ISSN: 2581-5989
PubMed - National Library of Medicine - ID: 101738774

International Journal of Dental Science and Innovative Research (IJDSIR)

IJDSIR : Dental Publication Service

Available Online at: www.ijdsir.com

Volume – 6, Issue – 3, May - 2023, Page No. : 180 – 185

Longstanding Bilateral Chronic Temporomandibular Joint Dislocation - A Modified Closed Reduction Technique.

[1]Dr. M.R. Haranadha Reddy, MDS, Professor

[2]Dr. Madhuvani Kare, MDS

[3]Dr. Siri Sripada, MDS

[4]Dr. Lavanya, MDS

Corresponding Author: Dr. Madhuvani Kare

Citation of this Article: Dr. M.R. Haranadha Reddy, Dr. Madhuvani Kare, Dr. Siri Sripada, Dr. Lavanya, "Longstanding Bilateral Chronic Temporomandibular Joint Dislocation - A Modified Closed Reduction Technique", IJDSIR- May - 2023, Volume – 6, Issue - 3, P. No. 180 – 185.

Type of Publication: Original Research Article

Conflicts of Interest: Nil

Abstract

A dislocation is a condition in which a joint is displaced from its articulations, by an excessive movement of the condyle beyond its articulations, with complete sepa ration of the articular surfaces and fixation in that position.

This case report presents a case of bilateral chronic long standing TMJ dislocation since 2 months. Following several unsuccessful attempts of manual reduction, the patient was managed conservatively by using a rubber posterior bite block and application of elastic traction which reduced the dislocated condyles into the glenoid fossa satisfactorily in 2–3 weeks. Surgical management of TMJ dislocation may not always be feasible hence; conservative approaches should be attempted initially & more radical treatment should be used after the failure of the conservative methods.

Keywords: posterior rubber bite block, elastic traction, longstanding dislocation

Introduction

A temporomandibular joint dislocation is a condition in which the joint is displaced from its articulations and the patient experiences difficulty to return the condyle to its initial position and may require external manipulation [1, 2].

Chronic persistent dislocation can be defined [3] as an acute dislocation left untreated for 72 hours or more, and if the situation persists for more than a month, it is labelled long-standing or protracted TMJ dislocation [5]. Management of the dislocated condyles can be done using conservative or surgical methods.

Case report

A 29-year-old female reported to us with a chief complaint of inability to close mouth and chew food since two months [Figure -1] following a road traffic

accident where she had an impact to the right side of the face. Clinical examination revealed pre auricular hollow, posterior gagging of teeth bilaterally and anterior open bite [Figure-2].

Ortho panto mogram revealed bilateral TMJ dislocation representing a type III dislocation [Akinbami classific ation] [Figure -3].

Manual reduction by Hippocrates maneuver was attempted initially under LA and later under conscious sedation which were unsuccessful and the patient was counselled for conservative management using a rubber posterior bite block and elastic traction.

After receiving consent from patient, arch bar fixation was done. A Rubber posterior bite block was placed bilaterally between the upper and lower molars & vertical elastic tractions were placed bilaterally [Figure-4 a, b] and patient was periodically reviewed. We noticed a reduction in the anterior open bite, on day 2 which was 6mm. Elastic traction was increased and the patient was recalled after three days.

On day 5 the open bite was 1mm and the elastics were changed to class III elastics [Figure-5a, b,6]. On day 7 follow up complete reduction in the open bite was seen [Figure-7] and OPG revealed a reduction of condyles into the glenoid fossa [Figure-8].

Intermaxillary fixation was done bilaterally and elastic traction was added [Figure-9]. The patient was advised to massage the masseters and apply hot fomentation over the TMJ region for 1 week.

At the 2nd week follow up a TMJ CT scan was advised and it revealed complete reduction of the condylar heads in the glenoid fossa with a normal disc position [Figure-10]. Minimal elastic traction was applied bilaterally to prevent excessive opening of the jaw and the patient was recalled after 1 week. On 3rd week follow up the patient had mouth opening of about 15 mm [Figure-11]. Elastic traction was removed and the patient was recalled after 3 weeks for follow up.

On the follow up visit the patient had a mouth opening of about 30 mm and was comfortably doing all the movements. Arch bar removal was done and the patient was advised oral hygiene Maintenance [Figure-12].

