molar impaction, horizontal impaction, distoangular impaction and impacted distomolar and paramolars.

### CASE REPORT

#### CASE 1

A 19 year old male patient came with a complaint of minimally visible tooth in the left mandibular posterior region. On examination impacted permanent mandibular first molar was seen. (Fig.1) In radiological examination, distoangular impacted mandibular first permanent molar was visible with typical curvature of root in 180 degree. (Fig. 2 and 3) The occlusal surface of the first molar was slopping distally and was below the cervical margin of the

mandibular second molar. There is supraeruption of the maxillary first permanent molar of the left side. Also, both sided maxillary third molars were found to be impacted below the cervical levels of the second molars.

#### CASE 2

A 21 year old male patient came with a complaint of pain at the maxillary right posterior of jaw since 2 to 3 months. On clinical examination deep pocket was present between permanent second premolar and first permanent molar. Also, missing third molar was found on both right and left side. In radiographical examination, both the right and left side permanent maxillary third molars were impacted deeply in maxillary bone with uncommon angulations. (Fig. 4)

#### CASE 3

A 22 year old male patient came with a complaint of pain at the right side mandibular posterior region since 1 to 2 months. On clinical examination, only small portion of the crown of permanent mandibular third molar was visible. On radiological examination, both sided mandibular third molars were horizontally impacted. Also, in the maxillary arch, on left side, 2 supernumerary teeth were present. One was paramolar visible in the oral cavity behind the permanent first molar and the second was distomolar impacted between second and third molar. (Fig.5)

#### CASE 4

A 24 year old male patient came with a complaint of pain at the maxillary left posterior region since 2 months. On radiographical examination, it was found that both sided maxillary third molars were impacted distoangularly. Also, supernumerary molar

was found on the distal of the left permanent maxillary third molar. (Fig.6)



**Fig-1: Clinical photograph of the patient showing impacted permanent mandibular first molar of left side. (Case 1)**



**Fig-2: OPG showing impacted permanent mandibular first molar of left side with typical 180 degree curvature of the root. Impacted maxillary third molars were also seen. (Case1)**



**Fig-3: IOPA showing impacted permanent mandibular first molar with 180 degree angulation of the root. (Case 1)**



**Fig-4: OPG showing deep maxillary impaction of the permanent maxillary third molars of the right and left side. (Case 2)**



**Fig-5: OPG showing horizontally impacted permanent mandibular third molars and presence of supernumerary teeth, paramolar (impacted) and distomolar in the maxillary left side. (Case 3)**



**Fig-6: OPG showing presence of distoangularly impacted all permanent third molars with presence of impacted distomolar in the maxillary left side.(case 4)**

## DISCUSSION

Permanent first and second molars are less commonly impacted, with the prevalence of 0.08% for the permanent maxillary second molar, 0.02% for the permanent maxillary first molar and 0.01% for permanent mandibular first molar [1, 9].

Permanent first molars are key teeth in the occlusion and it is essential that their delayed eruption be guided to the correct position in the dental arch [5].

Reasons for the impaction of the permanent molars other than third molars are ectopic eruption and it may cause resorption of distal root of deciduous

molars or even premature exfoliation of the same. The causes for impaction can be systemic and local [1, 6].

- Systemic causes includes [1, 6, 7]:
- Cleidocranial dysplasia,
- Endocrine deficiency (hypothyroidism and hypopituitarism),
- Febrile disease,
- Down Syndrome
- Irradiation,

In all these conditions generally multiple teeth are involved.

- The local causes includes [1, 6, 7]:
- Prolonged retention of deciduous tooth,
- Premature loss of primary molars,
- Ankylosis of primary molars,
- Arch length deficiency,
- Supernumerary tooth,
- Malposed tooth germ,
- Dentigerous cyst,
- Odontogenic tumors,
- Abnormal path of eruption,
- Trauma and cleft lip and palate.

Local innervation disturbances, caused by viral attacks on the nerve paths, can delay both dental development and eruption [8].

Eruption of the first permanent mandibular molars can be disturbed either by primary retention, which is an arrest in the eruption process before the molar has penetrated the oral mucosa, or by secondary retention, which is an arrest in the eruption process after the molar has penetrated the oral mucosa [8].

Treatment options for an impacted molar include extraction, removal of the physical barrier, surgical up righting, transplantation, surgical-orthodontic approach, and dental implant replacement [1, 9].

In choosing a treatment plan for multiple impacted molars the decision-making process must be handled very cautiously as a result of the uncertain etiology, the lack of standard therapy, and the paucity of cases reported [1, 9].

Due to the low prevalence of impaction of the first and second permanent molars, there is a lack of uniformity in the management of these impacted teeth, and published reports are mostly based on case reports and mesially inclined molars [9].

## CONCLUSION

Clinical and radiological investigations of patients revealed some interesting findings. The

identification of the ectopically erupted teeth is highly important in view of the pathology associated.

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