

An unusual complication of a central venous catheter placement

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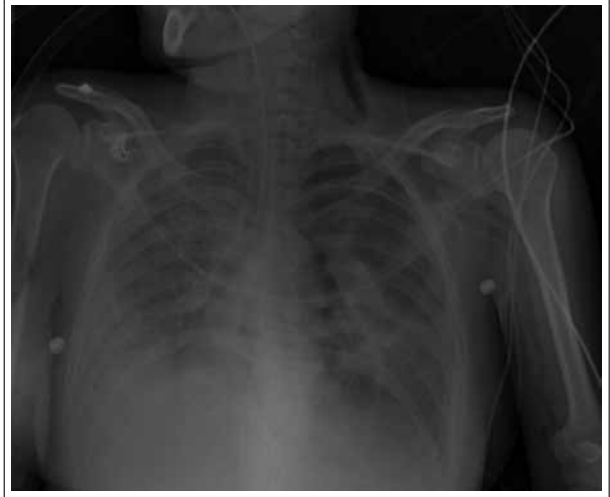
CASE REPORT

A 46-year-old woman was admitted to the intensive care unit with progressive liver failure. She was put on mechanical ventilation because of progressive respiratory failure and adult respiratory distress syndrome (ARDS). A central venous catheter was inserted in the left subclavian vein. During the procedure, air was aspirated and a pneumothorax was suspected. Afterwards, plain radiography of the chest was taken (*figure 1*).

WHAT IS YOUR DIAGNOSIS?

See page 44 for the answer to this photo quiz.

Figure 1. X-ray of the thorax after placement of a central venous catheter in the left subclavian vein



ANSWER TO PHOTO QUIZ (PAGE 40)

AN UNUSUAL COMPLICATION OF A CENTRAL VENOUS CATHETER PLACEMENT

Besides alveolar oedema in both lungs, a pneumothorax is shown on the left as was suspected. Also, subcutaneous emphysema is shown in between the lateral neck

musculature together with a pneumovenogram of the veins of the left upper arm. Air embolism is a rare complication of insertion or removal of central venous catheters but can lead to cardiac arrhythmias, obstruction of the pulmonary outflow tract, acute cor pulmonale and asystole, depending on its volume. Also, when moving to the arterial circulation via patent foramen ovale, it can lead to ischaemic events. Gas embolism complicates 2.65 of 100,000 hospital admissions and is associated with high morbidity and mortality.¹ Treatment varies from putting the patient in the Trendelenburg position, 100% oxygen flow or hyperbaric oxygen treatment in order to reduce the volume of the embolus by diffusion of oxygen to the plasma. Luckily, our patient did not have any of the complications mentioned above and a chest tube was inserted to treat the pneumothorax. After a few weeks she was discharged from the ICU.

Conclusion: Pneumovenogram of the arm after placement of a central venous catheter.

Figure 2. Intubated patient with a central venous catheter in the left subclavian vein.



Arrow 1 shows a pneumothorax on the left with a shift of the mediastinum to the right and pulmonary oedema of the right lung. Arrow 2 shows subcutaneous emphysema and arrow 3 a pneumovenogram of the upper left arm.

REFERENCE

1. Bessereau J, Genotelle N, Chabbaut C, et al. Long-term outcome of iatrogenic gas embolism. *Intensive Care Med.* 2010;36:1180-7.