

Iatrogenic embolism caused by fractured vascular port: successful endovascular treatment

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A 41-years-old male with diagnosed diffuse large B-cell lymphoma in the relapse phase was admitted to the Cardiac Care Unit (CCU) due to the embolization of the distal part of the central venous port (Vascuport®) implanted via the right subclavian vein, to the right pulmonary artery. Computed tomography scan before CCU admission demonstrated the 11-centimeter-long fragment of a vascular port, with the proximal part close to the pulmonary trunk bifurcation, and the distal part in one of the subsegmental branches of the right pulmonary artery. At admission, the patient was hemodynamically stable. The patient was consulted within a multidisciplinary Pulmonary Embolism Response Team (PERT) to — Centre for the Management of Pulmonary Embolism (CELZAT) in Warsaw [1]. Although the PERT is not dedicated to iatrogenic embolism, PERT consultation was considered useful to improve clinical decision-making and facilitate immediate treatment. Considering the risk of thrombus formation, secondary infections, pulmonary infarction, and potential erosion to a bronchus [2], the patient was qualified for the interventional retrieval of the foreign body. The chest X-ray in the catheterization laboratory confirmed the presence of the detached fragment of port 1 (Figure 1A). A flexible, 3-dimensional snare with high vertical strength and large capture capacity (Exeter Snare 15; Cardiva, Alcobendas, Spain) was inserted into the right pulmonary artery via the right femoral vein using the 7 French 90 cm sheath (Cook Medical, Bloomington, IN, US). The entire port fragment was pulled into the sheath and externalized (Figure 1B–D, Supplementary material, Video S1).

The majority of central vascular ports are inserted via a subclavian vein, which is a risk factor of the port detachment, frequently due to the pinch-off syndrome [2]. The pinch-off syndrome occurs when the catheter is intermittently compressed between the clavicle and the first rib and trapped between the subclavian muscle and the costoclavicular ligament. To prevent it, the puncture should be done in the lateral rather than the medial part of the subclavian vein. Still, X-ray check-ups are important to diagnose asymptomatic port fracture [2].

The embolized fragments of ports usually migrate to right-sided heart chambers, pulmonary arteries, and their subbranches and may cause numerous secondary complications [3, 4]. Our case report demonstrates that intravascular foreign bodies can be successfully removed by a minimally invasive, endovascular procedure. Although in this case the catheter was removed using a commercially available snare, “homemade” snares were also reported as inexpensive and safe devices to retrieve foreign bodies [5]. A “homemade” snare can be made from a conventional guidewire to create the loop, a balloon to stabilize it, and a guiding catheter to insert it. The size of the snare loop can be adjusted by moving the wire backward and forwards. Although this technique was initially developed for chronic total occlusion interventions, it might also prove useful for intravascular removal of iatrogenic foreign bodies [5].

Altogether, even if the patient with a foreign body is asymptomatic, the benefits of endovascular removal seem to outweigh the procedural risk. Standardized treatment based on the local experience is the clue to successful foreign body externalization.

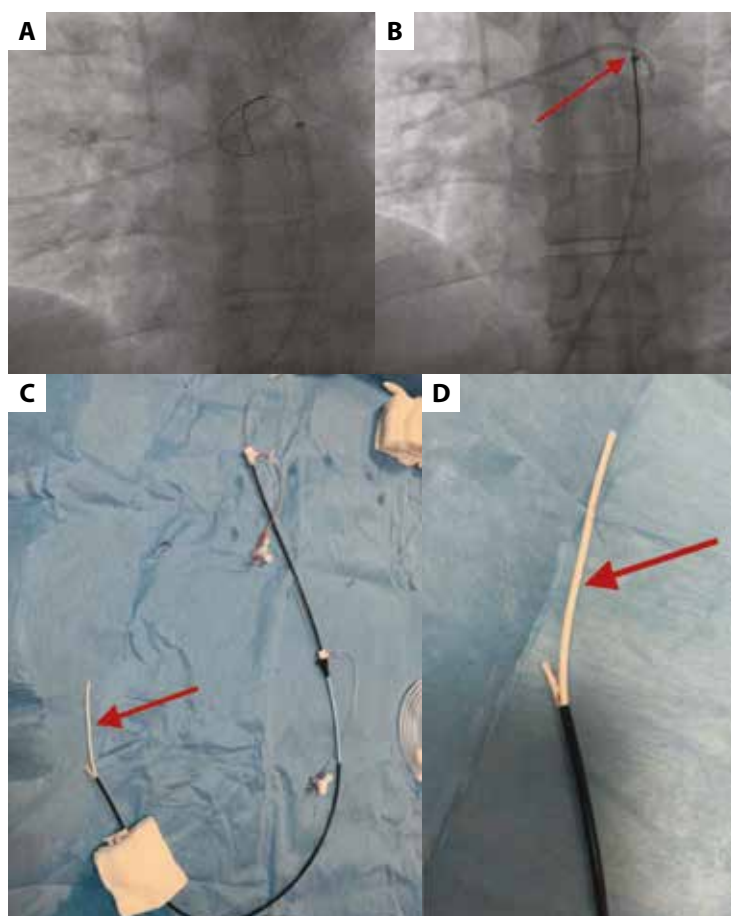


Figure 1. **A** and **B.** Chest X-ray obtained in the catheterization laboratory. **A.** 7F 90 cm sheath (Cook Medical) inserted into the right pulmonary artery via the right femoral. **B.** Removal of the detached port fragment using a large capture capacity snare (Exeter Snare 15; red arrow). **C** and **D.** The detached port fragment after externalization (red arrows). **C.** Vascular sheath 7F 90 cm (Cook Medical) with the retrieved port fragment (red arrow). **D.** The retrieved fragment captured by a snare (Exeter Snare 15; red arrow)

Supplementary material

Supplementary material is available at https://journals.viamedica.pl/kardiologia_polska.

Article information

Conflict of interest: None declared.

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