

Maxillary Canine Transposition to Incisor Site: A Case report

Dr. K. S. Negi, MDS (KGMC Lko.)

Astt. Professor

Dept. of Orthodontics & Dentofacial Orthopedics

H. P. Govt. Dental College & Hospital Shimla INDIA

docksnortho@gmail.com

Tooth transposition is defined as the positional interchange of two adjacent teeth within the same quadrant.^{1,5} It is identified as complete transposition when the crowns and the roots of the involved teeth exchange places in the dental arch and as incomplete transposition when the crowns are transposed but the roots remain in their normal positions.¹ The incidence has been reported as about 0.4%.⁶ Tooth transpositions occur more commonly in the maxilla than the mandible,^{6,7} and the maxillary permanent canine has been reported as the tooth most frequently involved in transposition.^{6,8}

Tooth transpositions are more commonly observed in females^{2,4,7,9} and may occur unilaterally or bilaterally.¹⁰ Several etiologic factors like genetics,^{2,4,6,11,12} interchange in the position of the developing tooth buds,¹⁴ trauma,^{3,10,14} mechanical interferences,^{2,8,9} and early loss of incisors³ have been associated with tooth transposition. In the literature, six types of transpositions; Maxillary canine-first premolar, Maxillary canine-lateral incisor, Maxillary canine to first molar site, Maxillary lateral incisor-central incisor, Maxillary canine to central incisor site, Mandibular lateral incisor-canine transpositions, were clearly identified.^{3,4,15}

Articles reporting various kinds of transpositions existed in the literature, but there are only a few reported cases of transposition of the maxillary canine to the central incisor site.¹⁰ This case report presents the transposition of maxillary canine to central incisor site.

Diagnosis

A 17 year old female reported to Dept. of Orthodontics & Dentofacial Orthopedics, H. P. Govt. Dental College Shimla, for orthodontic treatment with the chief complaint of one tooth is riding on front teeth and missing of one tooth. On clinical examination there is an ectopic eruption of left canine placed high in the arch between left central and lateral incisors with class I molar relation and mild crowding (fig.1).



Figure 1

On radiographic evaluation showed a complete transposition of upper left canine with upper left lateral incisor and is parallel to lateral incisor and almost complete resorption of the root of left central incisor (fig.2).



Figure 2

Since the case is dento-skeletal class I with mild crowding in lower arch and ectopically placed left canine, the treatment planning for this case involved the alignment of anterior segment to achieve esthetically and functionally normal occlusion. It was planned to remove the left central incisor crown which had more than 3/4th root resorption and replace it with canine which is completely transposed to the lateral incisor, to give a strong abutment for prosthetic replacement of left canine.

Treatment Approach

Upper arch was bonded with 022 standard edgewise bracket and bands with buccal tubes were cemented in first molar. Left central incisor root of which was almost completely resorbed was removed and 014 NiTi wire was placed to align the upper arch and the left canine is slowly guided to the central incisor space. Upper 014 wire is replaced with 016x022 NiTi wires for final alignment and leveling. Lower arch bonded with 022 standard edgewise brackets and 016 NiTi archwire ligated for alignment (fig.3). Then 019x025 stainless steel ideal arch wire, with 1st and 3rd order bends placed as a final archwire and keep it for two month before debonding the case. After debonding upper and lower Hawleys retainer was placed and advised for prosthetic replacement. After placing the FPD new upper retainer was fabricated according to new arch with FPD and advised for continuous use of retainer with regular followup.



Figure 3



Figure 4

Shapira and Kuftinec⁸ suggested that maxillary canine to central incisor site transpositions should be classified as ectopic eruptions. Peck and Peck³ also found this erroneous because the lateral incisors had not shifted distally in these cases. Regardless of what the phenomenon is called, this kind of transposition is a rare condition. The treatment response was excellent with proper placement of left canine in the position of left central incisor giving a strong

abutment for FPD (fig.4). The patient after orthodontic treatment and placement of FPD possess confidence to smile and with enhanced self-esteem.

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The Author

