



## Case Report

# Postero-supero-lateral dislocation of condyle: A case report

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### ABSTRACT

Condylar dislocation involves a non- self limiting displacement of the condyle, outside of its functional position. The most common condylar dislocation is anterior to the articular eminence. There may be medial, lateral, posterior, intracranial dislocations. Condylar dislocations constitutes only 3% of all the dislocations of joint in the body. Dislocations along with a fracture is very rare. This is a case report reviewing a postero-supero-lateral dislocation of condyle into the external acoustic meatus and perforating it without corporation of other fractures.

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## 1. Introduction

Dislocation of mandibular condyle from glenoid fossa is a well documented problem in existing literature in oral and maxillofacial surgery. Since it was first reported by Robert in 1849 as a rare complication of injury to mandible, various authors across the globe have reported condylar dislocations in different planes with different perspectives<sup>1</sup>. Fracture dislocation of condyle in anteromedial direction due to lateral pterygoid pull is a common observation and is considered a protective mechanism preventing skull base perforation. Traumatic dislocation of an intact condyle is still uncommon. Even in this rarity, most of the cases reported present either antero-medial or superolateral dislocations with a very few cases of posterior dislocations. This report describes a case of a young man with postero-lateral dislocation of left mandible condyle secondary to traumatic event 10 days before consultation. This paper is aimed at discussing the aetiology of the condition, the nature of this unusual dislocation, clinical presentation and symptoms, radiographic imaging, and treatment accorded to the patient.

## 2. Case Report

A 27 years old male reported in O.P.D with the chief complaint of inability to open his mouth for the last 10 days. The patient had suffered injury to his chin due to fall from stairs around 10 days back. The patient remembered having fallen towards the left side of the face with loss of consciousness. Clinical examination revealed facial asymmetry with the mandibular jaw deviated to the right side (Figure 1). Marked trismus was reported with a maximum interincisal opening of 3 mm. A prominence was noted on right external auditory meatus with its perforation. Panoramic radiograph did not reveal any bony discontinuity. The CT Scan revealed a posterolateral dislocation of intact condyle into the external auditory meatus (Figure 2). The attempt to manually reduce the dislocation under Local Anesthesia was unsuccessful. Surgical intervention was then planned under General Anesthesia. Dislocated condyle was exposed via standard Alkayat-Bramley modification of pre-auricular incision. The condyle was then reduced to its physiologic position in the glenoid fossa (Figure 3). Maxillomandibular fixation was done for 1 week. Oral physiotherapy was regularly carried out for muscular guidance, prevention of ankylosis and restore mandibular movements. Post-operative CT scan revealed restoration

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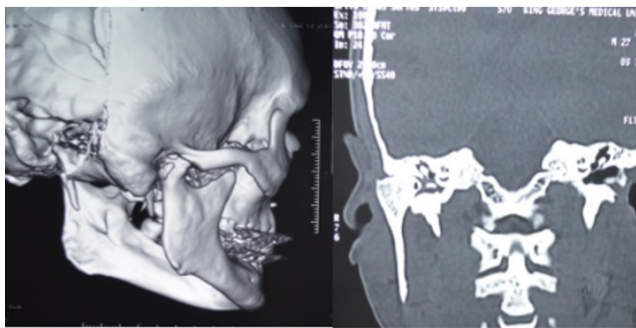
of physiologic position of condyle. Clinically, functional movements of mandible were restored to satisfactory level.(Figure 4).



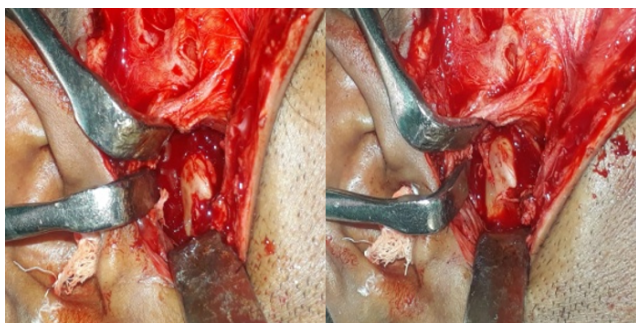
**Fig. 1:** Clinical presentation with facial asymmetry and deranged occlusion



**Fig. 4:** Post operative clinical presentation and CT scan



**Fig. 2:** CT scan showing posterior dislocation of condyle on right side



**Fig. 3:** Surgical procedure-reduction of dislocated condyle into anatomic position

### 3. Discussion

Displacement of intact condyle in the posterior direction is a rare entity unlike lateral or anterior dislocations, which has been extensively documented and classified in existing literature. Li et al.<sup>1,2</sup> explained the dynamics of dislocation by simulating the dislocation on a dried skull.

