Frontiers in Health Informatics
ISSN-Online: 2676-7104
www.healthinformaticsjournal.com
2024; Vol 13: Issue 3
Open Access

Retraction With Teardrop Loop For Treatment Of Severely Proclined Anterior Teeth – A Case Report

Dr. Priyadarshini .S , Devaki P R
[1]Senior lecturer Department of orthodontics and dentofacial orthopedics, Sree Balaji dental college and hospital Bharath university of higher education and research
[2] Professor , dept of physiology , Sree balaji medical college and hospital Bharath university of higher education and research

Cite this paper as:Priyadarshini .S , Devaki P R (2024) Retraction With Teardrop Loop For Treatment Of Severely Proclined Anterior Teeth – A Case Report . *Frontiers in Health Informatics, 13* (3), 10408-10415

Introduction

Orthodontic treatment requires proper diagnosis and treatment planning. In majority of cases with proclination and crowding extraction is needed. Space closure in such cases can be either by sliding mechanics and loop mechanics. There are various types of loops in orthodontics. In this case , retraction of severely proclined anteriors was achieved with the help of tear drop loop.

Case report

A 16 year old male patient reported with a chief complaint of forwardly placed upper front teeth and inability to close the lips. He had no significant prenatal, postnatal and medical history. Patient had tongue thrusing habit.

Extra oral examination revealed a convex profile with acute nasolabial angle,retruted chin with posterior divergence and incompetent lips.

FRONTAL VIEW

FRONTAL - SMILE

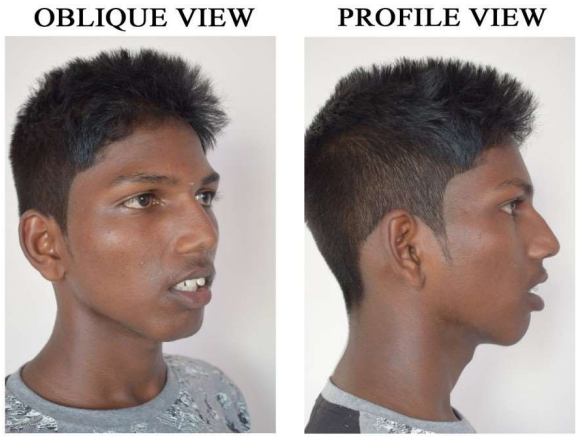

Figure 1- extra oral photographs

Intra oral examination reveals u shaped maxillary and mandibular arch with class 1 molars and canine with class 2 incisor relation with proclination in upper anteriors with very mild spacing and crowding in lower anterior region with an overjet of 8mm and overbite of 4mm

