A TODAY VICTIM OF SECOND WORLD WAR

Anca Hăisan¹, Mihaela Dumea¹, Manuela Ursaru², C. Bulat², Diana Carmen Cimpoesu¹

University of Medicine and Pharmacy “Grigore T. Popa” - Iași
Faculty of Medicine
1. Department of Medical Specialties (II)
2. Department of Surgery
*Corresponding author. Email: anca.haisan@umfiasi.ro

A TODAY VICTIM OF SECOND WORLD WAR (Abstract): Emergency medicine as a medical specialty has to deal with all kind of emergency situations, from medical to post traumatic acute events and from new born to the elderly persons, but also with particular situations like explosions. In Romania nowadays these are accidental explosions and rare like frequency, but may be dramatic due to numbers of victims and multisystem injury that may occur. We present a case of a single victim of accidental detonated bomb, a projectile from the Second World War, which unfortunately still may be found in some areas. The management of the case from first call to 112 until the victim is discharge involves high professional team work. We use these opportunity to make a brief review of the mechanism through the lesions may appear and also to renew the fact that the most impressive lesion may not be the most severe, and we have to examine carefully in order to find the real life threatening injury of the patient. Keywords: EMERGENCY, EXPLOSIONS, HEMOPERITONEUM, HEMORRHAGE, AMPUTATION

Although rare, nowadays there are still unexploded projectiles of the Second World War on Romania’s territory, mainly found in rural area, near to or in the forests. Even if they look like antiques and appear to be inoffensive, these projectiles may be very harmful in inexperienced hands.

CASE REPORT

At 12:30 of 21.05.2014 there was a 112 call for a teenager of 17 years old who was found bleeding after he manipulated a projectile found on a wild field. The dispatch sent an ambulance and the helicopter and also the fire workers and special intelligences. At 12.40 the emergency team found an conscious but confused victim, Coma Glasgow Scale 14, with opened airway and spontaneous breaths, hemodinamically stable by appearance, BP=150/96 mmHg, HR=100/min, SaO₂=90%, with partial amputation of I-IV fingers of left hand, nasal stopped bleeding and multiple superficial wounds of the thorax and abdomen.

The emergency team provides the first professional aid by fixing a cervical collar, monitoring vital signs, getting two i.v. lines of 18 G and putting a compressive bandage on the fingers of left hand and also a splint for sustaining the forearm. The patient was transported by helicopter sitting on a stretcher, while he was perfused with normal saline and analgesics (Fentanyl 100 mcg i. v.) (fig. 1).
In The Emergency Department he was continuously monitorized, blood and urine samples were taken and he got an antitetanic vaccine and antibiotics. Left forearm and hand X-rays were done, as well as a contrast computer tomography of the head, neck and toraco-abdominal-pelvic areas which revealed no pathological signs on cranio-cerebral and neck level, but found multiple solid foreign bodies (shrapnels) on thoracic wall without lung or pleural post traumatic sings of injury; there were found pneumoperitoneum and hemoperitoneum mostly in the right hemi abdomen, liver lacerations in segments V-VI, shrapnels in segments II, III, VI, VII and VIII of liver and interhepatogastric, between the intestines and in the abdominal wall and right hemoscrotum. It’s worth mentioning than even from body topogram foreign bodies were identified (fig. 2,3).

A multidisciplinary medical team (emergency physicians, radiologists, general surgery, orthopedics, ear, nose and throat doctors, oro-facial and plastic surgeons) gathered and decided to do immedi-

Fig. 1. Multiple superficial wounds on the thorax and abdomen

Fig. 2. Liver laceration with active bleeding

Fig. 3. Body topogram showing multiple foreign bodies (shrapnels)
A today victim of Second World War

ately general surgery intervention to stop the internal bleeding.

