CASE REPORT

Death Caused by the Blunt Trauma on The Prisoner's Chest: A Case Report

Edwin Tambunan[1], Ahmad Yudianto[2], Galih Endradita[1]

[1] Resident of Forensic Medicine and Medicolegal Specialist Program, Faculty of Medicine, Universitas Airlangga, Jl. Mayjen. Prof. Dr. Moestopo 47, Surabaya 60132 Indonesia
[2] Department of Forensic Medicine and Medicolegal, Faculty of Medicine, Universitas Airlangga, Jl. Mayjen. Prof. Dr. Moestopo 47, Surabaya 60132 Indonesia

ABSTRACT

Blunt trauma of the chest is known to be lethal due to the presence of vital organs inside the chest wall. A young man, who was arrested on June 24, 2020, at 11.00 pm due to sexual assault in a detention center in Pasuruan, was found dead the following day at 7.00 am. This prisoner was allegedly tortured and killed by other prisoners. Visum et Repertum was requested at the Department of Forensics, Bhayangkara Porong Hospital for external examination and autopsy. Bruises were found in the left and right side of the chest, in the upper extremities, in the back, and lower extremities from external examination. There were multiple fractures on the 6th, 7th, and 8th ribs found from the autopsy, and 500cc of blood was found in the left pleural space. The medical forensic approach is essential to determine the cause of death in this case.

Keywords: Blunt trauma, Chest, Forensic, Autopsy

Corresponding Author:
Edwin Tambunan,
Email: edwintambunan24@gmail.com
Tel: (+62) 81236278788

INTRODUCTION

Thoracic or chest trauma accounts for 60% of trauma patients and is attributed to 20-25% of death in the United States. Most patients with chest trauma presented with death-on-arrival at the hospital (1). Chest trauma can result from either blunt or penetrating trauma. Aside from accidents, blunt force trauma can result from torture. Some objects such as a bat or a fist that blows directly to the chest wall can cause blunt trauma of the chest. This blunt trauma can be distinguished from penetrating trauma through the wound characteristic including bruises, abrasions, lacerations with blunt ends, strands of subcutaneous tissues bridging the wound as well as bone fractures.

To determine the cause of death from a torture case, a joint force between police investigator and forensics doctors are essential. Forensics doctors examine the body according to the Visum et Repertum request. Forensics doctor plays an important role to determine the cause and mechanism of death. Therefore, in this report, the authors would like to explain the mechanism of death in blunt force trauma of the chest and its medicolegal aspects.

CASE REPORT

A 13 years old girl was abducted and sexually assaulted by a young man, 19 years old, on June 23, 2020. The young man was harassed by local people and arrested on June 25, 2020, at 20.00. The young man was detained in a detention center in Pasuruan at 23:00 on the same day. He was placed with 58 prisoners on the same block. On June 26, 2020, 5:30 am, the young man was found dead. It is assumed that the young man died due to physical assault by the other prisoners. Visum et Repertum was requested to examine the young man's body. The body arrived at the Department of Forensics, Bhayangkara Porong Hospital on June 26, 2020, alongside with the Visum et Repertum request letter from Pasuruan Police Office number: B/47/VI/2020/Polres at 10.05. External examination and autopsy were done at 5.40 pm.

External examination: the dead body weighed 45 kg, measured 147 cm, aged around 15- 20 years old, the skin was tan, and body shape was normal. Livor mortis sign was found on the back and waist and diminished after pressure was applied. Rigor mortis was found in the whole body. There was no sign of decomposition.

Conjunctiva as well as oral mucous and gum were pale. Fingertips were bluish uniformly. Bruises were found in the left and right side of the chest, in the upper extremities, in the back, and lower extremities as well. Abrasions were found in the back of the neck, right and left lower arms, and right upper arm. Burn injuries were found on the scrotum and the right limb. Rib fracture was palpable on the left side of the chest.

Autopsy: multiple fractures of the ribs were found in the 6th, 7th, and 8th of the left ribs accompanied by blood infiltration. Two lacerations, 0,8 cm, and 0,5 cm were found in the lower lobes of the left lung. The right lung weighed 200 grams while the left lung weighed. 220 grams. A 500 cc of blood was found in the left pleural space. Skull was intact. Blood infiltration was found in the right side of the head. The cerebrum was intact with a micro bleeder. The cerebellum and brainstem were intact with micro bleeder as well. The brain weighed 480 grams.

