

A Missed Case of Trauma- The Radiologists Perspective

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ABSTRACT

Every person subject to the ordinary risks of everyday life is a potential candidate for trauma to the body. In some instances, these traumatic injuries or their manifestations may go unnoticed and become evident later on in life. Dealing with maxillofacial trauma is, however different from dealing with similar trauma in other parts of the body. The major concern about the trauma of the body such as the limbs, abdomen, thorax etc. is related to the restoration of function. In facial trauma, on the other hand, restoration of aesthetics along with the function is of primary concern; otherwise, a minor facial injury if not treated adequately, can lead to a serious problem owing to the psychological impact. It is also essential to realize that properly executed initial repair of the facial injury often gives better results than multiple secondary procedures. Inadequate primary treatment may result in several deformities, which may be difficult to treat later on without good results. This paper highlights one such case wherein the trauma to the maxillofacial skeleton was undiagnosed and eventually led to aesthetic and functional concerns for the patient. It further also underlines the important role of the oral and maxillofacial radiologist in identifying and differentiating various bony pathologies with the aid of appropriate radiographic techniques.

Keywords: Case Report, Trauma, Fracture, Condyle, Malunion.

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INTRODUCTION

Many authors state fractures of the mandibular condyle to be the commonest type of fracture of the mandible.¹ The majority of them are not caused by direct trauma but are the result of indirect forces transmitted to the condyle from a blow elsewhere. Consequently, these are the fractures which are most commonly missed.² On various occasions, a hit to chin may lead to fracture of condyle due to the morphology of neck of the condyle. This is due to the protective anatomy of the stomatognathic system. Poorly managed condylar fractures can result in numerous chronic problems for the patient. These include occlusion derangements and deviation of the jaw. Ankylosis and pain in the temporomandibular joint can develop and diminished mouth opening can persist. Muscle spasms, facial asymmetry and osteonecrosis, have also been reported.³ Therefore, timely and suitable treatment of mandibular condylar fractures is indispensable for better results.

Common causes of mandibular fractures include assault, motor vehicle accidents or falls, especially onto the chin which can lead to condylar fractures of the neck region.⁴

With this paper, we aim to report one such case in which the results of trauma were evident several years after the injury. We present this case from a radiologist's perspective and highlight the importance of appropriate investigations in trauma cases.

CASE REPORT

A 22-year-old female patient reported to the Department of Oral Medicine and Radiology with the chief complaint of facial asymmetry and shift of the jaws during mouth opening.

The patient was relatively asymptomatic before 5 years after which she experienced a gradual increase in the fullness

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over the left side of her face leading to facial asymmetry. She then experienced a gradually increasing shift of the mandible towards the left on the mouth opening.

A detailed history of the patient provided us with the knowledge of a previous history of trauma after a minor fall from a two-wheeler 10-12 years following which the patient had only received primary medical care and no other investigations or treatments were deemed necessary.

The patient was well-built and well-nourished. On extraoral examination, the facial asymmetry with increase in fullness of face on the left side was noticed, extending superior-inferiorly from the infraorbital margin to the inferior border of the mandible and anterior-posteriorly from near the corner of the mouth to the pre-tragus region (Figure 1-3).

Deflection of the mandible to the left was noticed on mouth opening (Figure 4).

Angle's class I malocclusion noted (Figure 5).

The radiographic investigation of OPG revealed a deranged morphology of the condyle on the left side. An area of increased radiopacity was noted along the mandibular left condylar region. Reduction in the neck of the condyle on the left side



Figure 1: Extraoral Examination



Figure 2: Right lateral view



Figure 3: Left lateral view



Figure 4: Deflection of mandible

compared to the right side was noticed with subsequent reduction in the ramal height. A deep antegonial notch is noted along the left side (Figure 6).

The transorbital view showed two globular protuberances—one within the glenoid fossa and one right below the level of the articular eminence with a deep notch between the two protuberances. These findings can be suggestive of a bifid condyle which is an anatomical variation. However, when considering a bifid condyle, both heads should be placed



Figure 5: Occlusion



Figure 6: Panoramic radiograph



Figure 7: Transorbital view



Figure 8: CBCT

The patient has advised a transorbital view.

within the glenoid fossa. Whereas, in this case, the medial head is placed well outside the mandibular fossa and hence the possibility of a bifid condyle is ruled out (Figure 7).

To further confirm the findings of 2-D radiographic techniques and to study the joint space and the morphology of the condyle, a CBCT scan was advised.

CBCT of the patient depicted an altered morphology of the condylar head with two protuberances, one of which is located within the glenoid fossa and the medial head located outside it (Figure 8,9).

Considering the clinical and radiographical findings, a diagnosis of malunion of fractured condyle has been made.

The patient was further referred to the Department of Oral and Maxillofacial Surgery where further treatment of the patient will be planned.

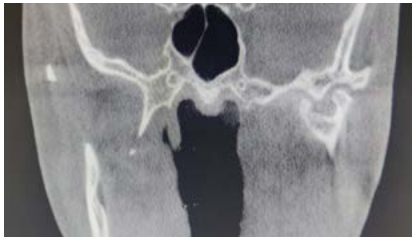


Figure 9: CBCT



Figure 10: Bifid condyle

DISCUSSION

Fractures of the mandibular condyle are frequently encountered in dental practice. It had a multifactorial aetiology and more often than not caused by indirect trauma to the region.⁵ This is one of the major reasons that it often remains undiagnosed. It is hence imperative to treat all patients with trauma- however minor, with utmost care and concern. The role of the oral radiologist in diagnosing fractures and differentiating them from other pathologies of the maxillofacial skeleton has been highlighted in this very case. The radiological findings, in this case, were indicative of a bifid condyle if not looked at with a keen eye. However, a bifid condyle will give a typical heart-shaped outline and the mandibular fossa remodels to accommodate the altered condylar morphology (Figure 10).⁶

However, the present case shows a distinct radiopacity in the condylar region on the OPG and the CBCT of the patient depicts that the two heads are not within the glenoid fossa, thereby enabling the Oral radiologist to deduce the diagnosis.

A case report by Cowan and Ferguson described an incidental finding of a bifid condyle wherein the left condyle had a notch anteriorly, giving it a dumbbell shape, whilst its maximum transverse dimension was similar to the normal right side.⁷

A review conducted by Fun Chee Loh, and Jinn Fei Yeo wherein they assessed a total of 15 cases of the bifid condyle, showed that bifidity of the condyle is an incidental finding with over 67% of patients being asymptomatic. Very frequently, the glenoid fossa remodels to accommodate the two condylar heads. Among the 15 cases reviewed, only one presented a history of trauma on the affected side.⁸

Another case report by Ramos *et al* presented a patient with a bifid condyle without a history of trauma or fracture to

the mandible at any point in time.⁹

However, a few authors believe that the aetiology of bifid condyle can be either due to the persistence of septa during the developmental stages or less commonly also due to trauma during childhood.

The present case, however, does not show any arthritic changes or remodeling of the glenoid fossa. The patient also presented with gradually progressing symptoms, which led us to our final diagnosis.

It is also important to note that untreated condylar fractures tend to manifest in the later stages of life. It is here when the patients tend to notice changes in their appearances and report to the specialist for the same.

The present case also highlights negligence on the parent's part wherein they sought a doctor's counsel only when a change in appearance was appreciated. It shows how, as a society, we focus more on external beauty than an individual's overall health.

It is the moral responsibility of the medical professional to deal with all cases of trauma efficiently and thoroughly. The referral to an oral and maxillofacial diagnostician should be a mandate to rule out any injury- major or minor.

CONFLICT OF INTEREST

None

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