They concluded that, the factors considered essential to such an injury occurring are the size and the direction of applied force, the position of the jaw during impact (the mouth may be in a wide open position), and the anatomic features of the joint (joint capsule and pterygoid muscles may be flabby).

Owing to strong lateral pterygoid pull, anteromedial is widely considered to be a natural direction of displacement of a fractured condyle. This peculiar anatomy which can be simply described as a natural design to prevent damage to ear and skull base in case of traumatic events.

Akers et al.<sup>3</sup> in 1982 documented a case of posterior dislocation of mandibular condyle in a polytrauma patient which was subsequently treated non surgically by guiding the condyle back into glenoid fossa through external auditory canal. Akers considered anatomic features of post glenoid tubercle and external auditory canal, direction of traumatic force vector as well as edentulous stat of patient as main factors leading to this posterior displacement.

Antoniades<sup>4</sup> in 1992, reported a polytrauma case with bilateral subcondylar fracture in which left condylar fragment was found to be displaced into external auditory meatus. This paper also describes hearing loss and facial nerve injury as accompanying feature of such dislocation. Conservative management with satisfactory results with respect to mandibular movements was presented.

Vasconcelos et al.<sup>5</sup> in 2010 discussed various aspects of posterior dislocation of intact condyle due to trauma and sated that the clinical features mimic subcondylar fracture or superior dislocation of the mandible. Adequate imaging is required to diagnosis these injuries accurately. Conventional radiography shows the dislocation but it is not clear. CT should always be performed to assess the relationship of the condyle to other structures. Closed reduction is the first

choice of treatment.

In a contrast from abovementioned cases, Albili et al.<sup>6</sup> in 2017 presented a case of posterior dislocation of condyle in an 80 year old edentulous woman. Treatment modality included open reduction of the condyle and placement of two mitek suture to avoid ant redisplacement of condyle.

All the above mentioned cases also point out that edentulousness may also predispose mandibular condyle to posterior displacement due to overclosure of mouth and altered biomechanics.

Unlike the cases in above reports our patient was not completely edentulous and overclosure of mouth cannot be considered a factor here. Also on otolaryngologic examination, no hearing loss or facial nerve damage was reported like in that of Antoniades.

In our case we followed a similar management approach as described by the above case reports. Definitive diagnosis was established only after 3D CT visualization.

As postulated by Vasconsoles et al,<sup>5</sup> we also attempted to treat the patient using closed reduction first. However, we were unsuccessful in reducing it by closed reduction which can be attributed to a long time span since trauma leading to muscle spasm and fibrosis in surrounding soft tissues.

Upon exposure of the condyle through pre-auricular approach, the disc was found to be posteriorly displaced into external auditory canal. No damage to the articular disc was noted. High condylar shaving was done by removing articular surface of condyle to facilitate reduction. It was then maneuvered back onto articular disc in glenoid fossa using dental occlusion as guidance. Intermaxillary fixation was done in order to prevent re dislocation of condyle.

Post-operative results were found to be satisfactory functionally and radiographically.

Over the course of follow up, the patient was kept on rigorous oral physiotherapy to prevent any further complication and for maintenance of function.

#### 4. Conclusion

Posterior condylar dislocation should be considered to be a possibility in mandibular trauma patient albeit rare. Treatment protocol includes timely diagnosis by clinical examination and radiographs and closed reduction in early reported cases. Surgical intervention may be necessary in

cases which report late for consultation.

#### 5. Source of Funding

None.

#### 6. Conflict of Interest

The authors declare no conflict of interest.

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