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ABSTRACT

Ectopic eruption of canine or buccally placed canine is frequently found in general population. Cause can be genetic or environmental. Diagnosis and timely management of highly placed canine is must by orthodontist. This article is about a case of 12 year old male patient with buccally placed permanent maxillary canines bilaterally. Extraction is carried out for managing severe crowding and get canines into the arch. Extrusion and retraction of canine is done by segmental T-loop on both sides in maxilla.

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INTRODUCTION:

Canine being a corner tooth of arch plays an important role esthetically as well functionally. Ectopic buccal eruption of maxillary canine is one of the most frequently encountered condition in orthodontics.

The prevalence of maxillary permanent canine impaction or ectopic eruption in general population is 1-2%.^{1,2}

There is wide range of systemic and local etiology for such ectopic eruption. Also environmental factor may affect during long and tortuous course of canine eruption path.

Canine impactions are found to occur in families, suggesting a genetic or familial pattern of inheritance. Peck and peck³ suggested it to be a multi-factorial genetic inheritance.

CASE REPORT

DIAGNOSIS

A 12 year old male patient came with chief complain of irregularity in upper front teeth. After clinical examination it was found that maxillary canines were buccally placed bilaterally with class II molar relation on both sides. Also crowding was present in lower arch with a midline shift of 2mm on left side. Overjet of 3mm and overbite of 5mm was seen. No mandibular shift was noted on closure. No relevant medical history was found. Radiographic examination showed class I skeletal pattern and horizontal growth pattern.



Figure 1: (a)Pre-treatment Extra-oral photos



Figure 1: (b)Pre-treatment Intra-oral photos

TREATMENT OBJECTIVES AND PLAN

Treatment objectives were to achieve well aligned upper and lower arches with class I molar and canine relation, to obtain normal overjet and overbite with ideal incisor inclination. To get buccally placed maxillary canines into arch extraction of upper first premolars was planned on

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both sides and in lower arch extraction of second premolars bilaterally was decided for relieving crowding and midline shift correction.

TREATMENT PROGRESS

Treatment plan includes extraction of 14, 24, 35 & 45. Treatment was started with extraction of upper first premolars. Both upper first molars were banded and canines were bonded. Segmental T-loop for extrusion and retraction of both right and left canines was given. Patient was recalled after every 5 weeks for follow up. After achieving canine in arch fixed appliance treatment was initiated in both upper and lower arches.

Full arch upper and lower bonding was done using 0.022" slot edgewise bracket. Lower second premolars were extracted bilaterally to relieve crowding and correct molar relation. Thus leveling and alignment of both arches is done.



Figure 2: Segmental T-loop



Figure 3: Post T-loop result



Figure 4: Intra-oral photographs after alignment of canine

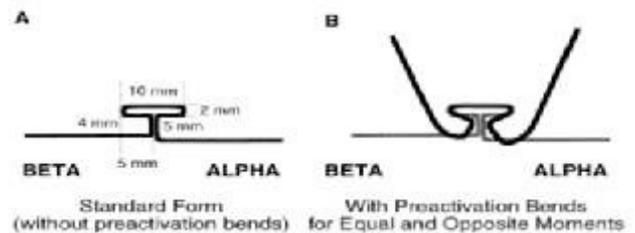
DISCUSSION

After extraction space closure is done either by sliding mechanics or frictionless mechanics i.e with loop.

Various loops are used for retraction purpose like T-loop, opus loop, tear drop shape loop, etc. Loop mechanics is friction free and thus by maintaining

moment to force ratio we can get pure translation movement of tooth.

T-loop was given by Charles Burstone in 1962. It can be used for segmental tooth retraction or en-masse retraction during space closure. Desired tooth movement can be achieved by changing position of loop or changing preactivation bends. Desired movement is achieved by controlling moment to force ratio.



T-loop is constructed using 0.017" x 0.025" Titanium molybdenum alloy (TMA) wire. Advantage of TMA over stainless steel are low modulus of elasticity, low force and high range of action. T-loop with standard dimensions was made with pre activation bend.⁴

CONCLUSION

T-loop is versatile loop which can be used for differential anchorage control for various tooth movement like segmental retraction, en-masse retraction, extrusion or intrusion. Sometimes it requires multidisciplinary approach. If proper diagnosis and biomechanics is used, the goal is not difficult to achieve.

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