Discussion

A dislocation of the TMJ is defined as the dislodgment of the head of the condyle from its normal position in the glenoid fossa [5].

The incidence of dislocation of the TMJ is around 3% of all the reported dislocated joints.[7].

Dislocation of the condyle if left untreated for a longer period of time results in muscle spasm, fibrotic changes and soft tissue in-growth into the glenoid fossa making the reduction of the condyles difficult.[6].

The etio patho genesis of TMJ dislocation is multi factorial and includes [2,4] altered structural components and the predisposing factors may include systemic diseases, Use of phenothiazines or metoclo pramide [extra pyramidal effects of their use], Iatrogenic factors, trauma etc.

The signs and symptoms of the bilateral dislocation usually include inability to close the mouth, pre-auricular depression, gagging of the posterior teeth, anterior open bite, and the diagnosis is usually con firmed radiographically.

Akinbami [5], classified dislocation based on relationship between the head of the condyle and the articular eminence as:

- Type I: The head of the condyle is present directly below the tip of the eminence
- Type II: The head of the condyle is located in front of the tip of the eminence
- Type III: The head of the condyle is located high up in front of the base of the eminence.

In our case, we standardized the dislocation as a TYPE-III dislocation according to Akinbami's [2011] classific ation.

Vidya rattan et. Al. has given an algorithm for the management of longstanding TMJ dislocation which can be treated by manual reduction under LA or sedation, use of elastic traction, indirect open reduction, direct open reduction. The authors also mentioned that for extra-long-standing cases [> 6 months] orthognathic surgical procedures should be considered [8].

In this case report, a conservative and noninvasive method of reduction was used for managing the bilateral dislocation. Here a rubber posterior bite block was used as a fulcrum posteriorly and the elastic traction applied acts as a power arm. Due to continuous traction by elastics, the joint ligaments and shortened muscles were stretched, repositioning the condyle in the glenoid fossa [9]. The rubber posterior bite block may also result in gliding of the condyles over the glenoid fossa and helps in the reduction of the dislocation and the elastic tractions were changed regularly during the treatment.

Results of this case report are in correlation with Ashutosh Harsh et. Al. [2013][10], Leeza Pradhan et. Al. [2015][9].

Ashutosh Harsh et. Al. [10] in his study used a rubber cork and elastics in 45-year-old patient with an extra-long-standing tempo romandi bular joint dislocation [>6 months].

Leeza Pradhan et. Al. [9] also reported a use of posterior acrylic bite block and elastic traction in a 29-year-old patient with a long-standing dislocation of 2 months.

If the conservative management does not yield satisfactory results then the management can be pro ceeded using more extensive surgical methods.

Conclusion

Hence from this case report, it can be concluded that this conservative method of management using rubber posterior bite block and elastic traction yielded positive results. Although the conservative modality of treatment is time taking and requires multiple follow-ups, this is a safe method with fewer risk factors that are associated with general anesthesia and the surgical procedure.

References

1. Caminiti MF, Weinberg S. Chronic mandibular dis location: the role of non-surgical and surgical treatment. J Can Dent Assoc. 1998; 64:484-91.

2. Akinbami BO. Evaluation of the mechanism and principles of management of temporomandibular joint dislocation. Systematic review of literature and a proposed new classification of temporomandibular joint dislocation. Head Face Med. 2011; 7:1-9LeClerc block ing procedure. Int J Oral Maxillofac Surg 26:92, 1997

3. Huang IY, Chen CM, Kao YH, Chen CM, Wu CW. Management of long-standing mandibular dislocation. Int J Oral Maxillofac Surg. 2011; 40:810-4.

4. Shakya S, Ongole R, Sumanth KN, Denny CE. Chronic bilateral dislocation of tempo romandibular joint. Kathmandu Univ Med J [KUMJ]. 2010; 8:251-6.

5. Akinbami BO [2011] Evaluation of the mechanism and principles of management of tempo romandi bular joint dislocation: Review of literature and a proposed new classification of tempo roman dibular joint dis location. Head Face Med. 7:10.

