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PHOTO QUIZ

Right subclavian vein cannulation?

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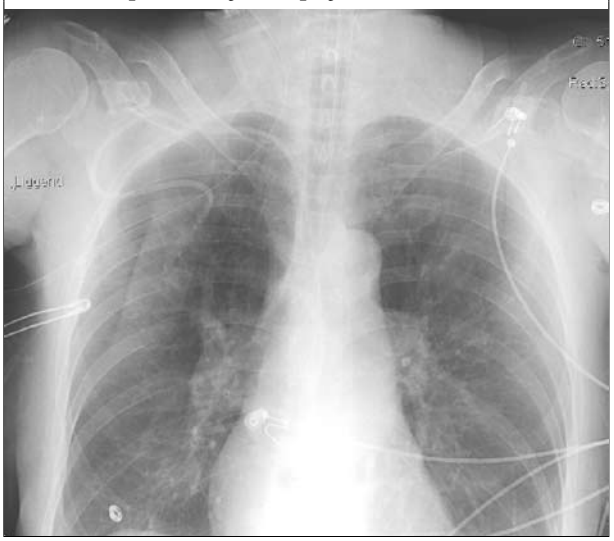
CASE REPORT

A 57-year-old female patient presented with respiratory failure and sepsis. On admission a central venous catheter was inserted into the right subclavian vein. The procedure was unremarkable and the postinsertion chest X-ray showed a properly placed central venous catheter. However, after connection, infusion proved to be impossible.

WHAT IS YOUR DIAGNOSIS AND WHAT IS YOUR NEXT STEP?

See page 430 for the answer to this photo quiz.

Figure 1. *Conventional chest radiograph with abnormal position of the tip of central venous catheter*



ANSWER TO PHOTO QUIZ (ON PAGE 429)
RIGHT SUBCLAVIAN VEIN CANNULATION?

In hindsight, the nearly symmetrical chest X-ray (*figure 1*) showed an aspecific position of the central line: deviation of the catheter to the midline and the position of the tip above the left ventricle. Cannulation of the right subclavian artery was confirmed by pressure tracings. The catheter was removed surgically without further complications.

DISCUSSION

Arterial puncture, pneumothorax and haematoma are the most common mechanical complications during the insertion of central venous catheters. The frequency of puncture of subclavian artery varies between 3 and 5%.[1] After cannulation of the subclavian or carotid artery, there are usually no adverse complications.[2] Some authors advocate the use of ultrasound guidance.[3] However, Mansfield *et al.*[4] showed no difference in prevention of iatrogenic cannulation using ultrasound guidance in a prospective randomised trial.
In our hospital insertion of a central venous catheter is not performed routinely with the use of ultrasound guidance.

DIAGNOSIS

Insertion of a central venous catheter with inadvertent cannulation of the subclavian artery.

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2. Polderman KH, Girbes AR. Central venous catheter use. Part I. Mechanical complications. Intensive Care Med 2002;28:1-17.
3. Randolph AG, Cook DJ, Gonzales CA, et al. Ultrasound guidance for placement of central venous catheters: a meta-analysis of literature. Crit Care Med 1996;24:2053-8.
4. Mansfield PF, Hohn DC, Fornage BD, et al. Complications and failures of subclavian-vein catheterization. N Engl J Med 1994;331:1735-8.

Figure 1. *Conventional chest radiograph with abnormal position of the tip of central venous catheter (arrow)*