

Transposition of Unilateral Maxillary Canine & First Premolar : A Case Report.

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Introduction

Tooth transposition is a severe disturbance of tooth order and eruptive position involving certain teeth that may occur at any of specific sites in the mouth¹⁴. Tooth transposition affected the maxillary dentition more frequently than the mandibular dentition (76%). Unilateral transposition accounted for 88% of cases¹³. Transposition is a rare developmental disturbance of tooth order characterized by positioned interchange of the two teeth on the same side of the dental arch.¹ It is identified as complete transposition when the crown and the roots of the involved teeth exchange places in the dental arch and incomplete transposition when the crowns are transposed but the roots remain in their normal positions.^{2,3} The canine shows the highest incidence of transposition with the first premolar.⁵ Transpositions affect both sexes, but female patient have been reported to outnumber male patients.⁶ This condition may occur both bilaterally or unilaterally, but a greater incidence of unilateral cases has been reported, left side dominance has been reported.^{6,4,8} The aetiology of transposition is still obscure, however transposition of tooth buds anlarge stage, migration of a tooth during eruption, hereditary retained deciduous teeth and trauma have been proposed as possible etiological factors.^{8,4,3} Transposition in the maxilla is always as a result of displacement and ectopic eruption of the maxillary canine where as transposition in the mandible is typically a result of migration of the mandibular lateral incisor .Conversely the mandibular canine erupts in a relatively normal anatomic positions³ Maxillary canines develop high in the maxilla and are among the last teeth to develop and travel a long path before they erupt into the dental arch.

A 28 year old female patient reported to the department of Periodontics for routine

cleaning of teeth revealed maxillary right first premolar and canine had interchanged their position and missing maxillary lateral incisor on the same side.(Figure-1&Figure-2). There was diastema between displaced premolar and central incisors. Patient's oral hygiene status was poor with mild flurosis Patient was totally unaware of the dental condition. Past medical and dental history was non-contributory. An Orthopentogram revealed missing upper right lateral incisor and complete transposition of premolar and canine with premolar placed mesiodistally with fused roots .(Figure-3). Since the patient and her family did not show any concern for aesthetics and for the treatment, also because of financial constraints, no treatment was instituted.

Discussion

Early diagnosis and detection of a developing transposition is based on clinical examination followed by complete radiographic survey. When detected early enough, interceptive treatment may resolve the developing malocclusion⁹. Treatment options in case of transposition include alignment of the involved teeth in their transposed positions, extraction of one of the transposed teeth, or a complete orthodontic correction to their normal anatomic positions.¹¹ In incomplete transpositions, where the crowns are transposed but the roots are in normal position, up righting and rotating the involved teeth is the procedure undertaken to place them in normal alignment provided sufficient space is available in the arch¹². When a transposition is complete, repositioning the teeth in their normal positions is complex and may be damaging to the teeth or supporting structures. Multiple factors such as the position of the root apices, dental and facial aesthetics, acceptable occlusion, patient age, motivation, expected compliance and the extra length of treatment time should be carefully considered in deciding upon treatment options. Hence in the case of

complete transpositions, alignment of the teeth in their transposed positions with reshaping of their incisal surfaces will give acceptable aesthetic results⁹. Among dental anomalies tooth transposition is considered the most difficult to manage clinically, the results are often both functionally and aesthetically unsatisfactory¹¹

References

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