6. I-Y. Huang; C.-M. Chen; Y.-H. Kao; C.-M. Chen; C.-W. Wu [2011]. Management of long-standing mandibular dislocation., 40 [8], 0–814. doi: 10.1016/ j. ijom. 2011.02.031

7. Shaban SD, Sohal KS, Moshy JR. A Novel Technique for Surgical Reduction of Long-standing Tempo romandibular Joint Dislocation. Int J Head Neck Surg 2017;8[3]:107-111.

8. Vidya Rattan, Sachin Rai, Management of Long-standing Anteromedial Tempo romandi bular Joint Dislocation, Asian Journal of Oral and Maxillofacial Surgery, Volume 19, Issue 3,2007, Pages 155-159,

9. Pradhan L, Jais ani MR, Sagtani A, Win A. Con servative Management of Chronic TMJ Dislocation: An Old Technique Revived. J Maxillofac Oral Surg. 2015 Mar;14[Suppl 1]:267-70.

10. Harsh, A., Gupta, D.D., Purohit, P., & Sharma, A. [2014]. Management Of Long Standing Tmj Dislocation by Mechanical Method: A Case Report.

Figure 1: Extraoral picture of the patient

Figure 2: Anterior open bite of 15 mm

Figure 3: Pre-op OPG showing type III dislocation acc. to Akinbami classification

Figure 4a: Immediately after elastic placement.

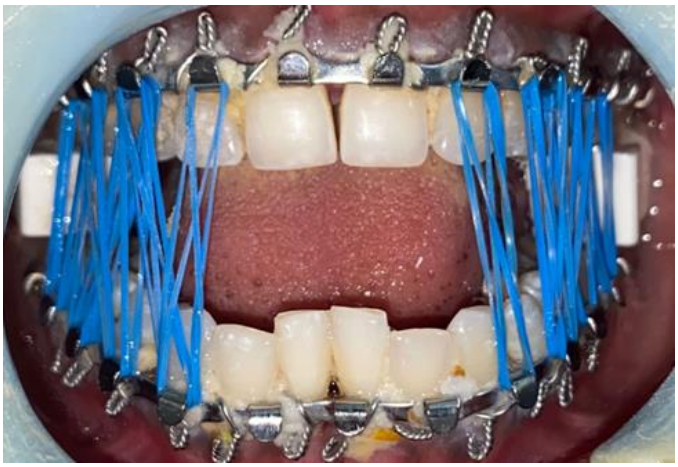

Figure 4b: Schematic representation of the vertical elastic traction (Red arrows representing downward movement of the condyle and upward movement of mandible anteriorly)

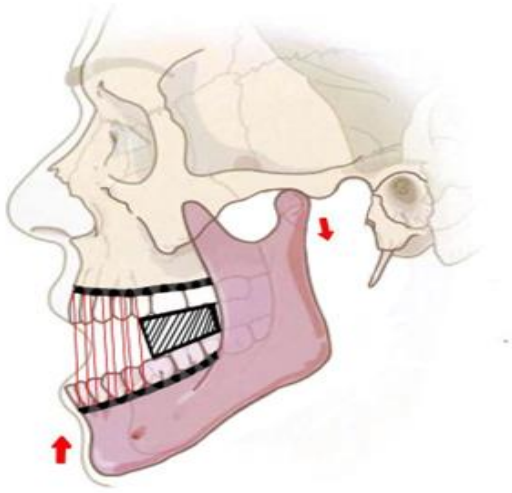

Figure 5a: Elastic traction changed to class III

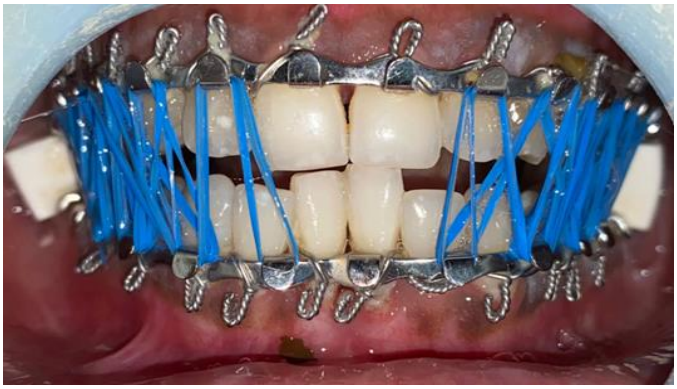

Figure 5b: Schematic representation of Elastic traction changed to class III (Red arrows representing backward movement of the condyle and mandible)

