Case Report

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5 mm Before Death: Important of Transport in Thoracic Stab Wounds

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Abstract

Penetrating thoracic injury is a major medical problem due to the high mortality incidence in thoracic surgery practice. Proper and effective resuscitation and prompt transfer decreases mortality in this patients. In this study, we presented a patient who was injured with a bread knife. After transportation was provided in a seated position for 4 hours, the bread knife, which was located between the esophagus and the aorta, was removed via right thoracotomy, followed by intubation in the same position.

Keywords: Thoracic, trauma, penetrating, death, transport

Introduction

Penetrating thoracic injury is a major medical problem due to the high mortality incidence in thoracic surgery practice. A lot of patients dieshortly after the incident due to major cardiac and large vessel injuries (1,2). One of the most important factor reducing mortality in patients is proper and effective resuscitation and prompt transfer (3). Additionally, if the object causing the penetrating injury, such as an ironrod, knife, glass, etc., is stil present in the thorax, it should be removed in a controlled manner through exploration via thoracatomy and/or sternotomy. Furthermore, utmost care should be taken during the transport of these patients, and appropriate positioning should be ensured based on the position of the sharp penetrating object. Communication between the team members who first encounter the patient and those who will provide treatment is crucial in this situation (4).

In this study, the aim is topresent a patient who was injured with a bread knife. After transportation was provided in a seated position for 4 hours, the bread knife, which was located between the esophagus and the aorta, was removed via right thoracotomy, followed by intubation in the same position.

Case

It was learned that a 49-year-old female patient was injured in the back with a bread knife, resulting in stable vital signs and a Glasgow Coma Scalescore of 15. It was suggested that the patient be transported without changing position. Four hours later, the patient, seen in the emergency department, was found to have the bread knife lodged in the medial corner of the right scapula and the 6th intercostal space on the back (Figure-1). On thoracic computed tomography (in the lateral decubitus position), bread knife was located approximately 5 mm away from the aorta and esophagus was observed (Figure-2). The patient was intubated in the same position and then placed in the left lateral decubitus position (Figure-3). Upon exploration via right thoracotomy, after opening the mediastinal pleura, the tip of the bread knife was palpated between the esophagus and the aorta at the level of the azygos vein. The aorta and esophagus were lateral lydeviated, and the cutting tool was carefully removed with controlled traction (Figure-4). Subsequently, the patient, without any additional issues, was hospitalized to our clinic forfollow-up. The chest tube was removed on postoperative (PO) day 1. On PO day 2, the patient was discharged.

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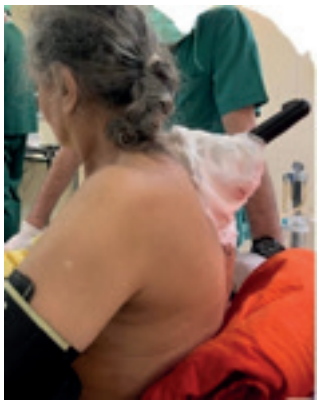

Figure 1. Patient's transfer position

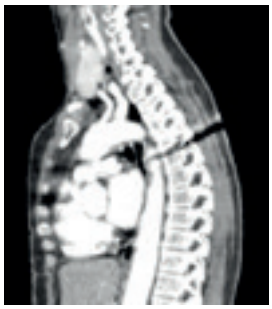

Figure 2. Bread knife between the aorta and esophagus on thoracic tomography.

Figure 3. Patient was intubated in a seated position and transitioned to lateral decubitus position.

Figure 4. Bread knife removed by thoracotomy

Discussion

The World Health Organisation reports that more than 1.3 million people die on road severy year and as many as 50 million others are injured (5). Only a small fraction, approximately 4%, of thoracic traumas involve injuries to thoracic vessels, such as the aorta, innominate vein sandartery, left carotid artery, internal mammaries, and pulmonary hilar vessels. Proper and effective prehospital treatment management have contributed to an increase in the number of patients surviving in the field and reaching the hospital despite life-threatening vascular injuries(3).

In the sepatients group, pre-hospital care (patient transport, emergency management (ABC etc) significantly enhances the prognosis of critical emergency situations. Simply having Access to pre-hospital care leads to a 25% decrease in mortality rates, and this effect is even more pronounced when coupled with timely transportation to emergency facilities (6). Swift evaluation during the initial assessment and interventions to ensure airway, breathing, and circulation are maintained can be crucial for saving lives. The patient's hemodynamic condition often guides the extent of the initial evaluation and determines whether immediate surgical intervention is necessary (7). In patients who need a long-distance transfer, the most important points are the most proper transport choice for patients, the patient's level of discomfort, joruney's time and the likelihood that the patient will survive the journey. And perhaps the most important point is the accurate and effective communication between the transferring team and the team providing definitive care (6). During the transfer of our patient, continuous communication has been maintained between the team providing initial emergency treatment to the patient and us until the patient is brought to our hospital. Our patient remained in a seated position from the initial intervention until arrival at the operating room.

Chest traumas caused by penetrating sharp instrument spose a high risk to life. In many patients, the foreign object causing the injury is not in the thorax. Rarely, as in the case of our patient, the instrument causing the injury is in the thorax when patients are brought to the emergency department. In both scenarios, the clinical condition should be rapidly assessed, and necessary interventions should be promptly performed. If the patient is not stable hemodynamically and/or respiratorily, surgery should be initiated based on clinical evaluational one without imaging modalities (1,2). Despite our patient being hemodynamically stable, emergency thoracotomy was performed due to the proximity of the blade to vital organs such as the aorta and esophagus, without additional imaging. The blade was carefully withdrawn between the aorta and esophagus under direct exploration.

Conclusion

Patients with penetrating thoracic and/or mediastinal trauma should be taken to surgery within minutes without

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waiting for any imaging method. Thoracotomy is the most appropriate and safe treatment option for these patients. Additionally, in cases of stabwounds penetrating the thorax and/or mediastinum, extreme caution should be exercised during the transfer of these patients due to the possibility of vital organ injury, and the cutting tool should be removed in a controlled mannervia thoracotomy or sternotomy.

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