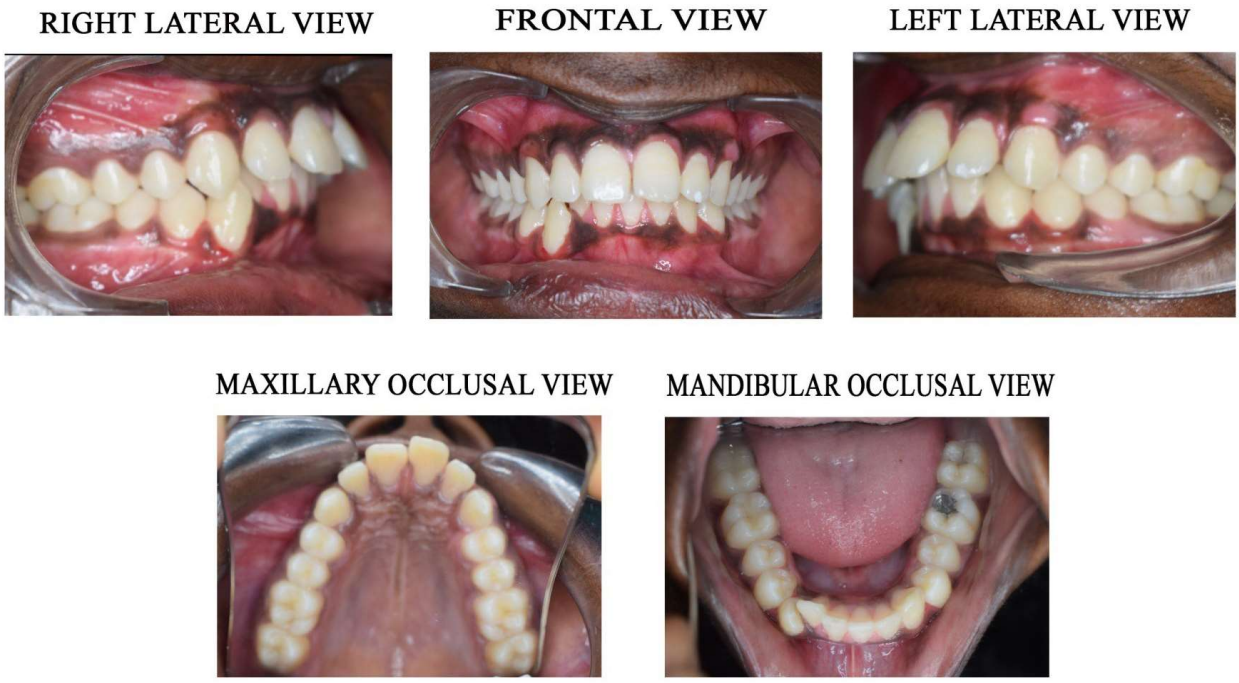

Figure 2- intraoral photographs

On radiographic examination opg reveals a total number of 32 teeth with unerupted 3rd molars with normal lamina dura and interdental crestal bones and no other abnormalities were detected.
Cephalometric examination reveals class II skeletal base with orthognathic maxilla, retrognathic mandible with an average growth pattern , proclined upper and lower anteriors with protrusive lips.
On overall synthesis from the records , the case is diagnosed as a case of angles class 1 malocclusion on a class II skeletal base with orthognathic maxilla and retrognathic mandible with average growth pattern , proclination and mild spacing in upper anteriors and crowding in lower anteriors with overjet of 8mm and overbite of 4mm with protrusive lips.

Figure 3- OPG

Figure 4- Lateral cephalogram

Treatment plan –
The case was planned for fixed appliance theraphy with MBT prescription 0.22 slot
Extraction of all 4's followed by

- Initial levelling and aligning
- Retraction using tear drop loop and space closure
- Finishing and detailing
- Retention.
- Fixed tongue crib was administerd at the beginning of the treatment

The wire sequence is as follows
0.014 NITI
0.016 NITI
0.016x0.022 NITI
0.107x0.025 NITI
0.17x0.25SS
0.19x0.025SS
0.014SS

Treatment progress

Figure 5- Initial wires

Following initial levelling and aligning , retraction was carried out using tear drop loop.

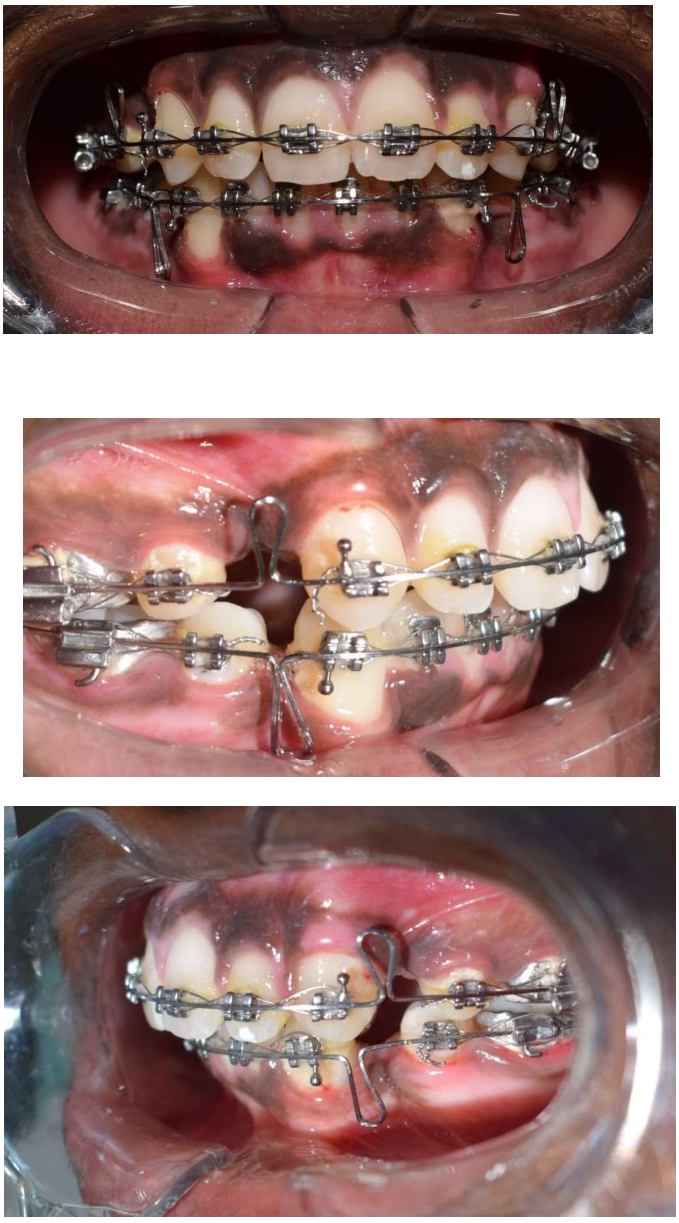

Figure 6- tear drop loop for retraction

After 6 months of retraction using , frictionless loop mechanics , a significant amount of retraction occurred and significant changes were noted.
By the end of 15 months , retraction phase was completed and finishing and detailing was started.
At the end of 16 months , the case was finished with sufficient amount of retraction with a significant change in extraoral profile, reduction in over incisor exposure , class 1 molar and canine relation with an ideal overjet and overbite.

