

# **SEVERE THORACIC TRAUMA (STT) ASSOCIATED WITH COMPLETE GLENOMERAL LUXATION WITH HUMERUS EXPOSURE IN A POLYTRAUMATED PATIENT: CASE REPORT**

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**Abstract:** Severe Thoracic Trauma (STT) in a polytraumatized patient indicates greater morbidity and mortality, with complications such as hemorrhage, shock, sepsis, multiple organ failure and respiratory failure. The severity of this trauma depends on anatomical factors such as the number of fractured ribs, the presence of bilateral fractures, flail chest and pulmonary contusion, being determinant for patient management. This report is about a case of a TTS caused by a motorcycle accident followed by being run over that showed signs of hemodynamic instability and shock, in addition to a reduction in bilateral breath sounds, chest pain and pain in the RUL, with exteriorization of the head of the right humerus being observed in the admission, without external signs of flail chest. The patient was stabilized with volume replacement and transfusion protocol with blood components and referred for Computed Tomography (CT). However, the patient was hemodynamically unstable and hypoxemic, which required sedoanalgesia for orotracheal intubation and support with mechanical ventilation before going to the Surgical Center of the unit. Subsequently, she underwent splenectomy, due to grade IV contusions-lacerations in the spleen, and water-seal thoracic drainage bilaterally, due to the presence of hemopneumothorax on the left and pneumothorax on the right. In addition to mechanical-surgical cleaning with open reduction of exposed dislocation of the right humerus. After the surgical procedure, the patient was transferred to the Intensive Care Unit (ICU), where she remained sedated during the postoperative period, under Mechanical Ventilation for 14 days and hemodynamically stable. In the subsequent 24 days in the ICU, the patient was receiving analgesics optimization to control pain, antibiotic therapy to control infections and respiratory and motor physiotherapy in order

to regain her breathing capacity and allow her to be discharged from the ICU. After these 38 days, the patient was referred to the ward, where she was observed for 5 days and then discharged for outpatient follow-up.

**Keywords:** Polytraumatized; Severe Thoracic Trauma; Unstable Chest and Exposed Dislocation.

## INTRODUCTION

This report describes a case of a patient with severe polytrauma who presented severe involvement of the rib cage bilaterally, with all costal arches fractured in the left hemithorax and multiple fractures in the right hemithorax, being considered a Severe Thoracic Trauma (STT) and, simultaneously, a chest unstable. Furthermore, there was a complete dislocation with exposure of  $\frac{1}{4}$  of the right humerus, in addition to injury with grade IV contusions-lacerations in the spleen. The patient underwent bilateral water-seal thoracic drainage, splenectomy and open reduction of the exposed humeral dislocation (Figure 4).

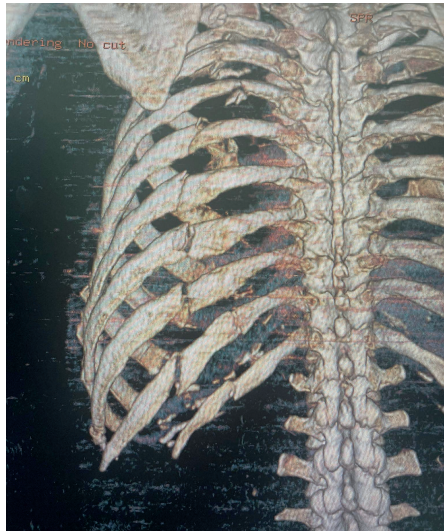
## CASE REPORT

Female patient, 36 years old, admitted to Hospital Ferreira Machado, in Campos dos Goytacazes - RJ, after a motorcycle accident followed by being run over. On admission, he presented signs of hemodynamic instability, with hypotension, tachycardia, hypoxemia, peripheral hypoperfusion and mild disorientation, in addition to reduced bilateral breath sounds, chest pain and RUL pain, with the right humeral head being observed in the external environment. Volume replacement and transfusion protocol with blood components were started. Computed tomography (CT) showed fractures in all posterior portions of the left costal arches (Figure 1) (Figure 2), associated with moderate hemopneumothorax with subcutaneous

emphysema and multiple fractures in the right costal arches, with small pneumothorax. The abdominal portion revealed a lesion with grade IV contusions-lacerations in the spleen, hematoma and peritoneal free fluid (Figure 3). CT Scout exhibited complete dislocation with exposure of  $\frac{1}{4}$  of the right humerus.

Thus, the patient underwent exploratory laparotomy, with splenectomy, review of hemostasis and cavity washing, after the inventory did not identify other injuries in the abdomen. Bilateral water-seal thoracic drainage was performed with drain No. 28 on the right and No. 32 on the left and mechanical-surgical cleaning with open reduction of exposed dislocation of the right humerus.

After the surgical procedure by the General Surgery and Orthopedic team, the patient was transferred to the Intensive Care Unit (ICU), where she remained sedated postoperatively, with an orotracheal tube (OTT) under Mechanical Ventilation (MV) and hemodynamically stable. She remained with sedoanalgesia, TOT and VM for 13 days. She was extubated on the 14th postoperative day and a 5L/Min O<sub>2</sub> nasal catheter was introduced. There were 38 days of hospitalization in the ICU with optimization of analgesics to control pain, antibiotic therapy to control infections and respiratory and motor physiotherapy with the aim of reducing respiratory and motor disabilities, favoring earlier weaning and reducing the length of stay in the ICU and its consequences. sequels. On the 39th day of hospitalization, she was referred to the infirmary with follow-up by the medical team until hospital discharge to be followed up with outpatient follow-up.



**Figure 1:** Computed Tomography of Left Costal Arches (posterior view).



**Figure 2:** Computed Tomography of Posterior Costal Arches.



**Figure 3:** Computed tomography of the abdomen with venous contrast.



**Figure 4:** Right Humerus Exposure.

## DISCUSSION

Severe Thoracic Trauma (STT) in a polytraumatized patient indicates higher morbidity and mortality, STT has complications such as hemorrhage, shock, sepsis, multiple organ failure and respiratory failure. The severity of this trauma depends on anatomical factors such as the number of fractured ribs, presence of bilateral fractures, flail chest and pulmonary contusion. In addition to factors such as ventilatory capacity, use of medications and previous illnesses of the patient. Complementary exams, such as X-rays and CT scans of the chest allow for greater detailing of the trauma. Therefore, it is necessary to determine the severity of the STT in order to manage this patient. Thus, it is necessary to optimize analgesia, perform support through adequate oxygenation and evolve with respiratory and motor physiotherapy. In the case in question, the patient was hemodynamically unstable and hypoxemic, which required sedoanalgesia for orotracheal intubation, bilateral thoracostomy for drainage of hemothorax and pneumothorax and mechanical ventilation support.

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