

# Successful delayed repair of lung evisceration secondary to stab wound

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## ABSTRACT

*Traumatic pulmonary evisceration has been rarely reported in the universal literature; delayed repair of this event carries, among other complications, the potential for thoracic empyema. We report a case of a large penetrating stab wound to the left hemithorax with lung exposure and contamination with Staphylococcus aureus, successfully repaired 12 hours later.*

**Key words:** Pulmonary evisceration, thoracic trauma, *Staphylococcus aureus*, thoracic surgery.

**Palabras clave:** Evisceración pulmonar, trauma torácico, *Staphylococcus aureus*, cirugía torácica.

## RESUMEN

*Se conocen pocos casos de evisceración pulmonar; su tratamiento quirúrgico tardío conlleva el potencial de la producción de empiema torácico, entre otras complicaciones. Se comunica un paciente con evisceración pulmonar izquierda producida por herida de arma blanca 12 horas antes, contaminada con *Staphylococcus aureus*, reparado sin complicaciones.*

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## INTRODUCTION

Open thoracic wounds require immediate treatment, particularly if there is pulmonary evisceration, as they can produce potentially lethal derangements in pulmonary function and hemodynamics, incarceration, torsion or strangulation of lung tissue, and empyema. A case in point is described.

## CLINICAL CASE

A 26 year old male was seen in severe respiratory and hemodynamic distress in a remote small local general hospital due to a large chest wound; this was dressed and the patient was transported to the Emergency Room (ER) of our General Hospital in Veracruz. On arrival, the patient was in stable respiratory and hemodynamic conditions,

his arterial blood gases were normal; hemoglobin was 7 g. Twelve hours before he had received a 16 cm parasternal vertical stab wound to his left hemithorax, with total section of the 2<sup>nd</sup> to the 7<sup>th</sup> costal cartilages and exposure of a large portion of the lung; this was adherent to the edges of the chest wall wound (Figure 1).

After the initial work-up, the patient was immediately sent to the operating room and intubation with a Robert Shaw endotracheal tube was done; the wound was undressed and cultures were taken; he was placed on a triple antibiotic regimen with cephalotin, amikacin and clindamycin. The thoracic wall and its contents were explored through the same wound and profusely irrigated with large amounts of normal saline. A 5 cm laceration of the lingula, induced by a sectioned rib, was sutured with polyglycolic acid; no other lesions were found. The lung was replaced into the thoracic cavity, the pleural cavity was again irrigated with copious amounts of normal saline, the chest wall wound was meticulously closed; the chest muscles and skin were irrigated with diluted yodopovidone solution; a 30 Fr. fenestrated chest tube was connected to water seal and suction (Figure 2). Three units of packed red cells were transfused in the operating room.

The patient was kept on the same antibiotic regimen; he had an uncomplicated afebrile postoperative course and was discharged on the 5<sup>th</sup> postoperative day with a fully expanded left lung. His wound cultures grew *Staphylococcus aureus*.

His clinical condition and chest roentgenograms are normal 3 and 6 months later.

## DISCUSSION

Several comments are in order:<sup>1-10</sup>

This patient survived for a while with a large chest wall open wound that produced traumatopnea, mediastinal swings with each breath and lung evisceration, before his sucking injury was dressed in a remote small general hospital. This saved his life and facilitated the adhesion of the lung to the chest wall, probably providing another defense against several potentially lethal complications.

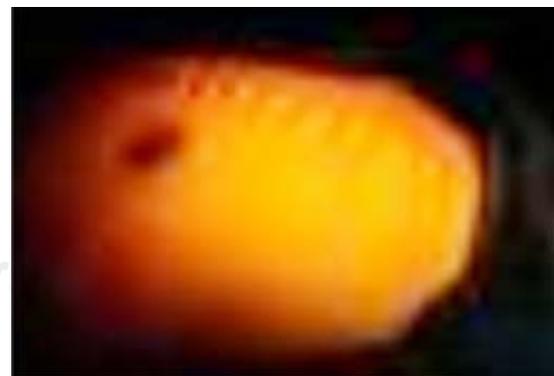
There appears to be no doubt that, at least, the chest wall and possibly the pleural cavity were contaminated (with *Staphylococcus aureus*, as we found later) after a 12 hour course, mandating copious irrigation, pleural drainage to seal the pleural cavity, and wide spectrum bacterial coverage with several antibiotics, maneuvers that probably contributed to the prevention of local and/or widespread infection.

Traumatic pulmonary injuries can induce a high mortality, even more when lung resection is needed. Fortunately, the lingular laceration in our patient was small and could be resolved by simple suturing.

Although the treatment of pulmonary hernia is influenced by the place affected, associated factors and complications, the management of pulmonary evisceration should be invariably surgical to prevent lung incarceration, torsion, gangrene, infection, etc.; in this case, the presence of six severed ribs was also a potential complicating issue, but the chest wall could be closed without any prosthetic material.



**Figure 1.** Vertical chest wall wound with lung evisceration (taken in the operating room).



**Figure 2.** Appearance of the chest wall after closure.

Fortunately, this patient ran a surprisingly smooth course without skin, muscle, bone, pleural cavity or any blood borne infections.

We are unaware of a similar case in the literature available to us.

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