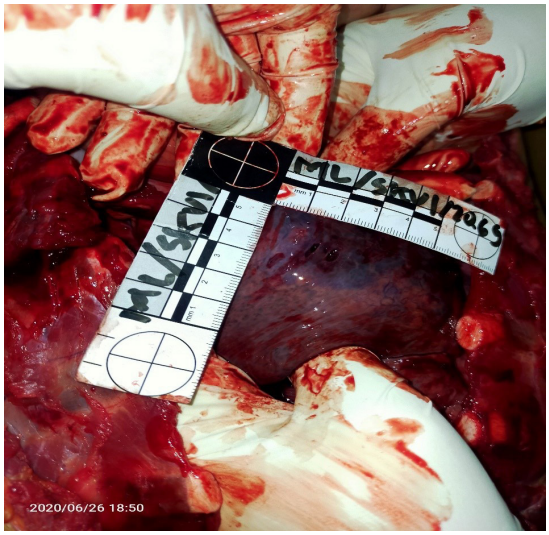

Figure 1 : Lacerations in the lower lobe of the left lung

Figure 2 : 500 cc blood found in the left pleural cavity

Figure 3 : Bruises on the right back

DISCUSSION

In this case, multiple bruises were found in the chest, in the hand, in the back as well as in the limb. These bruises were caused by a blunt force trauma due to a fast blow of blunt objects to the body. This blunt-force damaged the small blood vessels and tore up the subcutaneous tissue. The appearance of the bruise could determine the length of time of impact. In recent cases, the bruise shows a purple-reddish appearance. After 4-7 days, green color can be seen in the edges of the bruises due to damage in the blood pigment accumulated under the skin. After 10-14 days, bruises appear in yellow. Bruises do not disappear after pressure was given and there is blood infiltration to the surrounding tissue upon incision. These characteristics help to distinguish bruises from rigor mortis (2,3).

Blunt trauma could damage muscle and organs as well. Direct compression force on the chest could lead to a fracture of ribs and sternum. In this case, multiple fractures in the 6th, 7th, and 8th ribs were found. The integrity of the chest wall should be closely evaluated. Ribs fracture could induce tear in either parietal or visceral pleura. A sudden compression force in the chest leads to an increase in the intra-alveolar pressure and results in the rupture of alveoli. The air released from the rupture could fill up the pleural space, which normally vacant, and induce a condition that is known as pneumothorax. The victim is usually presented with pain and suffocation. It should be noted that a fracture in the rib leads to an injury in the organ behind the ribs such as the diaphragm, lungs, or mediastinum, which result in bleeding that could invade pleural space as well, that is known as haemothorax. Haemothorax with blood volume

more than 1500 cc in one side of the chest will put pressure on the lung, therefore ventilation is impaired and oxygen demand is not fulfilled (1,4).

Aside from that, a laceration in the lungs could result in pneumothorax as well. In this case report, the victim's pleural space was filled up with blood, therefore the lungs could not expand well and impaired the ventilation. Oxygen was not delivered to the body which can be seen by the bluish hue in the victim's fingertips (1). It is believed that the victim suffered from pneumohemothorax. The medicolegal aspect of this case, based on the Indonesian Criminal Code Article 351 paragraph 3, states that: "If the persecution results in death, it is punishable by imprisonment for a maximum of seven years" (5).

CONCLUSION

In this case report, the cause of death of the man was a blunt force trauma on the chest. This trauma caused the fracture of the left ribs, which tore the left lung, leading to massive bleeding. The accumulated blood caused a compression of the left lung leading to collapse and asphyxia.

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REFERENCES

1. Crerar-Gilbert A. Advanced trauma life support. Vol. 48, Anaesthesia. Anaesthesia; 1993. p. 441–441.
2. Buris L. FORENSIC MEDICINE. Springer-Verlag Berlin. Heidelberg; 1993.
3. DiMaio, V. J., and DiMaio D. Forensic Pathology Second Edition. CRC Press; 2001.
4. Shkrum MJ, Ramsay DA. Forensic Pathology of Trauma. Forensic Pathology of Trauma. Humana Press; 2007.
5. Soesilo R. Kitab Undang-Undang Hukum Pidana. Bogor: Politeia; 1995.