Figure 7- finishing and detailing

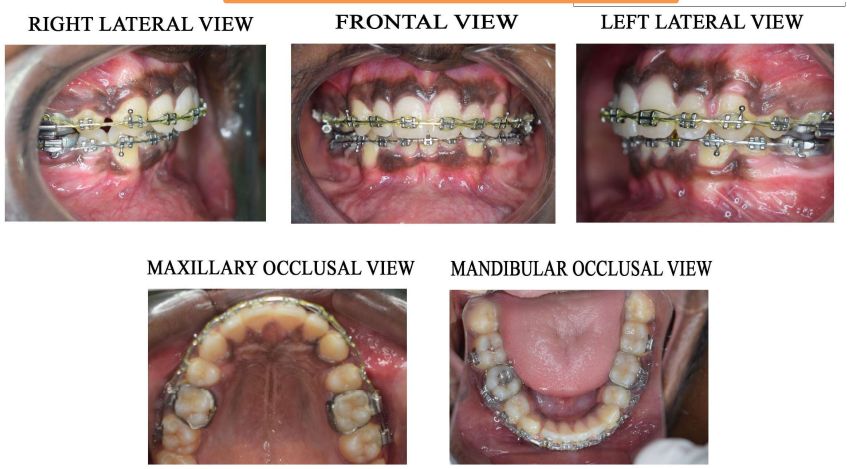

Figure 10-Comparison of preop and postop op

Discussion

In orthodontics, friction is a major drawback that retards the tooth movement. Retraction can be carried out by sliding mechanics and loop mechanics. The major drawback of sliding mechanics is friction whereas in loop mechanics , tooth movement happens without friction. Thus frictionless tooth movement can be readily achieved using loops. In this case , the retraction was carried out using Tear drop loop given by RG.Alexander. the loop is preactivated and placed .

Regular activation was done every 4 weeks by pulling the loop distally to open the loop and sinching it posteriorly.

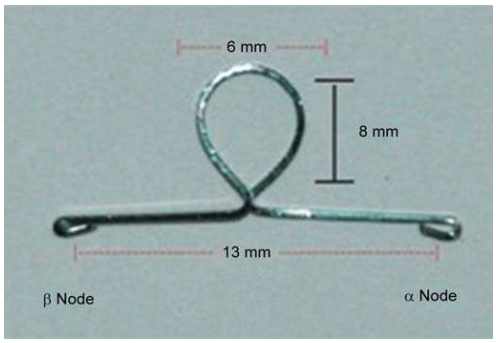

Figure 10- Tear drop loop

Conclusion.

Thus with proper treatment planning , loop mechanics can be used in orthodontics thus aiding in a frictionless tooth movement and achieving the desired results. It has been noted in the past that many of the loops have disappeared since many clinicians forgets their importance. Thus this study imposes on the importance of loop mechanics in orthodontic practice.

References

1. Nanda R. St. Louis: Elsevier Saunders; 2005. Biomechanics and Esthetic Strategies in Clinical Orthodontics. [Google Scholar]
2. Yang WS, Kim BH, Kim YH. A study of the regional load deflection rate of multiloop edgewise arch wire. *Angle Orthod.* 2001;71(2):103–9. [PubMed] [Google Scholar]

3. C J Burstone K Choy The biomechanical foundation of clinical orthodonticsQuintessence Publishing Company2015580
4. RHW Strang A Text-Rook of Orthodontia.43194317491
5. F Uribe R Nanda Treatment of Class II, Division 2 malocclusion in adults: biomechanical considerationsJ Clin Orthod20033711599606
6. Matsui S, Otsuka Y, Kobayashi S, Ogawa S, Kanegae H. Time-saving closing loops for anterior retraction. J ClinOrthod 2002;36(1):38-41
7. Burstone. The segmented arch approach to space closure. Am J Orthod Dentofacial Orthop.1982; 82(5):361-78
8. Faulkner Lipsett, Rayes Habastock. Use of vertical retraction loops in retraction system. Am J Orthod Dentofacial Orthop.199; 328-36