Lasso technique for retrieving a broken, dislocated port-a-cath fragment

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A 52-year-old woman suffering from breast cancer had a port-a-cath implanted to administer chemotherapy. A port-a-cath (a portmanteau of portal and catheter) consists of a reservoir compartment (the portal) which has a silicone bubble for needle insertion (the septum) mounted to the catheter. Six and a half months after implantation, she complained of palpitations. An ECG showed sinus rhythm with premature atrial complexes. An X-ray showed dislocation of the distal tip of the catheter with migration into the right atrium (RA) and right ventricle (RV).

To remove the port-a-cath fragment, we performed a right heart catheterisation by inserting an 8 French sheath into the femoral vein. Using the lasso technique, a long standard guide wire (0.018 inch, 260 cm) was advanced through the lumen of the 7 F intervention catheter (MPA-1, Cordis, Vista bright tip, 100 cm, .078 ID), as shown in figure 1. By manipulating and applying traction to both ends of the guide wire and the catheter, we were able to adjust the diameter and direction of the loop to capture and secure the broken, dislocated port-a-cath fragment. This was then drawn up to the tip of the intervention catheter (figure 2) and successfully removed by extracting the intervention catheter outside the sheath. By both collapsing and banding the broken port-a-cath fragment at its mid-point, the sharp barbs at the end of this were directed away from the vein wall, thus minimising injury during

Figure 1. Port-a-cath fragment.

Figure 2. Retrieval of port-a-cath fragment.

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Figure 3. Port-a-cath fragment migrated into the right ventricle.

Figure 4. Retrieval of port-a-cath fragment.

extraction. There was no bleeding or vascular damage to the vena femoralis. Follow-up with lab tests, ECG and echocardiogram showed no abnormalities.

In another patient, we used the same technique to successfully remove a dislocated port-a-cath fragment that had migrated into the RV (figure 3). This 45-year-old female, who was also being treated with adjuvant chemotherapy for breast cancer, was referred to us because of a complicated surgical removal of this port-a-cath as a result of accidentally cutting the distal tip during the operation. In this case we had to use a second catheter via the left femoral vein. We used this second catheter to 'push' the distal tip of the migrated port-a-cath in order to capture it with the loop of the guide wire of the first catheter (figure 4). Again, there was no bleeding or vascular damage to the vena femoralis, and follow-up with lab tests, ECG and echocardiogram showed no abnormalities.

Discussion

It has been estimated that fewer than 1% of indwelling venous catheters fracture.¹ The aetiology might be associated with the pinching effect of the catheter as it passes between the clavicle and the first rib.² Fractures can be minimised by instructing the patient to abstain from heavy physical activities or shoulder movements.³ Once a fracture has occurred, the fragment should be located and removed as soon as possible to prevent life-threatening dysrhythmias and other complications.^{3,4}

In short, the lasso technique offers a relatively simple technical procedure for retrieving broken, dislocated port-a-caths without the need for special devices, general anaesthesia and/or surgical intervention. ■

References

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- 3 Chang CL, Chen HH, Lin SE. Catheter fracture and cardiac migration—an unusual fracture site of totally implantable venous devices: report of two cases. *Chang Gung Med J* 2005;28:425-30.
- 4 Damodaran O, Mallesara G. A rare complication of port-a-cath use. *N Z Med J* 2005;118:U1777.

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