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Accidental transection of a radial artery cannula

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DESCRIPTION

Continuous display of arterial waveform is a useful adjunct in monitoring of complex surgical cases. The non-dominant radial artery is the vessel of choice in the absence of peripheral vascular disease.

A patient underwent an aortic valve replacement and coronary artery bypass grafts. On postoperative day 2, while cutting the dressing surrounding the radial artery 20-gauge BD insyte cannula (Becton Dickinson, Swindon, UK), it was accidentally transected. Bleeding led to the application of digital pressure. This caused migration of the transected cannula into the radial artery. A retained fragment located completely within the radial artery was confirmed with ultrasound imaging using Sonosite (SonoSite Inc, Bothell, Washington, USA). Initial attempt was made to retrieve it surgically but failed to localise the cannula. On subsequent x-ray imaging of the hand (figure 1), the cannula had migrated distally and could be seen at the base of the first metacarpal. The patient was asymptomatic with no evidence of ischaemia in the hand. The transected cannula was then retrieved percutaneously. Access was

gained to the left brachial artery above the level of the elbow joint under ultrasonic guidance using a micropuncture set. A 5-French sheath was then placed. A 4-French guide catheter was negotiated into the right radial artery. Angiography confirmed the presence of the foreign body within the distal radial artery (figure 2). The cannula was removed using a snare (Micro Elite 4 mm Vascular Solutions; figure 3). Checked angiography showed some spasm but no other abnormality. Haemostasis was achieved using manual compression. No complications arose in the hand following removal of cannula.

Distal embolisation of foreign bodies are uncommon and result from missile injuries.¹ The concern associated with embolisation of foreign bodies is distal ischaemia and should be retrieved if possible.²

Transection of radial artery cannula is rare.³ In similar cases reported, an arterial line fractured during suturing,² and ultrasound was used to localise the foreign body.⁴ Percutaneous retrieval of intravascular foreign bodies is not a new concept, snares are often used when the foreign body has a free end or doubled-over segment that

Figure 1 x-Ray showing cannula at base of first metacarpal.

Figure 2 Angiogram showing cannula.

can be surrounded.⁵ In our case the initial attempt to retrieve the foreign body failed due to migration and further exploration distally would have resulted in extensive tissue damage and loss of function of the hand. In the current era, interventional radiology provides an alternative and safe option of foreign body retrieval.

Our case highlights the importance of the role of interventional radiology in removal of foreign bodies from

peripheral arteries and should be considered as first line options in such incidents to limit damage to the vascular tree.

Learning points

- ▶ Special attention should be paid while removing the arterial cannula to avoid such complications.
- ▶ In the event of embolisation of foreign bodies into distal arteries, it should be removed to prevent distal ischaemia.
- ▶ Importance of interventional radiology in retrieval of foreign bodies from peripheral arteries.

Competing interests None.

Patient consent Obtained.

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Figure 3 Snare with removed cannula.

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Please cite this article as follows (you will need to access the article online to obtain the date of publication).

Imran Hamid U, Collins A, McConkey C, Sidhu P. Accidental transection of a radial artery cannula. *BMJ Case Reports* 2012;10.1136/bcr-2012-006753, Published XXX

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