

Facilitating retrieval of embolized devices: Sheath-in-sheath-technique for device retrieval

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Introduction:

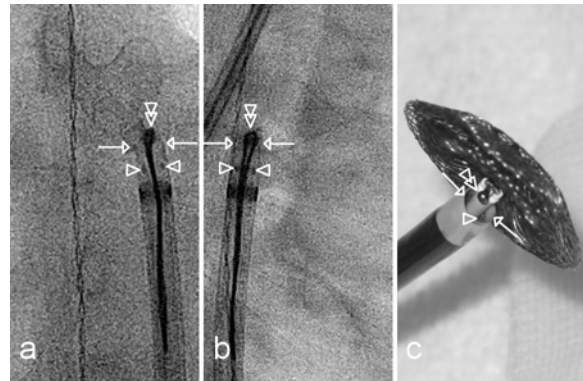
Embolization of devices after deployment of the device is a known complication. Sometimes interventional retrieval of an embolized device can be a difficult task. Several techniques using different snares or other retrieval tools are known. Even if the device is perfectly snared at the tip of the device, re-entry of the device in the sheath is often difficult because the tip of the device might get stuck at the rim of the sheath due to insufficient centralization of the device by the snare. Usage of the dilatator as a guide for the snare wire is some cases helpful but has the disadvantage of a relatively stiff system, which can not easily be handled. We describe a novel method that combines full flexibility of almost any catheter as a guide for the snare wire and centralization of the caught device in the sheath.

Method:

Retrospective case study.

Results:

15 hours after attempted closure of an ASD with a 10,5mm Figulla Flex ASD occluder (Occlutech) the device embolized to the transverse aortic arch. Due to the anatomy and the position of the device the tip was only successfully snared with a Multisnare wire (pfm) through a 5F Amplatzer Right 3,5 catheter (Cordis). To achieve a centralization of the catheter with the snared device in the 10F sheath (St. Jude) we used a second 7F sheath (Terumo) in the first sheath. The device was retrieved without complications.



The figure shows fluoroscopy images in a-p (a) and lateral (b) projection as well as the as the device retrieved with the sheath-in-sheath technique ex vivo. The arrows mark the rim of the outer 10F sheath, the arrowheads mark the radiopaque marker of the inner sheath (a,b) and the tip of the inner sheath (c) respectively and the double-arrowheads mark the nicely centralized ball tip of the occluder.

Conclusion:

The sheath-in-sheath-technique is a helpful way to combine the advantage of a flexible and easily handled catheter and centralization of the snare in the sheath for facilitated retrieval of embolized devices.