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INTERNATIONAL JOURNAL OF ADVANCED RESEARCH (IJAR)

Article DOI:10.21474/IJAR01/14563
DOI URL: http://dx.doi.org/10.21474/IJAR01/14563

ISSN NO. 2320-5407

*RESEARCH ARTICLE*

# OCCLUSAL PLANE CANTING : A CASE REPORT

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## *Manuscript Info*

***Manuscript History***
Received: 20 February 2022
Final Accepted: 24 March 2022
Published: April 2022

## *Abstract*

Occlusal plane canting could be a challenge for orthodontists due to complexity of mechanics and uncertainity of treatment. Earlier, before advent of TADS in orthodontics, canting was treated by complex mechanics using elastics, asymmetric bends in archwires, bite blocks, high pull headgears, orthognathic surgeries etc. With advent of TADs, it's become easier to treat occlusal canting even in some severe cases. The present case report illustrates treatment of severe canting by use of temporary anchorage devices hence avoiding surgery.



## Introduction:-

Occlusal plane canting could be a challenge for orthodontists due to complexity of mechanics and uncertainty of treatment. [1-6] Earlier, before advent of TADS in orthodontics, canting was treated by complex mechanics using elastics, asymmetric bends in arch wires, bite blocks, high pull headgears, orthognathic surgeries etc. [(2,3,6,7)] With advent of TADs, it's become easier to treat occlusal canting even in some severe cases.[7-14] For treating a case with TADS , proper diagnosis is vital to find out which part should be intruded and which part should be extruded.[2,12] Thorough knowledge of biomechanics associated with TADS is additionally essential to avoid all side effects and procure desired results accurately.[3,9,14]

