

Complex Multitrauma Patient: Head, Thorax, Abdomen and Limbs

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Introduction: Multiple trauma represents the main cause of death in 40–50 years old patients. It requires a rigorous management of the critical patient to ensure a correct order in the performed maneuvers and a maximum efficiency.

Case report: We report a case of a 27 year-old patient with multiple trauma, victim of a train accident. The patient arrives with the presumptive diagnosis of multiple trauma due to train accident, open acute craniocerebral trauma, suspicion of acute subdural hematoma. After the evaluation in the emergency service, the patient was transferred to the Tîrgu Mureș Surgery Clinic, where an emergency intervention was performed. Any of the lesions presented (abdomen, thorax, extremities and head lesions) were able to produce the patient's death by themselves.

Conclusions: The survival chances of multiple trauma patients increase due to a rigorous management and the application of a standardized evaluation protocol.

Keywords: multiple trauma, management, evaluation protocol

Introduction

Multiple trauma represents the main cause of death in 40–50 year-old patients. Most of the patients deacease in short time after the accident (approximately 60% after 1 hour and 19% after 12 hours). The medical examination of the critic multiple trauma patient, immediately after his arrival in the emergency service, is performed in difficult conditions and sometimes errors can occur. In these conditions it is necessary the establishment of aggressive therapeutic maneuvers at the same time or immediately after the beginning of the diagnosis procedures. Thus, it is necessary a rigorous management of the critical patient and a rigid protocol, ensuring a correct order in the maneuvers performing and a maximum efficiency.

We present the case of a multiple trauma patient, victim of a train accident.

Case report

The patient C.C., 27 years old from rural area, victim of a train accident, was admitted in County Hospital in Miercurea Ciuc, from where was transferred to County Hospital in Tîrgu Mureș due to a suspicion of acute subdural hematoma.

The patient arrives with the presumptive diagnosis of multiple trauma due to train accident. Open acute craniocerebral trauma. Suspicion of acute subdural hematoma.

The admission period in the County Hospital in Miercurea Ciuc was 6 h and 30 min. In this period were performed:

- ▶ Administration of hydrocortisone hemisuccinate, hemostatics, diuretics;
- ▶ Blood transfusion;
- ▶ Administration of antibiotics.

Following the clinical and paraclinical evaluation from the emergency room, the established diagnosis was multiple trauma due to train accident, craniocerebral trauma, left parietal wound sutured, left clavicle fracture, multiple rib fractures anterior left hemithorax, subdermal emphysema, left hemopneumotorax, abdominal hemorrhage, right femora comminuted fracture.

In the Emergency Room oxygen was administrated, a Guedel pipe was inserted, minimal pleurostomy with passive pleural drain, peripheral venous approach, peritoneal lavage and bladder probe were performed. It was administrated Fentanyl 0.2 mg iv, 5% glucose 500 ml and physiological serum 2000 ml.

The patient was transferred to the Department of Surgery, where an emergency intervention was performed. The intraoperative diagnosis was: multiple trauma due to train accident, craniocerebral trauma, left clavicle fracture, rib 1, 3–8 fractures, anterior left hemithorax, left hemopneumotorax, hemoperitoneum due to spleen rupture, retroperitoneal hematoma.

A median incision was performed and the peritoneal cavity was opened and isolated. The exploration confirmed the hemoperitoneum and the incision was extended cranial and caudal. A splenic lesion, from spleen hilum to trans-

Table I. Laboratory results from the emergency room

Blood type	O I, Rh positive
Sodium	146.3 mmol/l
Potassium	4.28 mmol/l
Calcium	1.7 mmol/l
Astrup	
pH	7.41
HCO ₃	18.7 mmol/l
pO ₂	90.3 mmHg
pCO ₂	37.1 mmHg
BE	-4.3
O ₂ saturation	96.8%

verse mesocolon, and a hematoma in the tail of pancreas prolonged retroperitoneal was found. It was performed splenectomy in the spleen hilum with spleen vessels ligation. The dynamic failure of the diaphragm imposed the replacement of the pleurostomy tube by another tube with a larger diameter. Through the new pleurostomy tube was extracted about 500 ml of aerated blood. After the lavage of the peritoneal cavity, the insertion of multiple drain tubes abdominal wall was rebuilt in anatomical layers.

The surgical intervention was performed in 1 hour and 30 minutes.

ASA anesthetic risk was 3. The surgical intervention was performed under general anesthesia with orotracheal intubation.

The patient was admitted for 25 days in the ICU clinic, where was performed tracheostomy for respiratory failure and reduction of the femora fracture under epidural anesthesia. After 3 days in the Surgery Clinic, due to favorable evolution, the patient was transferred to Orthopedic Clinic for sequel treatment of femora fracture by extension.

Discussions

We presented a critical multiple trauma case with a large-scale lesions association: head – thorax – abdomen – extremities. A necessary statement is that any of the lesions presented (abdomen, thorax, extremities and head lesions), were able to produce by themselves the patient death.

The slow postoperative evolution was caused in the present case by the long time passed since the accident to the proper treatment and especially by the necessity of 3 serialized surgical procedures.

The patient APACHE II score was 18, the trauma score was 8 and the revised trauma score was 9, giving the pa-

tient minimal chances of survival. As others studies show [4], these scores must be used only in correlation with lesions clinical evaluation for the establishment of the disease severity and of the death risk in the case of the multiple trauma patients.

Although the current trend is to a less invasive approach of the multiple trauma patients [1,2,5], in the present case was decided for an emergency surgical intervention considering the long time passed from the accident to the arrival at the SMURD unit and the nature of the lesions.

Conclusions

It was presented a critical multiple trauma case with a large-scale lesions association, where the success of the therapy was due to the fast primary evaluation as well as the safety of the surgical and orthopedic interventions. The chances of survival of this category of patients increase due to a rigorous management and the appliance of a standardized evaluation protocol.

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