

## Massive haemoptysis and endotracheal tube blockade during subclavian vein cannulation

Sir,

An 80-year-old female with coronary artery disease and severe mitral regurgitation was on ventilatory support. She was on tablet Clopidogrel 75 mg and Ecosprin 150 mg daily. Her platelet count was 2.5 lakhs/mm<sup>3</sup>, prothrombin time 13.2 seconds and international normalised ratio of 1.1. Central line insertion in right subclavian vein (SCV) was planned for intravenous medication and fluid therapy. Three attempts were made with an 18G needle to puncture the SCV. During puncture the patient coughed and massive haemoptysis occurred through endotracheal tube (ETT). Suction was applied to prevent asphyxiation. The patient desaturated, became bradycardic and hypotensive. FiO<sub>2</sub> was increased to 1.0 and about 250 ml of colloids was infused through previously placed peripheral line. Blood pressure improved only after norepinephrine infusion. Intravenous tranexamic acid was given followed by tranexamic acid and epinephrine through ETT to control haemoptysis. About 300 ml of blood was suctioned out. Then central line was inserted through right femoral vein. After 1 hour of the event, ventilator showed high airway pressure and low expiratory tidal volume alarms. On manual ventilation, partial airway obstruction was appreciated and a 14FG suction catheter could not be passed through the ETT. After removal of ETT, a clot was found at the tip partially blocking it. Trachea was intubated with new 7.5 mm ETT and mechanical ventilation continued. Clinically chest was clear bilaterally on auscultation except diminished breath sound over right upper lobe area. On chest X-Ray there was opacity in right upper lobe and no evidence of pneumothorax or widening of mediastinum.

The SCV is preferred for central line insertion because of greater longevity without infection, line security *in situ*, avoidance of phlebitis, larger lumens. The risk factors of complications are operator inexperience, multiple attempts, body mass index >30 or <20, previous catheterisation and with difficult anatomy.<sup>[1]</sup> The haemoptysis is mild and self limited in lung parenchymal injury, but can be critical

in coagulopathy or chronic lung disease.<sup>[2]</sup> Massive haemoptysis is called as when blood loss is 100-600 ml per day,<sup>[3]</sup> but amount of blood loss during haemoptysis is not easy to measure because significant amount of blood may remain in lung. In this case, the cause of haemoptysis may be injury to lung parenchyma by puncture needle. The opacity in the chest X-Ray may be due to blood aspiration.

Chest X-Ray, CT scan and bronchoscopy should be done for localisation of exact site of bleeding. CT scan provides road map for bronchoscopy.<sup>[4]</sup> In this case, CT was not done as haemoptysis had stopped and the patient was haemodynamically unstable. Bronchoscopy was not done due to unavailability. The usual cause of death is due to asphyxiation<sup>[5]</sup> for which trachea should be intubated, lungs ventilated and adequate suction applied. The bleeding side should be kept down. Tranexamic acid can be given through both IV and ETT to control haemoptysis.<sup>[3]</sup> Fiberoptic bronchoscope further helps to occlude the affected bronchus by balloon catheter and local application of cold saline, epinephrine, thrombin, fibrinogen, recombinant factor VII, and *n*-butyl cyanoacrylate glues.<sup>[6]</sup> If haemoptysis still continues bronchial artery embolisation should be considered. In the last resort it should be managed surgically.<sup>[5]</sup>

Even with normal coagulation profile, precautions should be taken in patients who are on antiplatelet therapy and in difficult cases help of ultrasonography should be taken.

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