

Case Report

Conservative management of bilateral chronic protracted temporomandibular joint dislocation: a case report

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ABSTRACT

Temporomandibular joint (TMJ) dislocation is a condition in which the mandibular condyle is anteriorly displaced beyond the articular eminence, hence completely out of glenoid fossa which leaves the patient unable to close his/her mouth. Long standing TMJ dislocation persisting for more than a month are the most challenging to treat. The management varies widely, from closed reduction to complicated surgical procedures to reduce the dislocated condyle. Each case of dislocation presents with its own unique features. Since there are no standard rules or conventions for the ideal strategy in different circumstances till date, initial approach should be conservative, preserving surgical treatment for later if needed. This paper presents the experience of conservatively managing a case of long standing (one and half month old) TMJ dislocation under general anaesthesia with excellent outcome.

Keywords: TMJ dislocation, Mandibular condyle, Long standing

INTRODUCTION

Temporomandibular joint (TMJ) dislocation is a condition in which the mandibular condyle is displaced anteriorly beyond the articular eminence, hence completely out of glenoid fossa which leaves the patient unable to close his/her mouth. Although condyles can be dislocated anteriorly, posteriorly, cranially or caudally, most frequently encountered situation clinically is anterior dislocation. Once dislocation occurs, there is reflex contractions of the masticatory muscles due to abnormal positioning of the condyles, which makes it difficult for the condyles to go back to their resting position.¹

TMJ dislocation can be complete (luxation) or partial (subluxation), unilateral or bilateral, acute, chronic recurrent or chronic protracted.² Miller and Murphy placed predisposing factors into the following six

categories; birth related (congenital weakness of articular ligaments), iatrogenic (prolonged dental procedures, traumatic extractions, injudicious use of mouth prop, manipulation under general anesthesia, and improper use of laryngoscope or bronchoscope), trauma, drug induced (reported with use of reserpine and phenothiazines), physiologic (yawning, sneezing), and systemic (epilepsy, involuntary muscle contraction). Dislocation that present within 2 weeks is considered Acute and is reducible by Hippocratic maneuver. After 2 weeks, there will be spasm and shortening of the masseter and temporalis muscles and manual reduction becomes difficult to achieve. This leads to commencement of chronic protracted dislocation.³ Long standing TMJ dislocations that persists for more than a month are the most challenging to treat.

The management varies widely, from closed reduction to complicated surgical procedures to reduce the dislocated

condyle. Initial approach should be conservative, preserving surgical treatment for later if needed.

CASE REPORT

A 50 years old female patient reported to the Department of Oral and Maxillofacial Surgery, Punjab Government Dental College and Hospital, Amritsar, with chief complain of inability to close her mouth since one and half month (Figure 1). She also complained of difficulty in swallowing, speech and forward chin. She told in her history that the mouth remained opened after yawning. Medical history of the patient revealed that she is hypertensive and is under treatment. Apart from this no other relevant family history was given by the patient.



Figure 1: Pre-operative photograph of the patient with inability to close the mouth.

On extraoral examination the chin was displaced downward and forward with bilateral hollowness in the preauricular region anterior to the tragus. Tenderness was present in the same region. The patient was unable to close her mouth. The mandible seems to be in prognathic relationship to the maxilla. On Intraoral examination open bite was present with no occlusion. Orthopantomogram showed bilateral anterior dislocation of condyles in front of the articular eminences (Figure 2).



Figure 2: Orthopantomogram showed bilateral anterior dislocation of condyles in front of the articular eminences.

On the basis of history, clinical and radiographic examination, diagnosis of chronic bilateral TMJ dislocation was made.

First, we tried to reduce the dislocated condyles manually under local anaesthesia by giving auriculotemporal nerve block and local infiltration in the joint space bilaterally but we failed to reduce it. Then we decided to reduce the dislocation under general anaesthesia. After achieving proper general anaesthesia and muscle relaxation bimanual mandibular reduction was done in a downward, backward and upward direction followed by intermaxillary fixation using upper and lower Erich arch bar splints (Figure 3).



Figure 3: Intermaxillary fixation using upper and lower Erich arch bar splints.