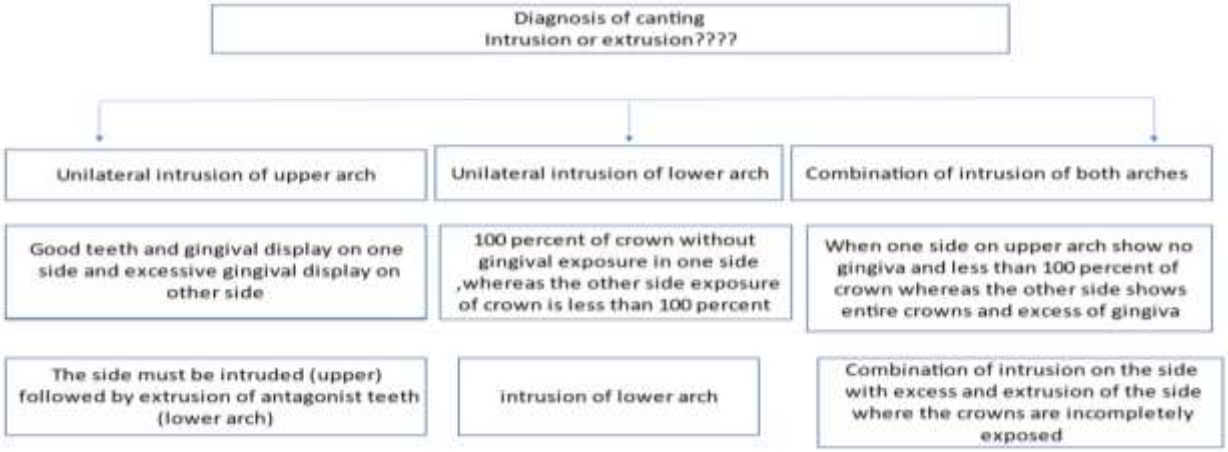


**Figure 1:-** (Diagnosis of canting).

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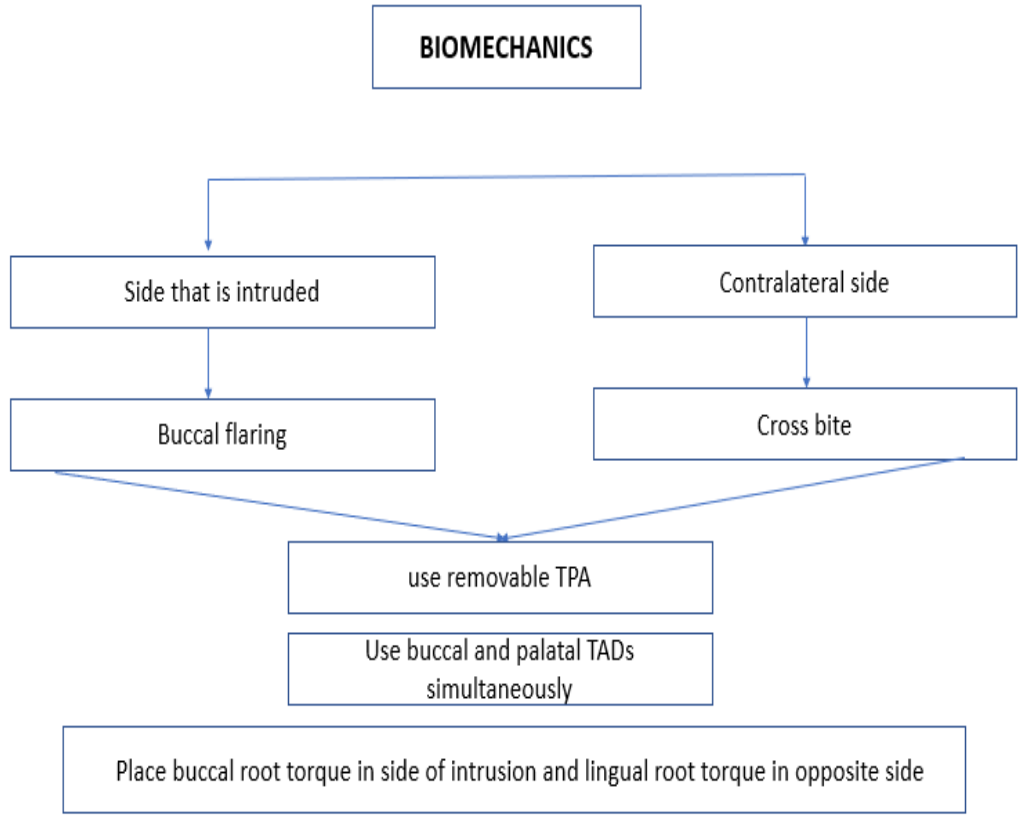


