INTRODUCTION

Dislocation of the temporomandibular joint (TMJ) is one of the earliest afflictions of the jaws to be described in literature dating as to times of Hippocrates.

TMJ dislocation comprises of 3% of all reported dislocated joints. TMJ dislocation can be categorized into three groups: acute, chronic, and longstanding.

Anterior dislocation has been reported to occur after opening the mouth wide such as when laughing, vomiting, taking a large bite, secondary to convulsions, and iatrogenic after dental procedures.

We report a case of a male patient with bilateral anterior TMJ dislocation of six months old post neurosurgical procedure.

CASE REPORT:

A 45-year-old male patient reported to the Department of Oral and Maxillofacial Surgery, IDS, Bhubaneswar with complaints of inability to bring the jaw backwards, slurred speech, and pain in both ears since six months.

The patient had a history of a road traffic accident 7 months ago in a hospital for which he underwent a neurosurgical procedure of decompression under general anesthesia. Post neurosurgery, he was unable to bring the mandible backwards to its original position.

The patient did not seek any medical or dental attention for the problem and remained as it is for a period of six months after which he reported to our department.
On evaluation the patient had a prognathic profile and non occlusion of teeth(Fig 1,2) and mandibular movement restriction.

Fig 1 Patient profile showing prognathic features and depression in the condylar region.

Fig 2 Intraoral examination revealed non occlusion of teeth and inability of patient to retract his jaws to its original functional position.

An Orthopantomogram (OPG) was advised which revealed bilateral anterior TMJ dislocation (Fig 3).
Traditional manual reduction under local anesthesia was performed but failed and the dislocation did not improve. Thus open reduction under general anesthesia was planned.

Naso endotracheal intubation general anesthesia was performed in the operating room and bilateral preauricular incision marking was given (Fig 4a,b).

Infiltration anaesthesia was administered with 2% lidocaine (1:100000 epinephrine) on the area of incision. The skin was cut open through the preauricular incision approach. The articular capsule was incised horizontally and upper part of the mandibular fossa and condyle exposed (Fig 5). The upper part of the condyles was incised post myotomy using rotary cutting instrument under irrigation of normal saline, and the remainder sharp edges trimmed (Fig 6a,6b). Both the operated areas were thoroughly irrigated with normal saline containing antibiotics and placement of bilateral suction drains were placed and subsequently sutured in a layered manner.

The post operative stay of patient was uneventful and on 5th post operative day patient was fixed with arch bar with intermaxillary elastics for 1 week. Patient post operatively was able to bring his jaw backward and could clench his teeth (Fig 7).

Post operative OPG showed incised mandibular condyles on both sides (Fig 8).
Fig 4a&b Intraoperative Bilateral preauricular skin markings

Fig 5 Intraoperative exposure of condyle

Fig 6aCondylectomy being performed
Fig 6b Resected Bilateral condyles

Fig 7 Post Operative photograph showing elimination of the anterior long standing dislocation
DISCUSSION:

In 1832, Sir Astley Cooper proposed the principles for diagnosis and treatment of dislocation and used the term complete dislocations and imperfect dislocation for luxation and subluxation respectively (4). Dislocation of TMJ occurs in up to 7% of people during their lifetime (5), and may occur in several directions such as forward, rear, upper, and outward. Gottlieb stated that long-standing dislocation of the jaw is often caused by slight injuries, such as from extraction, taking of impressions or mere inspection of the oral cavity, and may occur under general anaesthesia. Often the dislocation is not noticed, and the patient may not seek medical advice until weeks or months after the injury (6).

In most cases, dislocation of the jaw is extremely uncomfortable, particularly when it becomes fixed by muscle spasm or tension in the ligaments and joint capsule with the mouth open. This prevents masticatory function and causes pain, salivation and speech difficulties (7).

The aim of any surgical intervention of long-standing TMJ dislocation should be the following: (1) complete reduction, (2) restoration of adequate jaw movement, (3) minimal morbidity to intra- and periarticular tissue, and (4) minimizing the chance of recurrence (8).

Long standing dislocation or protracted dislocation is rarer (9) and surgery is the preferred method for reduction (10) if other methods fail.

Case reports advocating different techniques ranging from traction at different mandibular sites to direct joint exposure have been used to reduce the condyle. Orthognathic surgery or condylectomy have also been mentioned to achieve a functional occlusion where reduction was unattainable (11).

Prabhakara reduced a case of bilateral persistent anterior dislocation of the mandible with arch bars and anterior elastic traction (12).
Hammersley performed direct open reduction in two of three cases and advocated simultaneous detachment of lateral pterygoid insertion\(^{(13)}\).

Aquilina et al. used botulinum toxin A to reduce muscle spasm after reduction to prevent relapse\(^{(14)}\).

DENG et al. presented endoscopy-assisted reduction for a long-standing dislocation in 2007, which could be used only for dislocations of less than 4 weeks, and in some special conditions\(^{(15)}\).

According to the literature review, manual reduction may be possible even after 6 months, but dislocations of more than 6 months generally require complicated surgical procedures, such as condylectomy, condylotomy, myotomy and a TMJ prosthesis, or other methods to reduce the mandible to the normal relationship with the maxilla\(^{(16)}\).

For the surgical treatment of TMJ dislocation, various methods through which the clinician facilitates the condylar mobility of the TMJ or artificially places an obstacle to limit condylar mobility have been introduced. The eminectomy of surgical treatments was described by Myrhaug for the first time in 1951 and was later asserted by Irby\(^{(17)}\). It is one of the most universal treatments wherein the lower inclined path is made by cutting out the condylus positioned in the condylar mobility path; its prognosis are quite good, but radiological reexamination prior to surgery and careful attention during surgery are required since perforation on the cerebral ventricles may occur in case of pneumatization in the eminectomy process.

In 1883, Reidel performed the first condylectomy for the treatment of dislocation, and this procedure was subsequently advocated by Henny and Baldridge\(^{(18)}\).

The lateral pterygoid muscle myotomy by surgical methods for the dislocation of the TMJ was publicized by Boman for the first time in 1949. It was a method of removing the obstacle and limiting forward condylar gliding mobility by carrying out muscle myotomy and removal of joint disc simultaneously.

In our case, the dislocation was treated so that the TMJ can perform its normal functions by partially cutting out both sides of the mandibular condyle of the patient with dislocation of the TMJ and whose mandibular condyle went over the condylus, unable to return to its original position, although the dislocation was not recurrent. Post operative the patient is able to bring his jaw backwards and has no complains of pain or slurring of speech and a satisfactory result was obtained without recurrent findings or functional discrepancies.

References: