DELAYED MASSIVE HAEMOTHORAX COMPLICATING RIB FRACTURES: A RARE CASE PRESENTATION

Sze Yee Lui, Nurkhairulnizam Abd Halim, Ida Zaliza Zainol Abidin

Emergency and Trauma Department, Hospital Tuanku Fauziah, Perlis, Malaysia

Kementerian Kesihatan Malaysia

INTRODUCTION

Chest trauma is one of the major causes of mortality in road traffic accidents. The incidence of delayed haemothorax from blunt chest trauma ranges from 5.0-7.4%, with massive haemothorax being much rarer.

Generally, massive hemothorax is commonly observed at admission or immediately following trauma. In most cases, massive intrathoracic bleeding is the main indicator for immediate surgery, whereas a retained hemothorax or minor diaphragmatic injuries are indicators for delayed surgery (Chang, Ryu & Ryu, 2018). Delayed haemothorax may be caused by a diaphragmatic injury or bleeding from a fractured rib, and is observed after a certain period of time (Al-Koudmani et al., 2012).

Key words: accidents,traffic; hemothorax; thoracostomy; rib fractures; wounds,non-penetrating.

CASE REPORT

We report a case of this uncommon situation involving a 65-year old gentleman with alleged motor-vehicle accident and sustained multiple right 2nd to 8th rib fractures. He was hospitalized for five days for close monitoring and pain management. Unfortunately, two days after his discharged at 7 days post-MVA, he presented to us again with shortness of breath and right chest pain. He was tachycardic (PR: 130 bpm), mildly tachypnoeic (RR: 20 breaths/min) and his SpO_2 was 90% under room air. The chest was dull to percussion and there was a marked reduced air entry all over his right lung area. Chest radiograph showed homogenous opacity all over the right lung field. Right thoracostomy tube was inserted, draining 800 mls of frank blood upon insertion and a total of 1250 mls within 12 hours. Packed cell was transfused and Tranexamic acid was given. Patient was given adequate analgesic therapy throughout hospitalization. The patient was later transferred to the nearest cardiothoracic centre for further management.

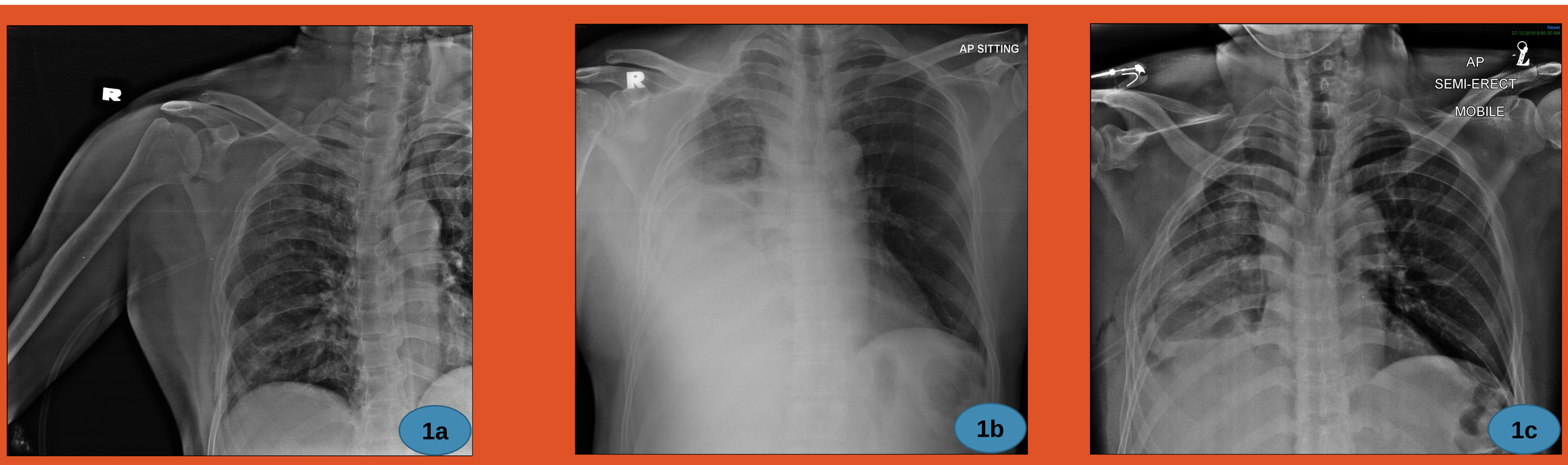

Fig. 1. Chest radiographs during the first and second admission following blunt chest trauma post-MVA. (a) The first chest radiograph following MVA showing right 2nd to 8th rib fractures (b) Chest radiograph taken at Day-7 post-trauma showing homogenous opacity of the right lung field. (c) Chest radiograph post-chest tube insertion at the Emergency Department showing signs of clearing up of the right lung field.

