Ectopic eruption of the first permanent molar occurs due to the abnormal mesiodistal or mesiolingual eruption path of the molar resulting in an impaction at the distal prominence of the primary second molar’s crown. It can be suspected if asymmetric eruption is observed or if the mesial marginal ridge is noted to be under the distal prominence of the second primary molar. Ectopic eruption can be diagnosed from bitewings or panoramic radiographs, Fig 1, 2. The prevalence of this condition is reported to be up to 0.75%1. The ectopic eruption is more common in cholelithiasis patients2.

Ectopic eruption of permanent molars is classified into two types. There are those that self-correct or “jump” and others that remain impacted. In 60 percent of the cases, the molar jumps3. In most of these self-corrected cases, the condition goes unnoticed and is discovered later by evidence of resorption of the distal root of the second primary molar in routine radiographs. A permanent molar that presents with part of its occlusal surface clinically visible and part under the distal of the primary second molar normally does not jump and is the impacted type4. Non-treatment can result in early loss of the primary second molar and space loss, molar impaction, undetected caries and abscess formation5.

Aetiology

The aetiology of this condition is multifactorial, some of these factors might be:
- Abnormal eruption angle “mesial” of the first permanent molar.
- Heredity
- Cleft lip and Palate
- Abnormal eruption angle “mesial” of the first permanent molar.
- Larger second primary molars
- Small or posteriorly positioned region

Alteration in the chronology of eruption of the molar jumps2. In 66 percent of the cases, the molar jumps2. Remain impacted. In 66 percent correct or “jump” and others that self-corrected cases. There are those that self-corrected cases. The condition goes unnoticed and is discovered later by evidence of resorption of the distal root of the second primary molar in routine radiographs. A permanent molar that presents with part of its occlusal surface clinically visible and part under the distal of the primary second molar normally does not jump and is the impacted type4. Non-treatment can result in early loss of the primary second molar and space loss, molar impaction, undetected caries and abscess formation5.

Treatment considerations

Treatment depends on how severe the impaction appears clinically and radiographically. For mildly impacted first permanent molars, where little of the tooth is impacted under the primary second molar, elastic or metal orthodontic separators can be placed to wedge the permanent first molar distally2. Figure 3. For more severe impactions, distal tipping of the permanent molar is required. Tipping action can be accomplished with brass wires, removable appliances using springs, fixed appliances such as sectional wires with open coil springs, Figure 4, sling shot-type appliance6. Figure 5, a Halterman appliance10. Figure 6, or surgical uprighting11.

After the distal tipping of the permanent molar, attention should be given to the condition of the second primary molar. Distal root resorption might lead to early loss of the tooth. Close monitoring of the situation is necessary and the provision for space maintenance by means of an upper bilateral Naene appliance should be considered if the second primary molar is lost.

In instances where the distal tipping of the first permanent molar is not possible due to lack of patient’s cooperation or other limitations, the distal prominence of the second primary molar can be reduced to alleviate the problem. Some loss of space will occur in this situation. Full coverage by a stainless steel crown might be needed if the primary second molar is compromised.

References


Figure 1: A panoramic radiograph showing ectopically erupted upper right and lower right first permanent molars.

Figure 2: A periapical radiograph showing ectopically erupted upper right first permanent molar.

Figure 3: A plastic orthodontic separator is placed to attempt to correct a mild ectopic eruption in the upper right first permanent molar.

Figure 4: An ectopically erupted first primary molar corrected by an open coil spring fixed orthodontic appliance.

Figure 5: Bilateral ectopic eruption of the upper first permanent molars treated by a sling shot type appliance.

Figure 6a: Figure 6: a) showing a Halterman appliance in place b) showing the tooth movement after one month of treatment and c) showing the up righting of the molar after 2 months of treatment.

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Management of Ectopically Erupted First Permanent Molars

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