

Glass Foreign Body That Chipped Through the Rib: A Potentially Dangerous Manifestation of Penetrating Thoracic Trauma

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Abstract

Sharp objects of metal and glass nature may cause penetrating injuries to the chest wall. These injuries may cause potential life threatening complications such as pneumothorax, hemothorax, hemoptysis attributable to pleura and lung parenchymal injuries. Sometimes the material that causes the penetrating thoracic trauma may remain in the thorax as a foreign body and cause chronic complications which may lead to possible morbidity and mortality. A case of 12 year old male patient who had a glass foreign body chipped through the left 11th rib who was promptly diagnosed and treated with surgery and recovered without any complication is presented in this report.

Keywords: Emergency Medicine, Penetrating Thoracic Trauma, Foreign Body.

Introduction

Sharp objects of metal and glass nature may cause penetrating injuries to the chest wall. These injuries may cause potential life threatening complications such as pneumothorax, hemothorax, hemoptysis attributable to pleura and lung parenchymal injuries. Sometimes the material that causes the penetrating thoracic trauma may remain in the thorax as a foreign body and cause chronic complications which may lead to possible morbidity and mortality¹. Although relatively uncommon compared to the blunt thoracic trauma, penetrating thoracic trauma is still a life threatening condition in pediatric age group^{2, 3}. A case of 12 year old male patient who had a glass foreign body chipped through the left 11th rib who was promptly diagnosed and treated with surgery and recovered without any complication is presented in this report.

Case Report

A 12 year old male patient admitted to our hospital's emergency department with penetrating wound in the back region. His medical history revealed that a glass door dropped onto him and broken into pieces. Past medical history revealed no prescribed drug use, no chronic illnesses and no allergies. Initial physical examination revealed a blood pressure of 128/79 mm Hg, heart rate of 101/min, fever of 36,3 °C. A 2 cm wide skin

laceration on the intersection of 11th rib and mid-scapular line was found upon inspection. Case's lung auscultation was normal. It was a wedge shaped piece of glass measuring about 3.5 cm of length (Figure 1a). A wedge shaped foreign body was identified on the left side with chest x ray (Figure 1b). No parenchymal injury such as hemothorax or pneumothorax was found. A thoracic CT was performed in order to identify the exact location of the foreign body. The foreign body was found at 11th intercostal space (ICS) at its intersection with the mid-scapular line (Figure 1c). Pleural and parenchymal injury was not detected. The foreign body was removed under general anesthesia. Additional exploration revealed that the foreign body struck the left 11th rib first and chipped its inferior end millimetrically and stopped at the 11th ICS without penetrating the parietal pleura. Patient was discharged at the first postoperative day without any complications. His follow up examinations in our outpatient clinics revealed no abnormalities.

Discussion

Penetrating trauma of thorax accounts for nearly 30% of all thoracic trauma cases⁴. Penetrating injuries to the thorax with foreign bodies have been reported to damage lung parenchyma, aorta and heart and thus cause hemo-pneumothorax, hemoptysis and cardiac tamponade^{1, 5}. Acute pne-

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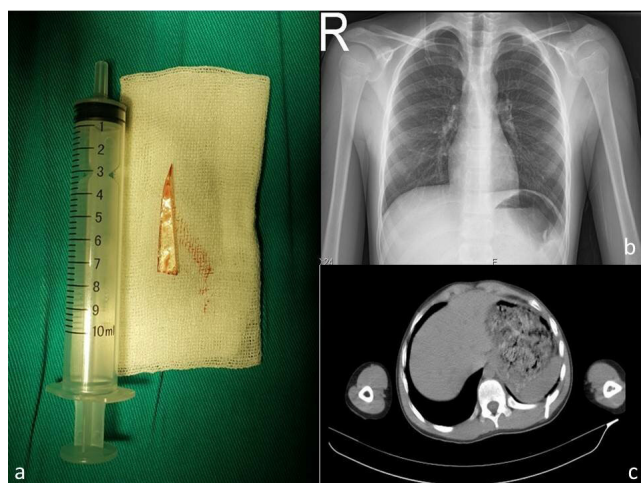


Figure 1a: Glass foreign body that was surgically removed from the patient

Figure 1b: The posterior anterior chest x ray of the patient showing a foreign body on the left lower zone.

Figure 1c: Thorax CT image showing the foreign body localized inferior to the left 11th rib.

trating injuries are usually easily diagnosed and treated on time compatible with our case.

Some penetrating wounds may carry retained foreign bodies in the thoracic region such as broken glass, shrapnel, bullets, bone and cloth fragments⁶. These foreign bodies that are missed may remain dormant for a period of time or migrate through the tissues causing additional late onset injuries. Because of complications that may lead to possible morbidity and mortality such as hemo-pneumothorax, hemoptysis and pyogenic infections, these retained materials generally require immediate surgical removal at the time of diagnosis^{5,6}. Careful history, thorough physical examination and radiological studies such as chest x ray and thoracic computerized tomography have been advocated in the diagnosis of retained foreign bodies in the thoracic region⁷. We believe that these entities should be utilized in a complementary fashion; history may yield information about the nature of the foreign body, inspection during the physical examination and the radiological studies may reveal the injuries and any possible foreign body. Despite all efforts, there are numerous cases of chronic foreign body retention in the thorax with high morbidity rates¹. We could identify the foreign body in our patient with careful physical examination and radiological studies; and treated our patient with a prompt surgical removal of the object. Thus prevented possible life-threatening complications such as pneumothorax, hemothorax, hemoptysis and infections were prevented.

In conclusion, we believe that all penetrating thoracic trauma should be physically examined carefully and appropriate radiological studies should be undertaken in order to identify any possible retained foreign body. If any foreign body is found in the thoracic wall, immediate surgi-

cal removal should be performed in order to prevent any further damage to thoracic viscera, thus preventing possible life-threatening complications in the pediatric population.

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Conflict of Interest

No conflicts of interest between the authors and / or family members of the scientific and medical committee members or members of the potential conflicts of interest, counseling, expertise, working conditions, share holding and similar situations in any firm.

Authorship Contributions

This study is entirely author's own work and no other author contribution.

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