Pressure bandage was given extra orally. Patient was also prescribed NSAIDs for the relief of pain for 7 days. Post-operatively orthopantomogram showed reduced condyles in the glenoid fossa (Figure 4). After two weeks IMF was removed and elastic traction was given for further one week to maintain the occlusal stability. Patient was followed at weekly intervals for 2 weeks. Then follow up was done at monthly interval for six months. Till date patient is having uneventful full recovery.



Figure 4: Post-operative orthopantomogram showing reduced condyles in glenoid fossa bilaterally.

DISCUSSION

TMJ dislocation occurs due to forward movement of the mandibular condyle, slipping underneath the articular

eminence and or displaced completely out of the glenoid fossa. Most frequently it's a result of extreme mouth opening or trauma.⁴ In our case the patient gave history of excessive mouth opening during yawning after which her jaw got stuck. On orthopantomogram condyles were placed in front of base of articular eminence bilaterally.

Based on relationship of the head of mandibular condyle to the articular eminence seen on clinico-radiological evaluation, Akinbami classified TMJ dislocation into three types (I-III). Type I: the head of condyle is directly below the tip of the eminence, type II: the head of the condyle is in front of the tip of the eminence and type III: the head of the condyle is high up in front of the base of the eminence.⁵

On the basis of clinico-radiologic examination the dislocation was labelled as type III in our patient. The aim of treatment should be directed towards returning the condyles to their original position and conservative methods should be the first line of choice.³ The management varies widely, from closed reduction to complicated surgical procedures to reduce the dislocated condyle. Early conservative reduction with or without local anaesthetics and sedatives is the best treatment. Reduction using this method can be achieved in most cases. As the duration of dislocation increases, the joint cavity fills with connective tissue, cartilaginous changes occur, adhesions develop between joint surfaces, and there is shortening of the masticatory muscles. Temporalis muscle fibrosis and impingement of the coronoid have also been reported to increase the difficulty of reduction. So, in long standing cases, manual reduction alone becomes difficult and may require intermaxillary fixation.³

A variety of conservative techniques have been described for reducing chronic dislocation such as injection of sclerosing solutions, autologous blood and botulinum toxin in joint space.⁶ In case of chronic protracted dislocation, elastic rubber traction with arch bars, ligature wires and intermaxillary fixation (IMF) are useful to achieve the reduction.⁷ Some of the conservative surgical treatments are the use of a bone hook passed over the sigmoid notch (Finck's technique) or inserted into bur holes placed at the angles, Bristow elevator placed through a temporal incision to apply posterior pressure to the anterior aspect of the condyle. Surgical methods include open reduction, condylar resection, increase or decrease in the height of the eminence, removal or repositioning of the meniscus, sometimes extended with coronoidectomy.³

In this article we presented a case of long standing chronic bilateral TMJ dislocation. The patient reported to our hospital after a period of one and half month with open bite and no occlusion. Unsuccessful manual reduction was tried under LA. Then the manual reduction was successfully done under general anaesthesia and good intercuspation of the posterior teeth was achieved.

In order to keep both the condyles in glenoid fossa, and to allow muscles of mastication to relax, IMF was done. This was achieved with upper lower Erich arch bar splinting and IMF was kept for 2 weeks. In our opinion the immobilization of TMJ with IMF has the advantage of not only maintaining the condyle in glenoid fossa but also allowed relaxation of muscle of mastication hence duration of symptoms significantly reduced.

Even if this kind of management require frequent follow-up, the method is safe as compared to inherent risks of surgery, especially in elderly patients who are not fit for surgical intervention and in patients having poor financial status. In the present case, as both the condyles were reduced to their normal position, we found this old conservative technique quite effective in the management of chronically dislocated condyles.

CONCLUSION

An immediate manual reduction of acute TMJ dislocation is the best treatment approach. Due to long standing nature of chronic protracted dislocation, manual reduction alone was not sufficient due to higher chances of relapse. So, IMF was done to stabilize the condyles in the glenoid fossa. As there are no standard rules or conventions for the ideal strategy in different circumstances till date, it is important to have knowledge of various conservative methods of reduction in our armamentarium and to apply them wherever feasible.

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