Clinical Cases

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Large Piece of Wood Board Removal and Long Term Survival in a Patient with Stabbed Thoracic Wound - Case Report

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Rezumat

Extragerea unui corp străin gigant intratoracic (scândură) - prezentare de caz

Traumatismele injunghiate toracice reprezintă o patologie mai frecvent întâlnită în practica militară şi mai puţin frecventă în viaţa civilă, iar în cazul din urmă, dacă ele apar sunt cauzate de accidente. Plăgile toracice înjunghiate sunt mai frecvente la pacienţi de sex masculin, în comparaţie cu sexul feminin şi mai frecvente la tineri decât la vîrstnici. Managementul şi prognosticul traumatismelor injunghiate toracice cu retenţie de corp străin sunt în relaţie cu compoziţia, dimensiunea şi localizarea corpului străin reţinut. Prezentăm cazul unei paciente în vârstă de 28 de ani care a fost adusă în Departamentul de Urgenţe Chirurgicale a Spitalului Clinic Judeţean de Urgenţă Mureş în şoc hemoragic, cu o plagă înjunghiată şi cu retenţia unui corp străin de dimensiuni mari. La mai puţin de 10 minute de la momentul sosirii în Departamentul de Urgenţă, pacientei i s-a efectuat toracotomie şi splenectomie. La sfîrşitul intervenţiei s-a efectuat reconstrucţia sânului stâng. Aspectul original al acestui caz este reprezentat de dimensiunea mare a corpului străin reţinut în torace, de complicaţiile minore apărute în cursul tratamentului, precum şi de evoluţia favorabilă a acestui caz în ciuda dimensiunilor mari ale corpului străin, dar şi a localizării sale.

Cuvinte cheie: traumatism toracic, plagă înjunghiată, toracotomie

Abstract

Stabbed thoracic trauma is quite common in military practice, but they very rarely occur in civilian life, where they are predominantly accidental injuries. Thoracic stabbed wounds are more commonly observed in men than in women and in younger rather than older people. The management and prognosis depend on the composition, size and location of the foreign body. A 28-year-old Caucasian woman presented to the emergency room with hemorrhagic shock, a large stabbed wound and retention of a large piece of wood board. Less than 10 minutes after arriving to the emergency room she underwent open surgical thoracotomies and resection of the spleen rupture without any significant postoperative complications. At the end of the procedure the left breast was reconstructed. The original aspects of this case are the singularity of the foreign body and its relative harmlessness in spite of its large size.

Key words: thoracic trauma, stabbed wound, thoracotomy

Introduction

Physical injuries are a leading cause of fatalities among patients under 40 years. Thoracic traumas are responsible for 20-50% of deaths caused by physical injuries, while thoracic traumas are associated with 25% of all trauma deaths (1,2).

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In the past decades, the widespread expertise of diagnosis and treatment tools for traumatized patients was based on knowledge gathered from treating war-injured patients (3). Industrial advances and the prevalence of motor vehicles led to an important increase in the frequency of physical injuries among younger people.

Case Report

A 28-year-old Caucasian woman was admitted to the emergency room unconscious. Approximately 50 minutes prior to admission, she suffered an injury when a vehicle struck her horse carriage and threw her in a big wood board that perforated her chest.

Physical examination revealed an unconscious, pale, somewhat cyanotic woman, blood pressure 80/60 mmHg, pulse rate was noted to be 105, intubated oro-tracheal, receiving blood transfusion and inotropic support (Dopamine and Dobutamine). The examination of her chest revealed a large stabbed wound and retention of a foreign body that was a large piece of wood board 100 centimeters long and 15 centimeters wide. The wound was 20 centimeters long at the anterior left level of the thoracic wall (the left breast was also injured) and approximately 20 centimeters long at the posterior of the right thoracic wall at a distance less than 15 centimeters from the spine; traces of clothing threads and a large wood board were found in the thoracic wound track (Fig. 1).

Less than ten minutes after arriving at the hospital (approximately 60 minutes after the injury) she was admitted in the operating room. We performed an atypical thoracotomy near to the trans-thoracic track of the wood board. The intraoperative thoracic wound revision detected a large piece of wood board, laceration of the left diaphragm and ascension of abdominal viscera, multiple broken ribs and bone fragments, a flail motion of the lateral left thoracic wall, contusion of the inferior lobar lung and haemoperitoneum (approximately 1000 millilitres blood), left haemothorax (approximately 1000 millilitres blood). The entire track of the thoracic wound contained traces of clothes (Fig. 2). The wood board extraction was made only after a combined mechanical debridement, complete release and wound toilet (large quantities of sterile saline water was used) of the intra-thoracic track. The intraoperative exploration of the wound revealed a left diaphragm laceration, spleen pedicle rupture whereas ascending spleen and for this reason splenectomy was performed (Fig. 2).

