


## Surgical treatment of fracture of the right mandibular angle and left parasymphysis: Clinical case report

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### ABSTRACT

Facial fractures are common in oral and maxillofacial clinical practice, and can be presented in the most diverse ways, despite the different ways in which they are addressed, the functional and aesthetic improvement of the patient is always aimed at the functional and aesthetic improvement, however, when not approached in the correct time and way, they can cause functional and aesthetic problems to the patient. The present study is a clinical case report of fracture of the right mandibular body and left parasymphysis in a 23-year-old male patient, victim of a cycling accident, treated at the General Hospital of the State Professor Osvaldo Brandão Vilela. The treatment of choice was reduction with an Erich bar and maxillomandibular block, followed by fixation of the fragments. As a result, the treatment of choice was successful, with preservation of the facial contour, reestablishment of a functional and aesthetic occlusion.

**Keywords:** Mandible, Fracture, Angle, Trauma.

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## INTRODUCTION

Facial fractures are frequent in the scope of oral and maxillofacial surgery, with a prevalence of males, and may be caused by direct or indirect trauma, among the most affected bones, mandibular fractures have a higher incidence, can be associated with their prominence in the facial skeleton, mobility, and location. (LIN; WU; CHENG, 2017).

Mandibular fractures can be associated with several etiologies, among them, car accidents, sports accidents, tumor-related and, in some cases, associated with extractions of third molars. (MARINO; MARTINS; BIANCHI, 2020).

Facial pain is one of the main associated complaints, complex fractures or incorrectly treated fractures can cause temporary disturbances, in some cases permanent, to the stomatognathic system of the affected patient. (SANTOS et al., 2019).

The purpose of this clinical case report is to demonstrate the surgical treatment of a complex fracture of the mandible in the region of the right angle and left body.

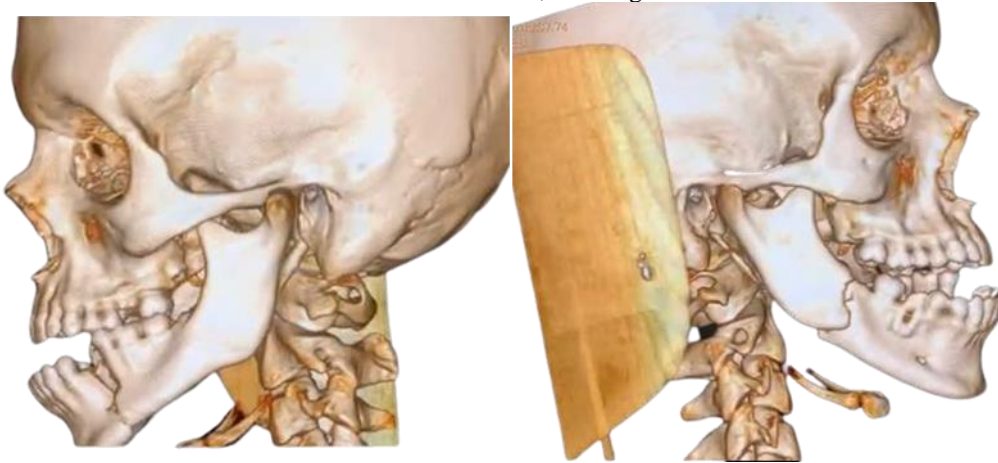
## CASE REPORT

The present study is a qualitative clinical case study of a single patient (Yin, 2015), where the treatment method for a complex mandible fracture in question was reported, the result of this treatment and its discussion with the findings in the literature. The patient was informed by signing the free consent form, being aware of the dissemination of the images of the procedure performed for the enrichment of the scientific community.

A 23-year-old male patient was admitted to the emergency room of the General Hospital of the State of Alagoas Professor Osvaldo Brandão Vilela, victim of a cycling accident.

On clinical examination, it was observed that the patient had an anterior open bite, facial pain and crepitus on manipulation, in view of these clinical findings, he was submitted to computed tomography, where a fracture of the right angle and left mandibular body was found.

FIGURA1: 3D reconstruction, showing the fractures.



After the fractures were confirmed, the patient was stabilized with an Erich's bar device under local anesthesia for subsequent rigid internal fixation.

