Case Report

Temperomandibular Joint "Stuck Disc" Phenomena: A Chronic Protracted Dislocation

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ABSTRACT

Among the disorders of the temperomandibular joint (TMJ), dislocation and subluxation are quite common. Dislocation refers to a condition, wherein an individual needs mechanical assistance to reposition the mandible and in subluxation, patient can self-reposition the mandible back to its anatomic location. Most dislocations are managed by manual reduction, whereas some require surgical intervention. Here, we present an unusual case of chronic protracted dislocation of the TMJ with stuck disc phenomena where the patient remained in a dislocated state for 6 months and was able to open and close the mouth.

Keywords: Anterior open bite dislocation, Stuck disc, Subluxation, Temperomandibular joint

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INTRODUCTION

Temperomandibular disorders commonly referred to as TMDs, is a collective term that comprises of disorders that involve the masticatory musculature, the temperomandibular joint (TMJ) and associated structures, or both. Among them, dislocation, subluxation, internal derangement are the commonly encountered.

Subluxation is the unilateral or bilateral positioning of the condyle anterior to the articular eminence, with repositioning to normal position by self-reducing activity of the patient.[1,2] Mandibular dislocation is defined as a non-reducing displacement of the mandibular condyle in front of and superior to the articular eminence, resulting in the inability to close the mouth.[1]

A majority of these cases are due to an incidence of acute trauma such as a blow to the jaw, wide mouth opening as in yawning dental treatment or surgical Intubation, etc.[3,4] These cases are usually treated by immediate bimanual reduction of the joint. However, a small percentage of these TMJ dislocations can go untreated resulting in the chronic state of recurrent dislocations along with several associated symptoms.

Chronic cases of dislocation are quite common, but incidences wherein mandible has been dislocated and the patient still being able to perform mouth opening is rare.

This case report presents an unusual case of chronic protracted dislocation with a stuck disc phenomena of the TMJ.

CASE REPORT

A 60-year-old female patient reported to the Department of Oral Medicine and Radiology, A.J. Institute of Dental Sciences, with the chief complaint of dull pain in the right and the left temporal region present since 6 months, which aggravated while chewing food. History of the presenting illness revealed an episode of bilateral swelling in the ear region; for which the patient had sought medical advice. The patient did not describe any incident indicative of trauma or dislocation.

Analgesic and anti-inflammatory drugs were given following which swelling had subsided, but the pain persisted. Medical history was non-contributory. Dental history reported an atraumatic extraction carried out 6 months prior to this reporting to the authors.

Extra oral clinical examination revealed pre-auricular depression (Figure 1) anterior to the tragus in the region of TMJ fossa on both right and left sides. The patient had a mouth opening of 24 mm with a dental Class III relation due to anterior cross bite (Figure 2). Restricted condylar movements were well appreciated anterior to the tragus with tenderness of the overlying area.

Intra oral examination revealed a poor oral hygiene, generalized attrition and several missing posterior teeth in both maxillary and mandibular arches.

Based on the clinical observations, a working provisional diagnosis of chronic protracted condylar dislocation was thought of.

Radiological investigations of orthopantomograph (OPG) and magnetic resonance imaging (MRI) were planned for right and left TMJ.

Figure 1: (a and b) Lateral profile view (right and left) of the patient, note preauricular depression

Figure 2: Profile view of the patient, with anterior cross when in occlusion

The OPG revealed bilateral and anteriorly placed mandibular condyles ahead of the articular eminence (Figure 3). TMJ open and closed views also revealed the same in both the opening and closing movements of the jaw (Figure 4).

The MRI revealed a stuck disc on the left TMJ with evidence of no disc function during opening and closing movements of the jaw (Figure 5). Disc on the right side was displaced medially showing an internal derangement.

Upon deliberation, a surgical line of treatment was decided to reduce the mandible to its normal position and the patient was referred to the Department of Oral and Maxillofacial Surgery at our institute.

The surgical team performed a bilateral eminectomy along with stripping of the lateral pterygoid muscles and functional recontouring of the condylar heads. Macroscopically the articular disc of the left TMJ was found to be calcified. Dental Class I occlusion was surgically achieved and the patient was put on intermaxillary fixation with arch bars and then on Gilmore's wiring for 15 days (Figure 6). At 6 months follow-up examination, the patient was symptom free (Figure 7a and b). At this visit, Orthopantomogram was taken, which showed the condyle in its normal position in the glenoid fossa (Figure 8).

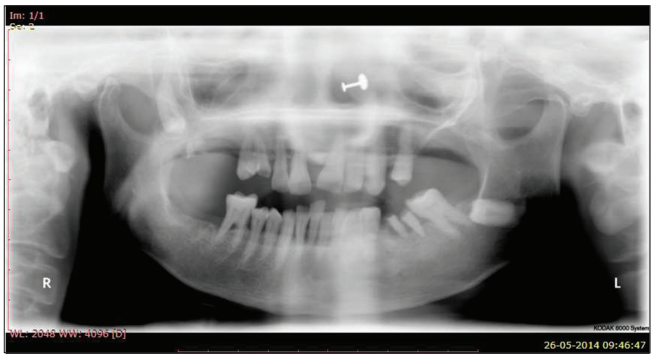

Figure 3: Orthopantomogram showing bilateral and anteriorly placed mandibular condyles ahead of the articular eminence

