

Case Report

Mandibular Fractures: Right Parasymphysis and Left Angle: A Case Report

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ABSTRACT:

Mandibular fractures are among the most frequent injuries to the face and are frequently brought on by trauma from, falls, and auto accidents. This patient's diagnosis of a left angle fracture of the mandible and a right parasymphysis fracture is a classic example of contralateral mandibular fractures. Mastication, speech, and occlusion can all be impacted by these injuries, which can impair both function and appearance. For an accurate diagnosis, radiographic evaluation with orthopantomograms (OPG). 17-year-old boy presented with pain, swelling, and difficulty in jaw movement following a fall. Clinical and radiographic evaluation revealed fractures in the right Parasymphysis and left angle of the mandible. He was treated with open reduction and internal fixation using plates, along with intermaxillary fixation for stabilization.¹

Keywords: Right Parasymphysis, Left Angle of Mandible, Jawtrauma, Facial Bone Injury, OPG, Open Reduction, Rigid Fixation, Maxillofacial Surgery, Occlusion, Contralateral Fractures

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INTRODUCTION

In maxillofacial trauma, mandibular fractures are common and account for a significant portion of facial bone damage. The mandible is especially susceptible to external stresses because of its prominent anatomical position and horseshoe-shaped form^[1]. The body, parasymphysis, symphysis, angle, and condyle are the most often fractured areas. This type of contralateral mandibular fracture, which frequently results from a powerful blow or impact that transfers force across the mandible, involves both the right parasymphysis and the left angle of the mandible. A parasymphysis fracture is a break in the mandibular anterior segment, usually between the canine and the midline^[1,2]. It can cause soft tissue injuries such hematomas or lacerations, anterior teeth displacement, and loss of occlusal contact. The third molar region may be affected by a mandibular angle fracture, which is seen where the body and ramus meet. This fracture frequently causes posterior malocclusion^[3]. These kinds of injuries, which

include falls, traffic accidents, interpersonal aggression, and sports injuries, are commonly linked to extreme trauma. Malocclusion, soreness, swelling, step deformity, limited mouth opening, and mobility of fractured segments are some of the symptoms that patients may exhibit^[3,4]. Using imaging methods such as cone-beam computed tomography (CBCT) and panoramic radiographs (OPG), which offer a thorough picture of the fracture pattern, and clinical examination, the diagnosis is verified.^[5]

CASE REPORT

A 17-year-old male patient visited the Department of Oral Medicine and Radiology at St. Joseph Dental College, Eluru, with complaints of pain, facial swelling, and difficulty in chewing and speaking after a road traffic accident. The patient reported that he had fallen from a two-wheeler two days ago and was not wearing a helmet at the time of the accident. He had bleeding from the mouth immediately after the incident and developed increasing pain and swelling

in the lower jaw region. On general examination, the patient was conscious, alert, and oriented. There was visible swelling over the lower part of the face, with slight bruising. No other external injuries were noted. On extraoral palpation, tenderness and swelling were observed on the lower right side of the face near the chin region, and another tender area was present on the left angle of the mandible. The face also showed mild asymmetry due to the swelling. Intraorally, there was pain, swelling, and mobility of teeth in the lower front region. A step deformity was felt on the **right** parasymphysis region (between the lower right lateral incisor and canine). There was also tenderness and a step deformity at the left angle of the mandible, just

behind the third molar area. The patient had difficulty in mouth opening and complained of his teeth not fitting together properly (malocclusion). To evaluate the injuries, a panoramic radiograph (OPG) was taken. It showed a clear fracture line in the right parasymphysis region of the mandible and another fracture line at the left angle. For better visualization, a CBCT (Cone Beam Computed Tomography) scan was performed, which confirmed the presence and extent of both fractures. The scans revealed mild displacement of the fractured segments. Based on the clinical findings and imaging, the final diagnosis was contralateral mandibular fractures involving the right parasymphysis and the left angle of the mandible.



Figure 1



Figure 2



Figure 3

DISCUSSION

The exposed and prominent position of the lower jaw makes mandibular fractures one of the most common face injuries. As a robust yet delicate bone, the

mandible is prone to breaking at its weaker structural areas when traumatized. A left angle fracture of the jaw and a right parasymphysis fracture were sustained by the patient in this instance. Usually, high-impact

trauma from falls, auto accidents, or sports-related injuries results in this bilateral pattern of fractures. Since the mandible is shaped like a "U," force applied to part of it frequently causes a counter-fracture on the other side. The mandibular body, angle, condyle, and parasymphysis are the most often affected areas. The parasymphysis region is regarded as a common fracture site and is located between the midline and the mandibular canine. The inferior alveolar nerve may be impacted by a fracture here, resulting in sensory abnormalities as tingling or numbness in the chin and lower lip. Because of its weaker bone structure and potential for impacted third molars, the angle of the mandible—where the body meets the ascending ramus—is also a typical place for fractures. This area is susceptible to fractures that can cause bone fragments to shift and have a major impact on face symmetry and jaw function. Patients with this type of injury typically exhibit step deformity, malocclusion (misaligned bite), facial pain, swelling, limited mouth opening (trismus), and occasionally mobility or movement of the broken segments. Paresthesia may result from involvement of the inferior alveolar nerve. When dealing with mandibular trauma, radiographic examination is crucial. The initial imaging method that is typically employed is a panoramic radiograph, also known as an orthopantomogram or OPG. It offers a comprehensive image of the entire mandible and can pinpoint the precise position and extent of fractures. When more specific information is required, a 3D CT scan provides better visualization of the surrounding structures, fracture lines, and displacement degree. Both OPG and CT scans were crucial in this instance for correctly identifying the left angle fractures and right parasymphysis. A comprehensive clinical examination is the first step towards a proper diagnosis, but imaging is essential to verify the fracture, assess its severity, and make therapy plans. The location and severity of the fracture, the patient's age and health, and the degree of bone displacement all affect how a mandibular fracture is treated. It is often advised to use open reduction and internal fixation (ORIF) for dealing with displacement. The fracture location must be surgically exposed, and plates and screws must be used to stabilize the broken pieces. Closed reduction with intermaxillary fixation (IMF) may be an option for fractures that are less severe or non-displaced. Whatever the technique, the

main objectives are to return the jaw movement, facial symmetry, bite, and nerve activity to normal.

CONCLUSION

The patient in this case study, who was 17 years old, suffered two fractures in his lower jaw: one on the left side, at the back of the jaw, known as the angle of the mandible, and one on the right side, close to the front of the jaw, known as the parasymphysis region. These kinds of fractures typically result from severe trauma or forces, like those sustained in a car crash, a fall, or an injury sustained in sports. This type of two-location jaw break makes it difficult for the patient to open their mouth, speak, or even eat. In these situations, tooth misalignment, pain, and edema are also frequent issues. The case demonstrates the significance of thoroughly examining the patient using both physical examination and specialized X-rays, such as CT and OPG scans. These enable medical professionals to determine the precise location of jaw fractures and their severity. The importance of radiography and oral medicine in identifying issues early and developing effective treatment plans is also emphasized in the paper. Quick and proper treatment of jaw fractures promotes a full recovery, prevents problems like misaligned teeth or jaw pain, and allows the patient to resume regular activities. In summary, this case shows how coordination, precise diagnosis, and timely treatment can help patients with jaw fractures heal and recover effectively.

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