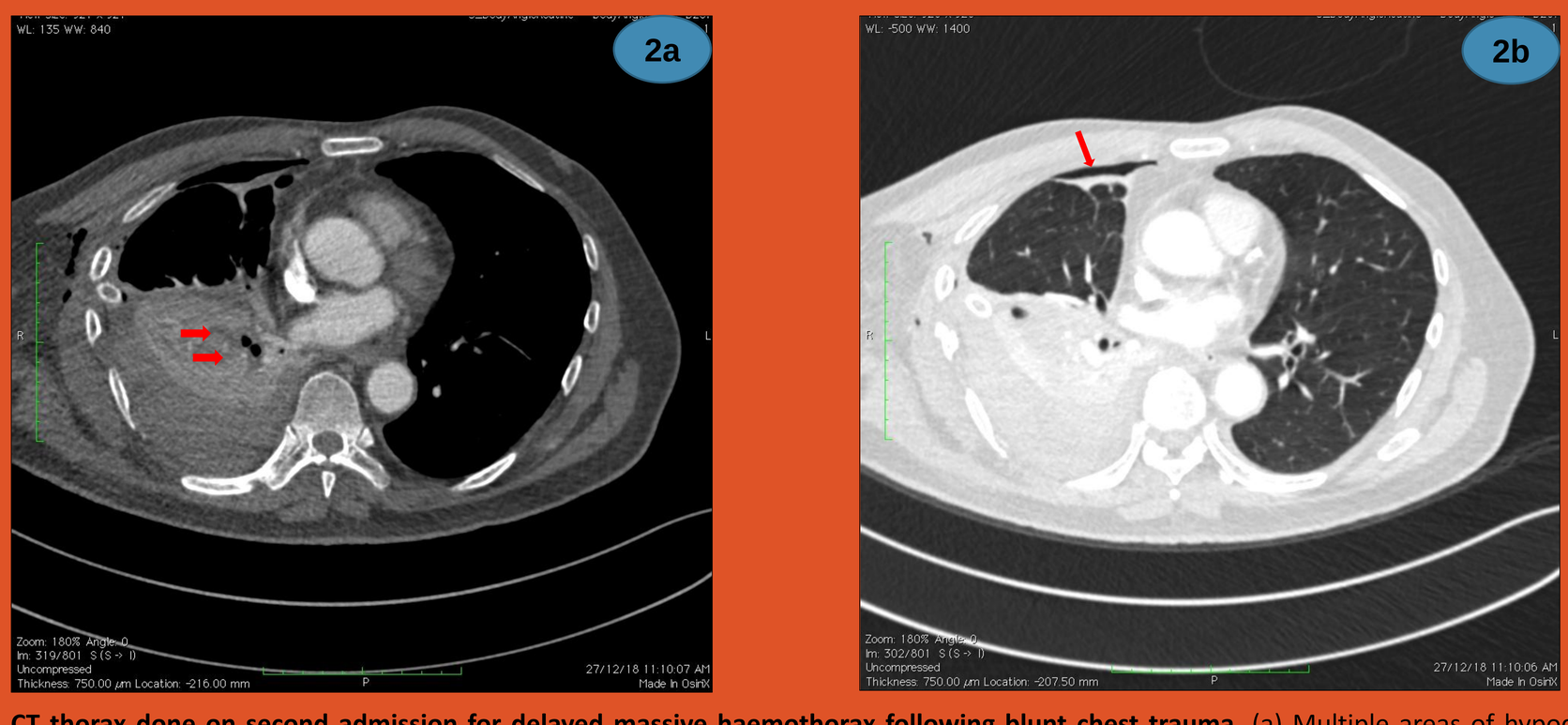

Fig. 2. CT thorax done on second admission for delayed massive haemothorax following blunt chest trauma. (a) Multiple areas of hypodense lesions *(red arrow)* in the right lower lobe suggestive of pulmonary laceration. (b) Minimal right pneumothorax *(red arrow)* and rib fractures.

DISCUSSION

- The possibility of delayed sequelae following blunt chest trauma should be communicated to the patient and the family to encourage vigilance and monitoring even after being discharged home from the initial hospital monitoring. Our patient was under close monitoring for 5 days following trauma with no red flags observed throughout hospitalization.
- Computed tomography scan plays a key role in the management of chest trauma with a considerable impact on the ensuing therapeutic decisions.
- Unfortunately, the patient presented to us again at Day-7 post-MVA (2 days after discharged home) with signs of acute respiratory failure. CT thorax showed right haemothorax with pulmonary laceration of the right lower lobe (Fig. 2a).
- Delayed massive haemothorax may result from intercostal or phrenic artery tearing, laceration of the diaphragm, or fractured ribs (Chen & Cheng, 2014) and the time delay between the trauma and the onset of presentation varied from 18 hours to 11 days (Yokosuka et al., 2014).
- We can consider the high-risk or the probability of massive haemothorax particularly in patients with a broken rib with sharp edges. This is so as even though the fractured rib is not severely displaced, the sharp edge may still injure the surrounding viscera.
- Thoracocentesis and chest tube placement are often adequate to save the lives of many thoracic trauma patients affected by pleural, lung or airway injuries (Guerrera et al., 2018).
- Despite rarely requiring emergency surgery, delayed massive haemothorax is potentially life-threatening.

CONCLUSION

- All patients with blunt chest trauma should be informed of the need for a close observation upon admission, even if the fractured rib is not severely displaced.
- Fractures of three or more sequential ribs and a flail chest are categorized as complex chest wall injuries and frequently associated with a significant degree of haemothorax.
- A rapid and accurate diagnosis and timely intervention are the keys to success in the management of trauma patients.

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