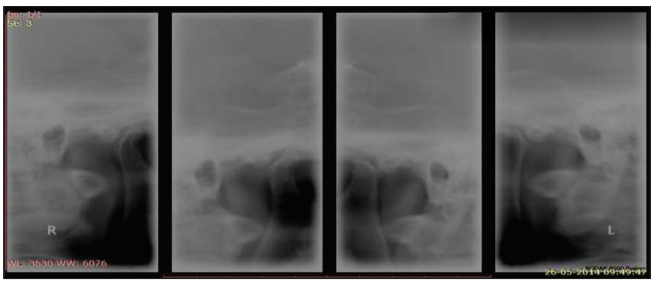

Figure 4: Temperomandibular joint open and closed view showing anteriorly placed mandibular condyles ahead of the articular eminence

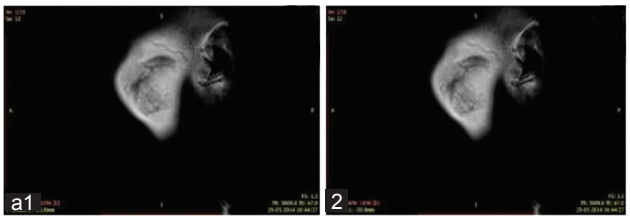

Figure 5: (a1 and 2) Open mouth view

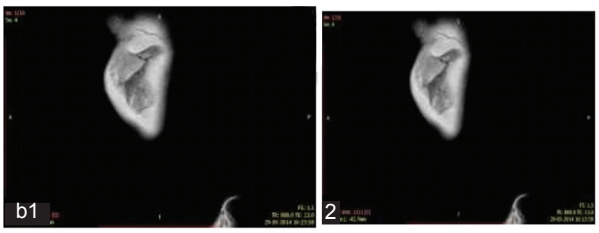

Figure 5: (b1 and 2) Closed mouth view

Figure 5: Magnetic resonance imaging showing a stuck disc during opening and closing movements of the jaw

Figure 6: Post-treatment orthopantomograph taken 25 days after surgery

DISCUSSION

The TMJ is a compound ginglymoathrodial joint whose articulating surfaces are the mandibular condyle, the mandibular fossa of the temporal bone and the articular disc, which serves as the third non-ossified bone.[5] The articular disc is composed of dense fibrous tissue and devoid of blood vessels, except in the extreme periphery, which is slightly innervated. In the sagittal plane, the disc may be divided into three regions based on the thickness, i.e. anterior, intermediate, and posterior zones. In the normal joint, movement of articular element is controlled by the attached ligaments and the attached muscles of mastication.[3] Excessive forces beyond the capacity of restrictive elements results in subluxation and dislocation of the movable elements of the joint.

Dislocation of the TMJ is basically dislodgement of the head of the condyle from its normal anatomic and functional position. It can be partial (subluxation or complete (luxation), bilateral or unilateral, acute or chronic recurrent dislocation. Furthermore, it can be anterio-medial, superior, medial, lateral or posterior dislocation.[6]

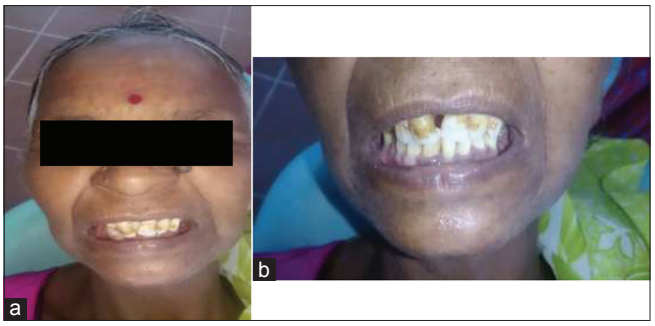

Figure 7: (a and b) Dental Class I occlusion achieved

Figure 8: Orthopantomograph taken 6 months after surgery

Contributing factors are altered structural components which include a lax capsule, weak ligaments, small/short and atrophic condyle, atrophic articular eminence, elongated articular eminence, hypoplastic zygomatic arch and small, poorly grooved glenoid fossa.[6]Among all, anterior dislocation is the most commonest to occur.

The newly proposed classification of TMJ dislocation by Akinbami, is based on the position of the head of the condyle to the articular eminence as seen on clinico-radiological evaluation.[7]

Classification of dislocation is categorized into three types (I-III).[7]
Type I: The head of the 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
Type III: The head of condyle is high up in front of the base of the eminence.

The case presented to the authors falls under the Type III. In our case, despite the head of the condyle being shifted from its normal position in the glenoid fossa, the patient was able to perform partial condylar translatory movements thus, being able to open the mouth which is an unusual occurrence in TMJ dislocation cases.

Since the dislocation had occurred 6 months ago there was no indication of using the conventional

manual reduction method, hence condyloplasty with eminectomy was planned.

Literature search as per our knowledge showed no report of such unusual chronic protracted dislocation of the TMJ.

CONCLUSION

TMJ dislocation is easily managed and completely treatable. It involves a simple manual reduction, but sometimes surgical intervention becomes necessary, especially when the conventional methods fail. Acute and chronic cases of dislocations are quite common. However, cases where in the patient is able to perform opening and closing movements of the jaw, highlights the uniqueness of this case.

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