**Figure 2:-** (Biomechanics of canting correction).

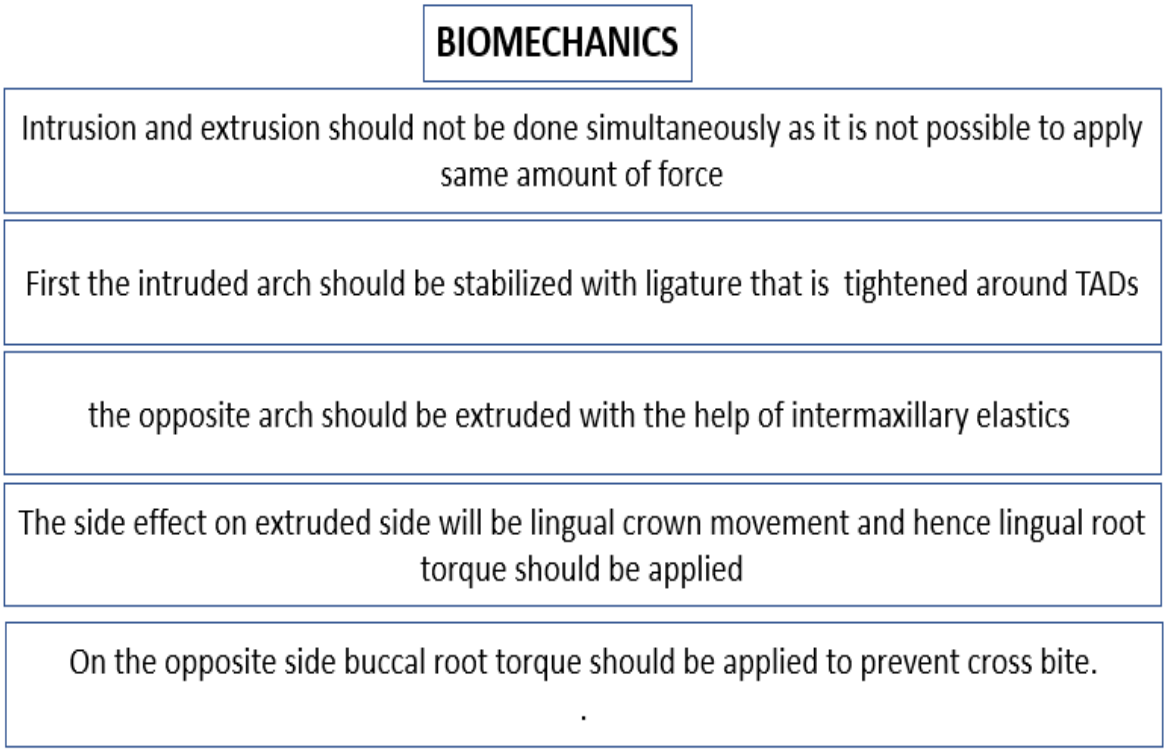


**Figure 3:-** (Biomechanics of canting correction).

**Case Report**

A male patient with 14 years of age reported to the department of orthodontic, GDC Indore with chief complaint of forwardly placed upper front teeth. Intra oral examination revealed Angle's Class II Division 1 subdivision on right side and proclined upper and lower anterior teeth. Extra oral examination revealed potentially competent lips and incisal visibility of 3mm on rest, and canting of occlusion with a downward slope on right side. Cephalometric analysis revealed vertical growth pattern.

The overjet was 6mm and overbite was 4mm with a lower midline deviation towards left side by 3mm. On smiling gums were visible on both the sides. On the basis of diagnosis it was planned to intrude upper right quadrant.

**Treatment progress**

After extraction of upper $I^{st}$ premolars, lower $I^{st}$ premolar on right side and second premolar on left side, treatment began by bonding both arches with MBT 0.022 X 0.028 prescription. Asymmetric bracket placement was done. Initial leveling and aligning was accomplished in 4 months with 0.014'' and 0.018'' round nickel titanium wires followed by 0.017'' X 0.02''5-in rectangular nickel titanium wires and then followed by 0.019'' X 0.025'' stainless steel working wire.Anchorage control was done by transpalatal arch. Initially, two 8 mm mini implants with a diameter of 1.2mm were implanted on the upper right quadrant between upper right lateral incisor and canine and upper right second premolar and first molar. The intrusion was performed using elastic chain and force of 200g/f was applied. Elastic chains were changed every month. Intrusion of the upper right quadrant took approximately 6 months.Retraction of anteriors were done using sliding mechanics – with elastic chain. All the biomechanics described were taken care of. After achieving treatment goals vacuum formed retainers were given.

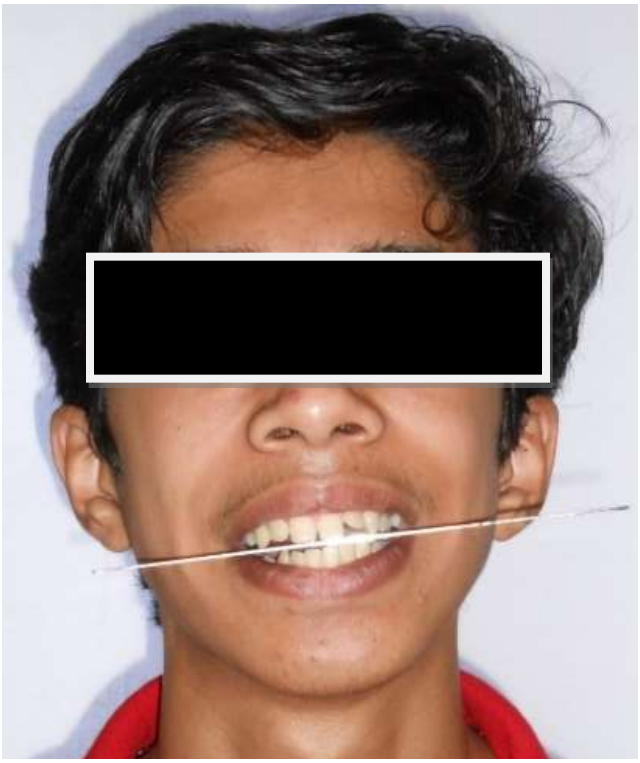

**Figure 3:-** ( Pre-treatment extra oral and intra oral photographs showing canting).

**Figure 4:-** (photographs showing implants placement and biomechanics).

**Figure 5:-** (photograph showing post treatment canting correction immediately and after 6 months of retension).

## Conclusion:-

Occlusal canting was considered a great challenge before advent of TADS. With traditional methods the treatment was done with limited scope of correction and unavoidable side effects. For moderate to severe cases orthognathic surgeries had to be performed. But with use of TADS these cases can be treated satisfactorily with minimum side effects. A good knowledge of biomechanics combined with correct diagnosis will result in desired treatment outcomes .

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