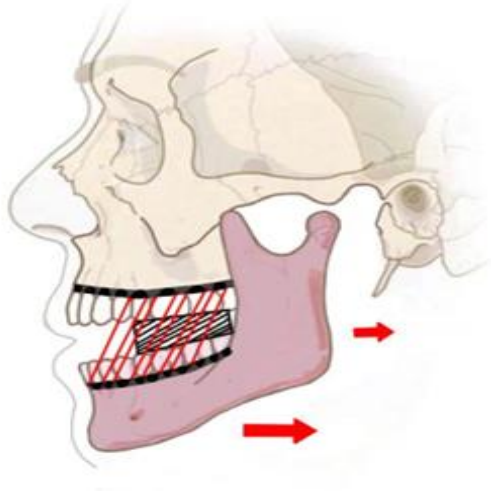

Figure 6: Schematic representation showing backward & upward movement of mandibular condyle into glenoid fossa (Red arrows representing backward movement of mandible & upward movement of the condyle into glenoid fossa)

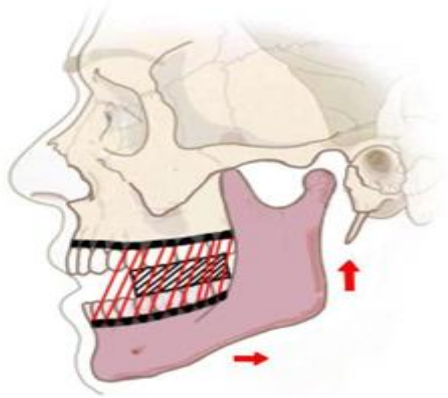

Figure 7: DAY 7 follow up

Figure 8: Day 7 OPG.

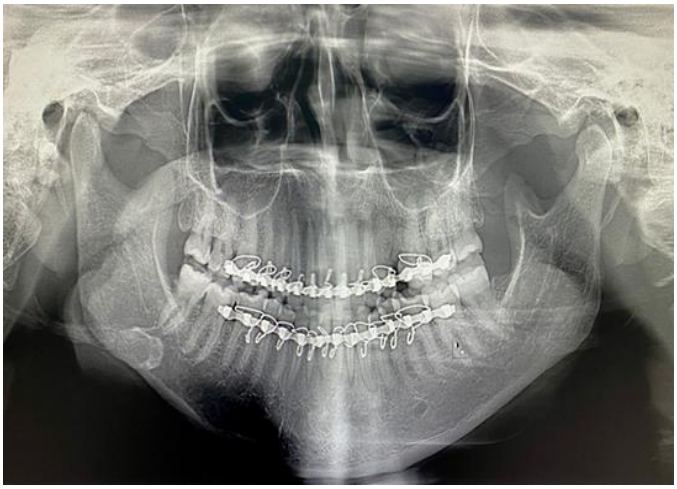

Figure 9: Schematic representation showing inter maxi llary fixation

Figure 10: TMJ 2D CT scan

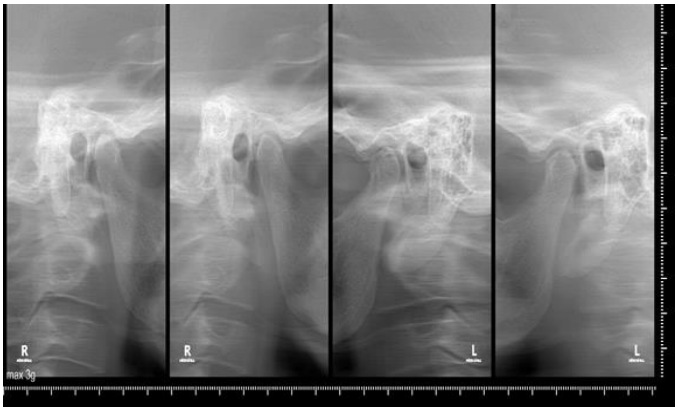

Figure 11: 3rd week follow up.

Figure 12: 2 months follow up.

Figure 13: 2 months Follow up OPG.