The lung contusion was treated by a wedge resection of the inferior lung lobe, the diaphragm reconstruction was made by monoplane suture (Fig. 3), and the thoracic wall reconstruction was made using polypropylene mesh (Fig. 4). After a complete inspection of the left hemithorax anterior and posterior chest tubes were left in place and one was placed in the peritoneal cavity for drainage. Skin closure and left breast reconstruction was accomplished at the end of the procedure.

The recovery of our patient was uneventful; she was extubated after seven days. In the meantime she received antibiotic prophylaxis (Penicillin and Metronidazole for seven days), active immunization with tetanus toxoid (0.5 ml intramuscular), high-energy nutrition, pain relief and anticoagulants. With drainage progressively decreasing, the chest tubes were removed after 15 days and the peritoneal tube after five days. Chest film revealed no accumulation of pleural effusions



Figure 1. *The initial aspect of the patient*

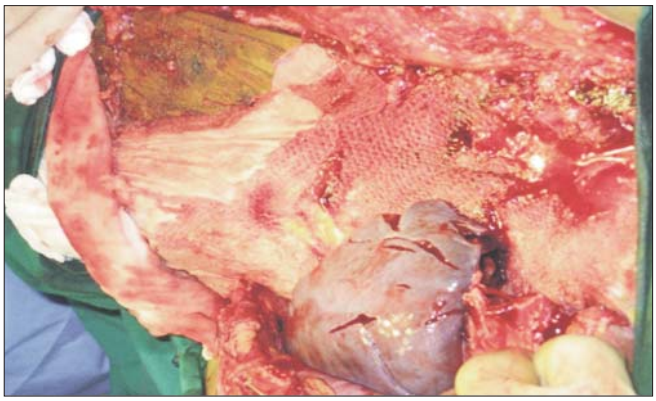


Figure 2. *The intraoperative aspect of the lesions, the ascension of the abdominal viscera*

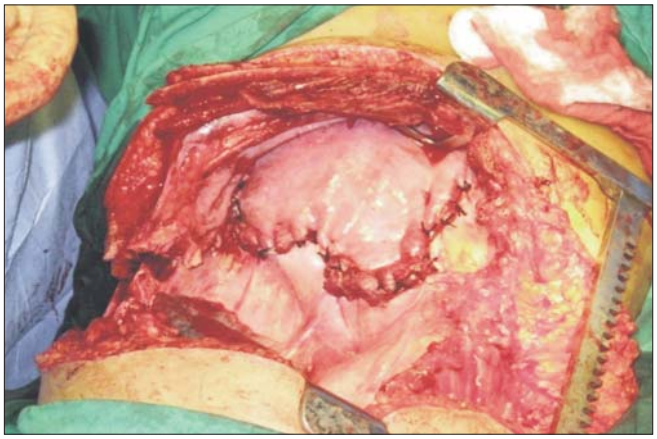


Figure 3. *The reconstruction of the diaphragm*

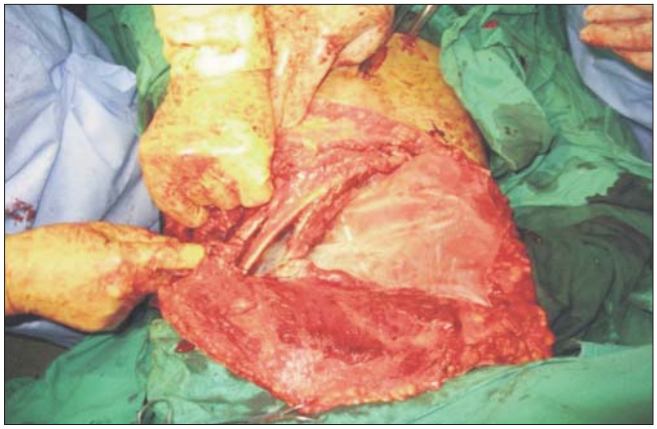


Figure 4. *The reconstruction of the thoracic wall with poplypropylene mesh*

and the patient was finally discharged. Follows up exams revealed an optimal outcome. One year after the surgical intervention, our patient remains asymptomatic. (Fig. 5)

Discussions

Only a few cases of major thoracic trauma with this type of stabbed wound have been described in the medical literature. Despite the gravity of this thoracic injury, the final outcome was unexpectedly favorable. The successful treatment of this case was influenced by several factors including the quick transportation of the patient to the trauma center, an adequate process before emergency room admittance and an optimal referral time into the operating room. As other authors pointed out, we want to highlight the importance of the "golden hour" as a key positive outcome for this young injured patient (4,5). Estreras showed that critical care team readiness and physical injured patients' expertise contribute to a decrease in mortality and morbidity for these patients (6). For our patient, medical air transportation was an appropriate alternative for a patient who needs critical care along with the valuable expertise of the critical care team.

Conclusions

The original aspects of this case are the singularity of the foreign body and its relative harmlessness in spite of its large size. The successful outcome of this case was due to combined appropriate intervention time, the readiness and expertise of the critical care, anesthesiology and surgery team.



Figure 5. *The thoracic X-ray aspect, one year postoperatively*

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