

**Azygous vein rupture after right
internal jugular vein cannulation:
A rare complication**

Sir,

Catheterisation of the internal jugular vein (IJV)

is commonly practiced for central venous access in intensive care unit (ICU); however, may cause significant complications such as internal carotid artery puncture, pneumothorax, vessel erosion, thrombosis, airway obstruction and infection. Here, we have reported an unusual; however, dreaded complication of IJV cannulation.

A 45-year-old male patient admitted to ICU with burn over chest (20%) and bilateral lower limb crush injury with cellulitis. Patient was haemodynamically stable and maintained oxygen saturation ($SpO_2 >95\%$) on the face mask. In view of poor venous access, the central venous cannulation in right IJV was planned. Under full aseptic precaution, right IJV was cannulated in 2nd attempt, triple lumen was inserted using seldinger technique and fixed at 12 cm after confirming backflow. A check X-ray chest was carried out, which showed tip of central venous (CV) line in 2nd intercostal (IC) space. Four hours after CV line placement, the patient complained of difficulty in breathing, chest pain, falling oxygen saturation and became haemodynamically unstable (BP <90/50 mm Hg). To rule out pneumothorax, repeat X-ray chest was carried out and it showed right haemothorax. The patient condition further deteriorated and was intubated and put on ventilatory support. Even with ventilator support, he was not maintaining saturation ($SpO_2 <92\%$) and blood pressure continued to fall and inotropic support was started (Dopamine infusion 6-10 mcg/kg/min). A diagnostic tap was carried out, 200 ml of hemorrhagic fluid was aspirated and intercostal drain (ICD) was put in the 5th IC space. ICD drained 1200 ml of hemorrhagic fluid within 30 min. Patient was transfused two packed red cells. Haemodynamic parameters improved (BP = 100/60 mm Hg and $SpO_2 >95\%$). Six hours after ICD placement his haemodynamic again became unstable. ICD repositioning was carried out, a contrast enhanced computed tomogram (CECT) chest was carried out, which showed a right hemothorax with mediastinal shift. Thoracic team decided to do an emergency video assisted thoracic surgery (VATS). During the VATS, 2.5 l of collected blood was evacuated and a puncture in the azygous vein was visualised. Bleeding point in the azygous vein was repaired and the patient was shifted to ICU [Figure 1]. Patient condition improved, haemodynamics stabilised and was extubated on the 2nd post-operative day. ICD was removed on 4th post-operative day.

Rarer vascular injuries during the central vein

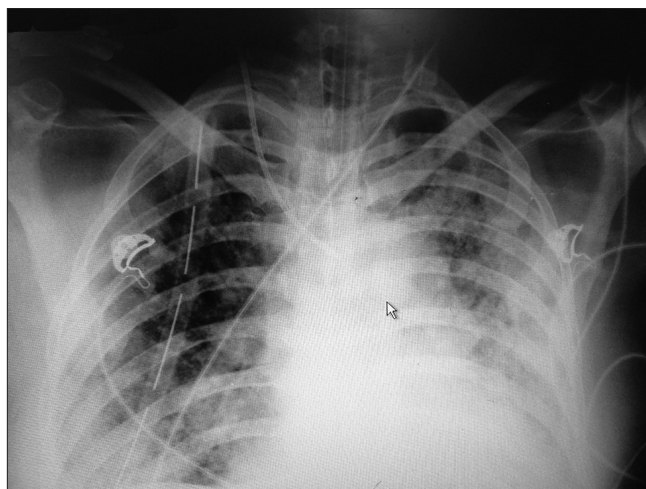


Figure 1: Post-procedure X-ray chest

cannulation are reported and impose serious adverse effects.^[1] Two retrospective reviews highlighted the possibility of central line migration in azygous vein; however, all of these catheters were placed from the left (subclavian vein, peripherally inserted central (PICC) line, and IJV) side and had 19% venous perforation.^[2,3] Our report is 1st one, which highlights the azygous vein rupture during right sided cannulation of IJV. The injury might result either during guide wire insertion or dilatation phase. Vigilant monitoring and timely intervention could save the life of this patient. In conclusion, one should always suspect azygous vein rupture in patient with right hemothorax after right IJV cannulation if other possible causes have been ruled out.

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