Median xifoumbilical laparotomy was performed and when entering in the abdominal cavity hemoperitoneum was found (about two liters of blood). An infra-centimetric liver laceration (segment III) and foreign body (shrapnel) with adjacent sub capsular hematoma were identified. The shrapnels were removed, the hematoma drained and afterwards a simple hepatorrhaphy was performed. Further inspection of the abdominal cavity detected multiple transfixiant lesion of the liver (segment V and VI), one of them involving the liver bed with active bleeding unresponsive to haemostatic measures which implied performing tactic cholecystectomy and liver wedge resection (V and VI liver segments). The exploration of the abdominal cavity was continued with dissection of the gastro colic ligament and inspection of retro gastric cavity and mobilization of the superior duodenal flexure, inspection of the bowels and spleen without any source of bleeding. Right persistent patent processus vaginalis was found with blood exteriorizing when the hemiscrotum was compressed. A vertical incision was made through the skin of the right scrotum and underlying tissues that found a hematoma that was removed and normal aspect testicle. An orchidopexy was performed and the scrotum was closed. Three abdominal passive drains were placed (right subphrenic space, subhepatic and Douglas) and the abdominal wall was closed in anatomical layers.

Post operatory evolution was good, and the patient remained in intensive care 3 days being monitorized and perfused with normal saline and colloids after he was transfused with plasma during surgery intervention. He also got antibiotics, antiet-

metic and analgesics.

Although there were no other lesions and the post operatory evolution was good, the teenager remained without first phalanx of fingers I, II, III of the left hand.

DISCUSSION

Even if we live peaceful times, there are rarely cases of accidental blast injuries in Romania and this is the reason why we decided to present a classification of the lesions produced by the explosions and blasts.

In order to understand the mechanism of lesions it is important to know that there are two major types of explosives: high order explosives, which produce a supersonic over-pressurization shock wave (HE) and usually these are the modern military weapons (C-4, Semtex, TNT, nitroglycerin, dynamite, ANFO), and low-order explosives (LE), which develop a subsonic explosion (gun powder, petroleum based bombs, like Molotov cocktails) (1).

Primary mechanism of blast injuries (blast wave) involves intense over-pressurization impulse due to detonated HE explosives and affects organs filled with gas (lungs, middle ear, and gastrointestinal tract). The injuries that will be developed are: pulmonary barotraumas, tympanic membrane rupture, eye destructions, brain damage, abdominal hemorrhage and bowel perforation, mesenteric shear injuries, solid organ lacerations, testicular rupture (2, 3).

Secondary mechanism of blasts derive from flying objects hitting the body (parts of the bomb or other adjacent objects) and the subsequent lesions may be eye penetration and blunt or penetration trauma of limbs or body (4).

Tertiary mechanism involves the blast wind which throws away the victims and any part of the body may be affected by blunt or penetrating trauma, fractures and
amputations (5).

Quaternary mechanism is due to all kinds of injuries from the explosion like burns, crushes, toxic gases inhaled, asphyxia and complications of chronic pathology (asthma, angina, hypertension, and hyperglycemia) (6).

In our case, was not about HE projectile, so we cannot talk about blast wave, but about blast wind, which caused penetrating and blunt abdominal trauma and secondary mechanism of flying fragments of bomb causing penetrating injuries – shrapnels into the thoracic wall and abdominal wall and cavity and also partial amputation of the left hand fingers.

CONCLUSIONS

Even if explosions are rare circumstances in normal peaceful times, victims of these events usually have multiple traumas and life threatening condition may underlay visible hemorrhage.

REFERENCES


SAPHENOUS VENOUS GRAFT PSEUDOANEURYSM

Saphenous vein graft (SVG) pseudoaneurysm is a rare and serious complication of coronary artery bypass (CABG) surgery. The complication can vary from an incidental finding on an imaging study to a life-threatening emergency. In the two reported cases, SVG pseudoaneurysm reflects the extreme variation in presentation and natural history, and highlights the need for adapted management. A review of literature indicates that almost one third of patients are asymptomatic at detection and a history of operative complications and need for re-exploration after the initial surgery may serve as useful predictors for the development of this rare complication. Finally, a conservative management may be considered, especially in the asymptomatic patient with multiple co morbidities and limited life expectancy (Smer A, Alla V, Chandraprakasam S, et al. Saphenou Venous Graft Pseudoaneurysm: A Review of the Literature. J Card Surg 2015; 30: 70–73).

Doina Butcovan