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Massive Haemothorax After Insertion of Double Lumen Haemodialysis Catheter Due to Injured Superior Vena Cava - A Case Report

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We report a 47-year-old male with a 10-year history of uncontrolled type I diabetes mellitus. He was irregular with medicines and follow up and was presented to the ED of another hospital with shortness of breath, shallow coughing and generalised edema and absence of urine formation for 5 days. Initial labs revealed normocytic normochromic anaemia, sr. urea of 20mmol/l and creatinine of 700 mmol/l with sr. potassium of 5.7meq/l.

Oxygen saturation was 77% at room air, and chest radiology revealed bilateral basal infiltrates suggestive of congestion and bilateral moderate pleural effusions. Blood pressure was 200/98mmhg.

In view of worsening clinical status, a decision was made to start haemodialysis. Ultrasound guided insertion of a dialysis catheter was undertaken. A double lumen catheter was inserted successfully in the Internal Jugular Vein and aspiration of venous blood was confirmed on a gas analyzer.

Before dialysis could be commenced, the patient suddenly developed respiratory distress. Oxygen saturation by pulse oximetry was 70% on high flow therapy with non-rebreather mask. Air entry was absent on the right side. Patient was immediately shifted to the pulmonology department.

Bedside ultrasound study showed presence of massive echogenic fluid in all zones of the right lung. Chest X-ray showed opaque hemithorax with mediastinal shift towards the left side. Ultrasound Guided aspiration revealed the presence of frank blood. Repeat guided aspirate was taken to rule out traumatic tap.

A 32F intercostal tube was inserted in the right 6th intercostal space and 3000ml of blood was drained in 500ml aliquots. Oxygen saturation improved to 92% on 2 litres per minute with nasal prongs. A femoral haemodialysis catheter was inserted and the patient was dialyzed to target. The offending catheter was removed.

The intercostal drainage was removed after 3 days following near complete expansion of the lung and the patient was discharged on room air on day 7.

Traumatic injury to the superior vena cava is a known but rare complication of insertion of haemodialysis catheters. This is in part due to large bore and relative inflexibility of the catheter leading to shearing of the vein.

Prompt bedside ultrasonography to identify patients with respiratory distress soon after insertion of a central venous catheter is paramount - to differentiate between pneumothorax and a rare occasion of hemothorax.

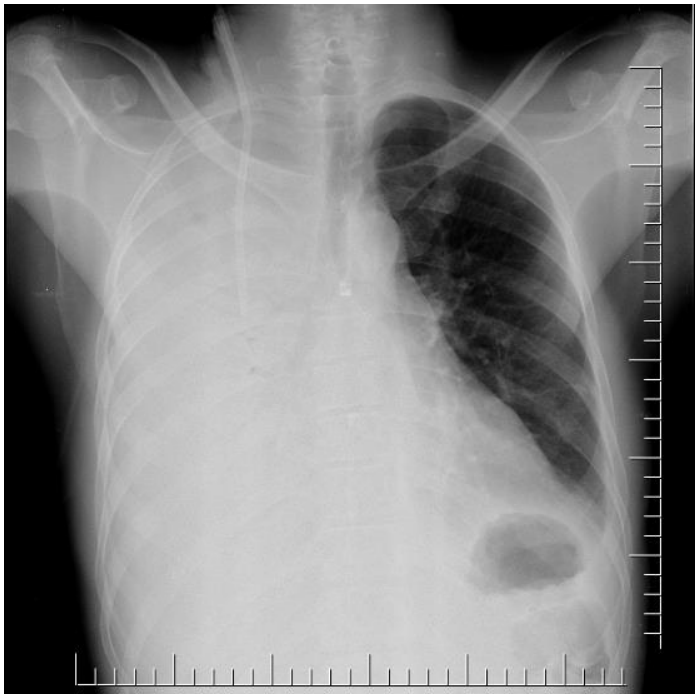

Image 1 - On presentation. Misplaced catheter can be seen.

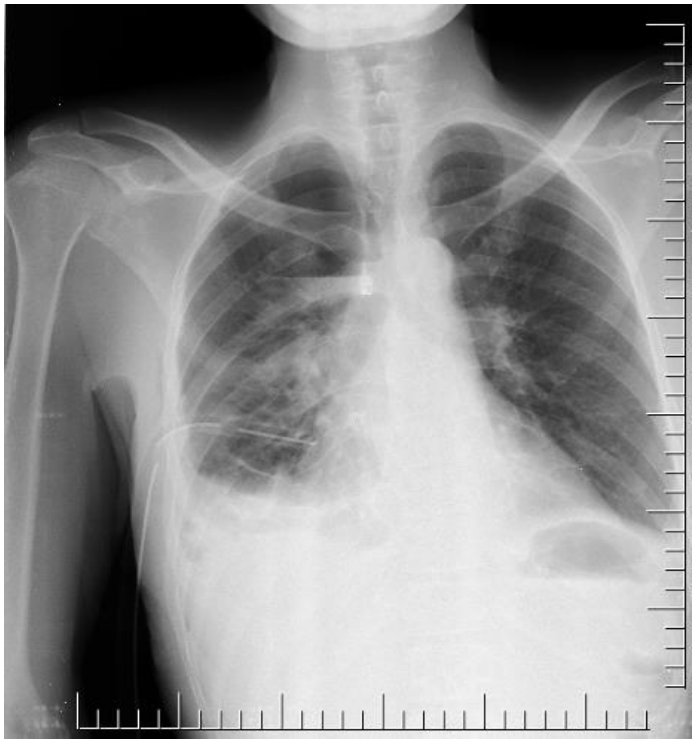

Image 2 - After insertion of intercostal drainage tube.

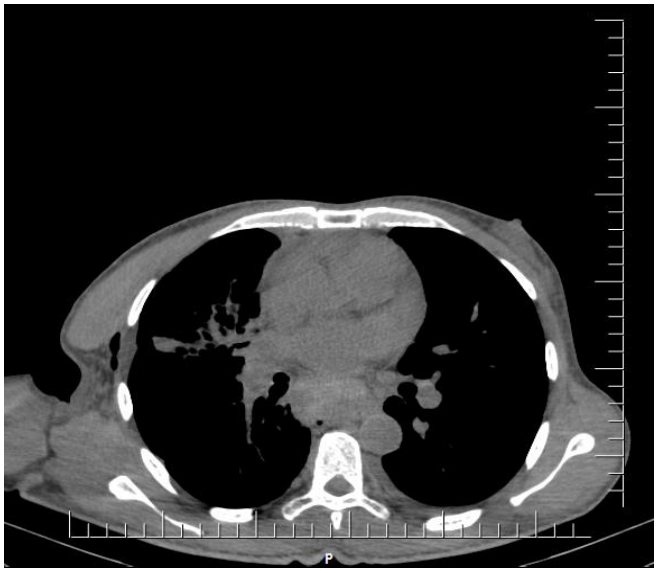

Image 3 - CT scan of the chest prior discharge. No residual fluid or blood. Small subcutaneous emphysema near the site of drainage tube insertion.