

## Letter to the Editor

# Percutaneous Transvenous Retrieval of Intracardiac Port-A Catheter Using a Snare

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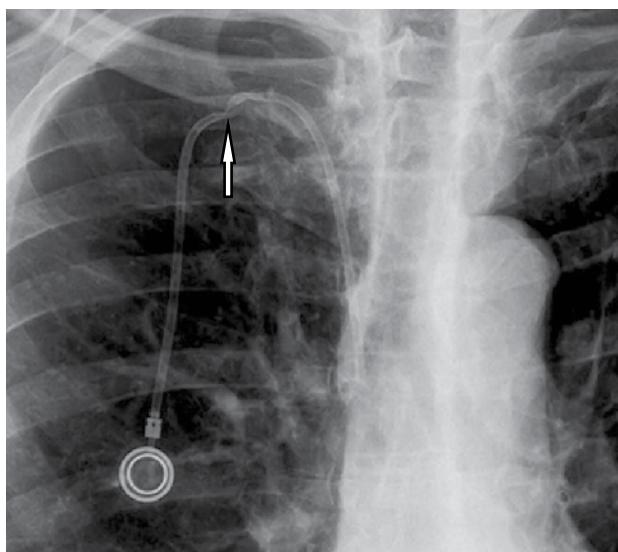
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**A** male patient, 74 years of age, had been followed up for metastatic colorectal cancer since 2001. A vascular access port catheter (port-a-catheter) was surgically inserted via the right subclavian vein for administration of chemotherapeutic drugs 10 years ago. After the port-a-catheter stopped functioning recently, a chest X-ray was taken for evaluation of its status, revealing that the catheter was seriously twisted and nearly broken at its middle portion in the infraclavicular region (Figure 1). Although the image of the catheter was quite definite, we thought that the damage might have been overestimated and therefore no attempt was made to withdraw the whole catheter before it broke off completely. However, several weeks later, thoracic computed tomography imaging, which was performed for routine follow up of the cancer (Figure 2), incidentally demonstrated that a totally detached catheter fragment had been dislodged into the posterior region of the right atrium.

The patient was transferred to the catheterisation laboratory and fluoroscopic imaging revealed the catheter fragment situated posteriorly, extending to the right ventricular apex (Figure 3). Percutaneous transvenous removal of this catheter fragment was scheduled. For this purpose, a gooseneck retrieval catheter was introduced using the standard technique via

a right femoral venous sheath, then advanced and guided to the right ventricle. The retrieval catheter was then opened and the entrapped catheter fragment was caught with the snare after repeated manipulations. The catheter fragment was held tightly by the retrieval catheter and carefully pulled back into the inferior *vena cava* (Figure 4). The entire system, the retrieval catheter with the captured catheter fragment, together with the 7F femoral sheath, were then all retracted and removed (Figure 5). The procedure was uneventful and the patient was discharged home after 24 hours' observation.

The implantation of central venous access devices has increased, especially in those patients who require chemotherapy and parenteral nutrition. A fractured port-a-catheter is a rare complication; however, it necessitates immediate removal of the fragmented segment of the catheter because if the dislodged fragment migrates into the heart, it might cause pulmonary embolisation, with fatal consequences. The percutaneous transvenous approach using central venous access has become the most common technique for removing intravascular foreign bodies, since the first report published by Thomas et al.<sup>1</sup> In recent years, this technique has been accepted as a safe and standard approach for removing a fractured catheter fragment.<sup>2</sup> The percutaneous retrieval is most commonly per-



**Figure 1.** Chest X-ray showing a port-a-catheter infusion system inserted via the right subclavian vein, which is seriously twisted and nearly broken off at its middle portion in the infraclavicular region.

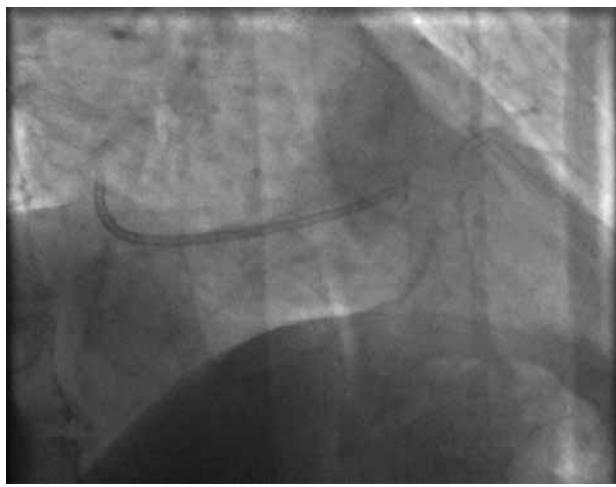
formed through central venous catheterization using a femoral, subclavian, or internal jugular vein.<sup>3</sup> A forearm peripheral intravenous access site can also be used for percutaneous removal of a catheter.<sup>3,4</sup>

The total incidence of fracture or dislodgment of a central venous catheter is between 0.2-1%.<sup>5</sup> Fractured catheters can be diagnosed incidentally on imaging in an asymptomatic person, as in our patient, or can present with various clinical manifestations. The common locations of a fractured catheter tip are the right atrium, right ventricle, and pulmonary artery.<sup>5</sup> The dislodged migrated fragment of the catheter should be removed as soon as possible, as it can lead to serious complications secondary to embolization and/or infection.<sup>5</sup>

In conclusion, dislodgement and subsequent migration of the catheter of a port-a-cath infusion system can lead to serious complications, such as cardiac arrhythmias, vascular or cardiac perforation, and pulmonary embolisation. As our case demonstrates, percutaneous transvenous retrieval of intracardiac for-



**Figure 2.** Multi-projection reformatted computed tomography image showing the foreign body in the right atrium.



**Figure 3.** Right caudal oblique fluoroscopic imaging showing the dislodged catheter fragment situated posteriorly and extending to the right ventricle apex.



**Figure 4.** Anteroposterior fluoroscopic view showing the catheter fragment snared and pulled back into the inferior *vena cava* by the gooseneck retrieval catheter.



**Figure 5.** Image depicting the entire system composed of the retrieval catheter and the captured catheter fragment, together with the 7F femoral sheath.

ign bodies, including an entrapped port-a-catheter fragment, is safe and technically feasible and can be performed successfully.

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