CASE REPORT

An endless line on the chest radiograph

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SUMMARY

A 40-year-old male patient had his right femoral vein catheterised following admission with altered conscious state from polypharmacy overdose. The procedure was documented as successful and uncomplicated. A postprocedural chest radiograph demonstrated a linear metallic opacity projecting over the superior vena cava and inferior vena cava (SVC and IVC, respectively), with superior and inferior ends not visualised. This did not alert the attending radiologist and intensivist who might have assumed such a metallic object to be external to the patient. Only the central line was removed prior to patient discharge 2 days later. The patient died 2 years later from unrelated streptococcal pneumonia complicated by septicaemia and multiorgan failure. The postmortem discovered a central venous guidewire in the IVC across the right atrium into SVC.

BACKGROUND

Percutaneous catheterisation of central vein is a frequently performed procedure in the perioperative setting or in a critically ill patient. The complication rate can be greater than 15%,¹⁻³ which includes cardiac arrhythmia, vessel or cardiac perforation, kinking, breakage or loss of guidewire.⁴ Intravascular loss of guidewire is not common and is usually discovered during the procedure. We present a case of loss of central venous guidewire in a patient that was only discovered 2 years later during a postmortem. This case report outlines the events leading up to the discovery and lessons to be learnt from such an incident. Publishing such a specific error is unusual and this needs to change as it inhibits learning from others' errors and dissemination of useful preventative measures.

CASE PRESENTATION

A 40-year-old male patient was admitted to the intensive care unit (ICU) of a tertiary hospital in an altered conscious state following accidental polypharmacy overdose. A right femoral triple-lumen central venous catheterisation was performed in the ICU. The procedure was documented as successful and uncomplicated with no reference to breakage or malpositioning of the guidewire during the procedure. A postprocedural chest radiograph demonstrated a linear metallic opacity projecting over the superior vena cava and inferior vena cava (SVC and IVC, respectively) with superior and inferior ends not visualised (figure 1). This did not alert the attending radiologist and intensivist who might have assumed such a metallic object to be external to the patient. Only the central line was removed prior to patient discharge 2 days later.

Figure 1 Chest radiograph demonstrating a linear metallic opacity projecting over the superior vena cava and inferior vena cava with both superior end and inferior end not visualised. Arrow indicating the opacity continuing below the right hemidiaphragm.

The patient died 2 years later from unrelated streptococcal pneumonia complicated by septicaemia and multiorgan failure. The postmortem discovered a central venous guidewire in the IVC across the right atrium into SVC.

DISCUSSION

Intravascular loss of guidewire is not common and is usually discovered during the procedure. The guidewire left in situ may or may not be symptomatic.⁴ In our case, it may be assumed that the operator was not aware of the loss of guidewire as no such documentation was made and the X-ray request did not mention such a complication. It is important for radiologists and clinicians to account for all catheters and wires on chest radiographs. There are not many lines on chest radiographs with no visible superior or inferior ends. These include the ventriculoperitoneal shunt and sometimes the enteric tubes. Any other unexplained 'endless' line warrants further investigation.

This is the first time that a 'lost' central venous guidewire discovered postmortem has been reported in the literature. The aim of this case report is not to attribute blame but to highlight the importance of adhering to strict Seldinger's technique, credentialing of practitioners performing central vascular catheterisation and the potential danger of assuming opacities seen on radiographs that are unusual or do not make clinical sense are artefactual or external to the patient. Furthermore,

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publishing such a specific error is unusual and this needs to change as it inhibits learning from others' errors and dissemination of useful preventative measures.⁵

Learning points

- ▶ Proper credentialing of practitioners including strict adherence to Seldinger's technique is vital in central vascular catheterisation.
- ▶ All catheters and wires need to be accounted for on radiographs.
- ▶ Medical errors must be avoided at all cost but publication of such errors will increase awareness allowing for preventative measures to be instituted.

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