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RESEARCH ARTICLE

A RARE CASE OF MASSIVE INTRATHORACIC HAEMORRHAGE DUE TO INTERCOSTAL ARTERY AVULSION FOLLOWING A FALL

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Abstract

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Introduction:-

31 year old omani gentleman brought by ambulance from polyclinic with a significant history of chest trauma while he was playing football. He gained this trauma when he fell over his chest causing a direct trauma to his left chest wall. Left sided chest pain started immediately after the fall but the patient continued to play the game. Upon arrival to his house he was having a bath when he developed shortness of breath and was taken to the polyclinic. Patient was escorted to our emergency department four hours after the trauma happened. On arrival to the emergency room, he collapsed with transient unresponsiveness with a pulse, however he regained full consciousness upon optimizing ventilation with bag valve mask with 100% oxygen and intravenous fluids. His vital signs were as follows: temperature, 36.6 °C; pulse, 78 beats per minute with an irregular rhythm; respiratory rate, 36 breaths per minute; blood pressure, 110/74 mmHg; and oxygen saturation 100 with 100% oxygen via non-rebreather mask. His status on the Glasgow Coma Scale was 15 (E4V5M6), indicating he was conscious, alert and oriented. On examination, he was found to be drowsy with cyanosis, and restless.

His heart sounds were unremarkable. Cardiac apex was not palpable. His trachea was central, left-sided chest expansion was reduced with absent breath sounds on the left side of his chest. His abdomen was soft, non tender and no distention was seen. His neurovascular examination was unremarkable.

Venous blood gas (VBG) analysis revealed the following: pH, 7.29; partial pressure of carbon dioxide (PCO₂), 40.2 mmHg; bicarbonate (HCO₃⁻), 18.9 mmol/L; base excess, -7.13; potassium, 4.20 mmol/L; hemoglobin (Hb) 8.5 g/dL; and lactate, 3.3 mmol/L.

ECG showed sinus rhythm. Point-of-care ultrasound (POCUS) done revealed massive

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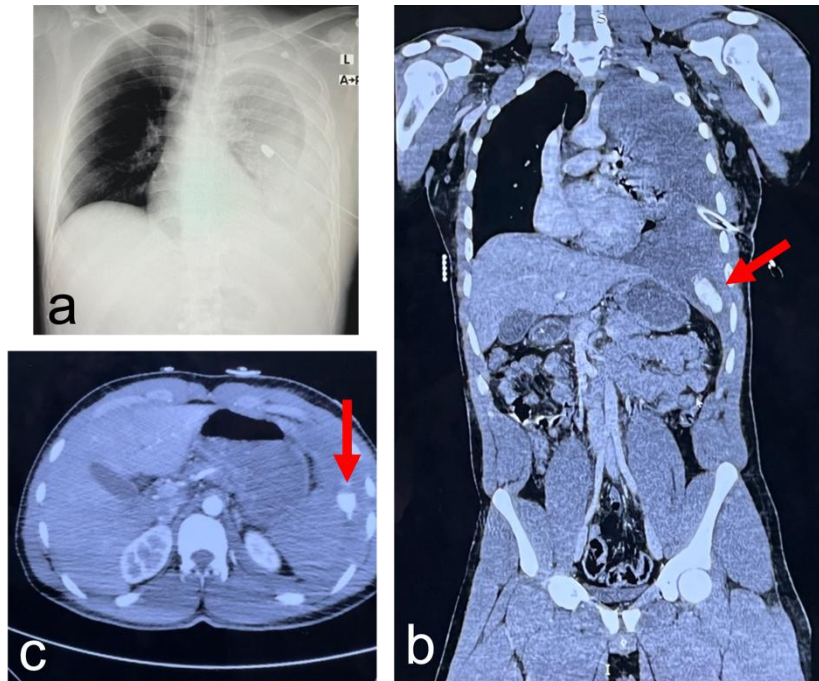


Fig. 1:- Chest radiography and computed tomography imaging findings of the patient. Chest radiography on arrival at emergency room shows left hemothorax (a). Computed tomography images (b; coronal section, c; cross section) show hemothorax and extravasation from the intercostal arteries (red arrow).

Left hemothorax and effusion with pneumothorax, no clinical sign of tension pneumothorax at the time of examination.

Chest radiography and computed tomography (CT) revealed massive left hemothorax with mild mediastinal shift to the right side. The lung is totally collapse. There is arterial active extravasation seen in the inferior lateral aspect of the hemothorax, adjacent to the ribs which increasing in the portovenous phase, likely to suggest arterial extravasation from intercostal arteries (Figure 1a-c). Echo cardiography done showed no pericardial effusion. A tube thoracostomy done under local anesthesia at the left fifth intercostal space initially drained 1100 mL of hemothorax. Blood pressure fell down 74/56 regained after he received a transfusion of 4 units of uncross-matched packed red blood cells (PRBCs) and tranexamic acid. A left Intercostal drainage tube (ICD) kept on place and the patient was admitted to the intensive care unit (ICU), but he experienced persistent chest tube drainage at a rate of >200 mL/hour, eventually reaching a total volume of 2250 mL. Despite resuscitation with another 4 PRBCs, 3 units of fresh frozen plasma (FFP) and IV fluids, patient became unresponsive with severe hypotension and bradycardia, blood pressure was 50/30 with noradrenaline 0.6 mcg ongoing, emergency left exploratory thoracotomy done under general anesthesia in which the patient found to have massive left hemothorax with active spurter bleeding from the intercostal vessels in the 8th intercostal space. Post-operatively, Patient was referred to chest physiotherapy and advised to use incentive spirometry. Patient was monitored till day 4 post operation. His left ICD was removed, his Hb was 9.2 and was discharged on oral antibiotics and oral pain medications. Patient was followed up in the surgical outpatient department with chest X-ray and he was doing well.