

## Traumatic Brachial Plexus Injuries. Case Report and Literature Review for Therapeutic Approach

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### Abstract

We present a case of a 47-year-old male present cervicobrachialgia and Claude-Bernard-Horner Syndrome. Through its imaging study, a clavicle fracture and avulsion of the brachial plexus is evident. The patient was successfully treated for his fracture and awaits until now the possibility of surgical treatment.

**Keywords:** *Brachial Plexus; Traumatic Injury; Brachial Paralysis*

### Introduction

The brachial plexus results from the entanglement of the anterior branches of the last four cervical nerves (C5, C6, C7 and C8) and the first thoracic nerve (T1). Through its collateral and terminal branches, it ensures innervation of the upper limb and shoulder girdle. His injury causes loss of strength, mobility, sensitivity and alteration of the vegetative function of the limb that is usually accompanied by severe neuropathic pain. The most frequent etiology is traumatic, where the position of the arm at the time of the accident usually determines the level involved, followed by others such as organic and tumor [1-4].

### Case Presentation

A 47-year-old male patient consults J. M. Cullen Hospital for presenting cervicobrachialgia and the inability to mobilize the upper left limb. These symptoms appear after a fall with abducted limb. The physical examination shows conserved pulses along with myosis and homolateral ptosis. A chest radiograph (Figure 2) is requested where a fracture of the middle third of the left clavicle is detected. An MRI (Figure 1) is then performed, showing preganglionic avulsion of the left C7-T1 roots and C5-C6 disc protrusion.

### Discussion

The primary trunks of the brachial plexus are formed from the anterior branches of C5-T1: upper, middle and lower. These cross below the clavicle and give rise to the posterior, lateral and medial fascicles. Finally, these are divided into branches that originate five peripheral terminal nerves: median, ulnar, musculocutaneous, radial and circumflex nerves. His injury, therefore, determines a posture with an adducted arm, extended elbow, pronounced forearm and flexed wrist and fingers.



**Figure 1:** MRI of the cervical spine with gadolinium.



**Figure 2:** Chest x-ray showing clavicle fracture.

### Conclusion

The avulsion of the brachial plexus generates a paralysis of the upper limb that leads to a marked inability. This is why its early and timely diagnosis is of paramount importance. The patient received treatment for the clavicle fracture and given the complexity of the case is currently in Evaluation of the possibility of surgical treatment.

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