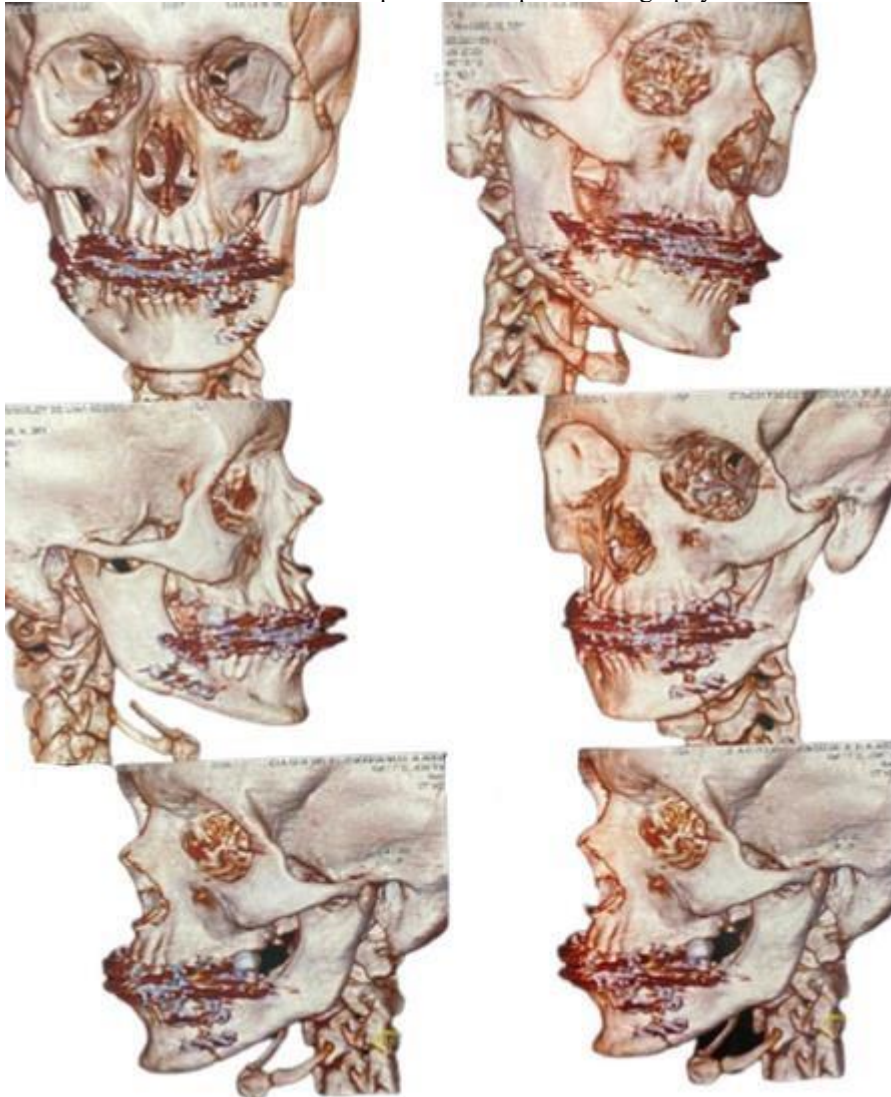
FIGURE 2: 3D reconstruction showing the reduction obtained with the installation and immobilization with heavy 1/8 elastic bands.



In view of the case, the patient underwent a surgical procedure under general anesthesia for rigid internal fixation of the bone fragments, and submandibular access was recommended for right angle fracture and mandibular vestibular access for left body fracture.

The installation of four plates of the 2.0 system was recommended, two in each fracture, and the Erich bar was maintained, aiming at the need for a second approach.

FIGURE 3: Postoperative computed tomography.



The patient was followed up with our oral and maxillofacial surgery team for a period of one month, following the postoperative recommendations and being discharged after this period.

FIGURE 4: Intraoral photo after removal of erich's bar



## METHODOLOGY

Facial traumas have changed over the years, different patterns of trauma, numerous etiological agents are a challenge to the oral and maxillofacial surgeon, there are numerous etiological agents of mandibular trauma, among them, physical aggressions, car accidents, falls from one's own height and sports accidents stand out. (FONSECA et al., 2015).

In addition to the etiological agents mentioned, pathological fractures in atrophic mandibles, a mandible is considered atrophic when the bone height corresponds to less than 15 mm, these fractures represent a challenge to the surgeon, since it has low vascularity. (SHOKRI et al., 2019).

Numerous signs can be observed in patients who have mandibular fractures, mandibular trismus, and crepitus are some of the main ones that can be observed. (SANTOS et al., 2019).

Mandibular fractures are classified according to angulation and muscle traction force, and can be classified as favorable and unfavorable.

CT scans are extremely valuable for the correct diagnosis and management of the case. (HUPP; ELLIS; TUCKER, 2015).

Males are more affected, with a prevalence of 61.1%, complex fractures of the mandible become a challenge to the surgeon, with the symphysis and parasymphysis being the most affected areas, 38.9%, followed by condylar fractures, 26%, angle and condyle, 14.3% and branch, 6.6%. (LIN; WU; CHENG, 2017).



Several forms of treatment can be employed, usually open reduction and rigid internal fixation, which provides a better resolution of fractures, providing greater comfort to the patient. (KANDAMANI et al., 2022).

In addition to open reduction, conservative treatment, when well indicated, can restore the patient's stomatognathic, aesthetic and occlusal functions, among the main forms of conservative treatment, the main ones are tethers, bars, archwires and spnilts. (FONSECA et al., 2015).

Despite the various forms of treatment, the goal of treatment is to reestablish functional occlusion, in addition to reestablishing its natural anatomical shape and functional capacity. (MARINO; MARTINS; BIANCHI, 2020).

Aiming at these points, open surgical treatment with the use of rigid fixation systems provides a greater anatomical repositioning of the fractured segments, in addition to immediately reestablishing mandibular functional movement. (KIM et al., 2014).

## CONCLUSION

Despite the variety of mandibular traumas, with the advent of advances in surgical techniques and fixation materials, complex fractures, which previously represented a challenge to their treatment, are proving to be resolute with good clinical, functional, and aesthetic repercussions.



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