



Short Report

Intra-arterial Foreign Body in Popliteal Artery: A Case Report

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ABSTRACT

We describe the case of a male patient who presented with an intra-arterial sheath following an endovascular intervention months earlier. The occurrence, complications and retrieval of an unusual intra-arterial foreign body are described.

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Introduction

Many articles have described the iatrogenic introduction of intra-arterial guide wire parts or catheter tips during endovascular procedures.^{1,2} To our knowledge, there is no record of the occurrence of a large-sized intra-arterial sheath shearing off during endovascular therapy and lodging distally in the lower extremity.

The following case report describes a non-invasive method of retrieving 11 cm of arterial sheath that sheared off and lodged in the po

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Despite symptoms suggestive of claudication, his ankle–brachial pressure index (ABPI) revealed no abnormalities with a value of 1.12 before and 1.22 after treadmill walking.

Duplex ultrasound showed an intra-arterial foreign body in the popliteal artery and tibiofibular trunk with flow through it. Subsequent angiography 1 day later revealed the intra-arterial position of a foreign body with an estimated length of 10–11 cm. At the time of angiography, the foreign body contained a clot. We suspected that a large portion of the sheath had sheared off and

Report

Patient A, a 45-year-old man whose past medical history includes hyperlipidaemia and atrial arrhythmias, presented to our vascular department. He had gone abroad to undergo ablative therapy for atrial fibrillation in 2009 and again in 2010. During the second treatment, the femoral arterial sheath sheared off with unsuccessful operative exploration of the inguinal region to retrieve it. Upon presentation to our hospital a few months later, he complained of right lower leg pain, worsening with exercise and relieved by rest. He had no past medical history of claudication.

French sheath revealed a foreign body in the popliteal artery with occlusion of the peroneal artery. The distal part of the sheath looked obliquely cut and sharp, with a large surrounding clot. The anterior and posterior tibial arteries were open (Figs. 1 and 2).

Thrombolytic therapy was given as per protocol. A bolus of 250,000 IU urokinase was followed by continuous infusion. Following urokinase treatment, the 6-French sheath in the femoral artery was replaced by an 8-French sheath. Using a guiding catheter and a multi-purpose catheter, a 1/18,000 V-18 wire (Boston Scientific, Natick, MA, USA) was manoeuvred into the popliteal sheath (Fig. 3). After inflating the 2/40 mm symmetry (Boston Scientific, Natick, MA, USA) balloon in the proximal part of the sheath, the foreign body was successfully removed by pulling it up into the guiding catheter along its longitudinal axis. The patient was given another 24 h of urokinase treatment as angiography showed a persistent clot at the site of the foreign body after its retrieval.

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Figure 1. Contrast angiography showing foreign body in popliteal artery with occlusion of the peroneal artery with a large clot around the obliquely cut distal part of the sheath. Anterior tibial and peroneal arteries are not occluded.

Follow-up angiography showed persistent occlusion of the peroneal artery with good run-off of the anterior and posterior tibial arteries.

One year after retrieval of the partial sheath that had dislodged, the patient reports no more symptoms of claudication.

Discussion

Surgical removal of a misplaced or dislodged intra-arterial iatrogenic foreign body may not be safe or practical. Extensive exploration may be required, and there is the need for closure of the arteriotomy with a venous or an artificial patch.³ The foreign body may move further down during surgical manipulation and may be hard to visualise.⁴ For these reasons, it was decided to attempt an endovascular approach to the retrieval of the foreign body. An alternative approach could have been the use of a snare; however, the length of the foreign body would make it very difficult indeed for the sheath to be pulled lengthwise into the guiding catheter once looped by the snare. Our method of retrieval meant the foreign body could be pulled into the guiding catheter easily (Fig. 4).

It is our recommendation that for large foreign bodies with a lumen, as described in our case, the snare retrieval method is not used as this would lead to significant retrieval problems. Instead, it should be attempted to insert a balloon into the lumen of the foreign body so it can be pulled up into a guiding catheter along its longitudinal axis.



Figure 2. Angiography without contrast showing foreign body.

The occurrence of intravascular stents, coils and venous catheter fragments is well reported;⁵ but, to our knowledge, there is no report in the literature of an intra-arterial sheath as described in this article. Ankle–brachial pressure indices (ABPIs) within normal



Figure 3. After inserting a 1/18,000 V-18 wire into the sheath, the 2/40 symmetry balloon is inflated in the proximal part of the sheath.

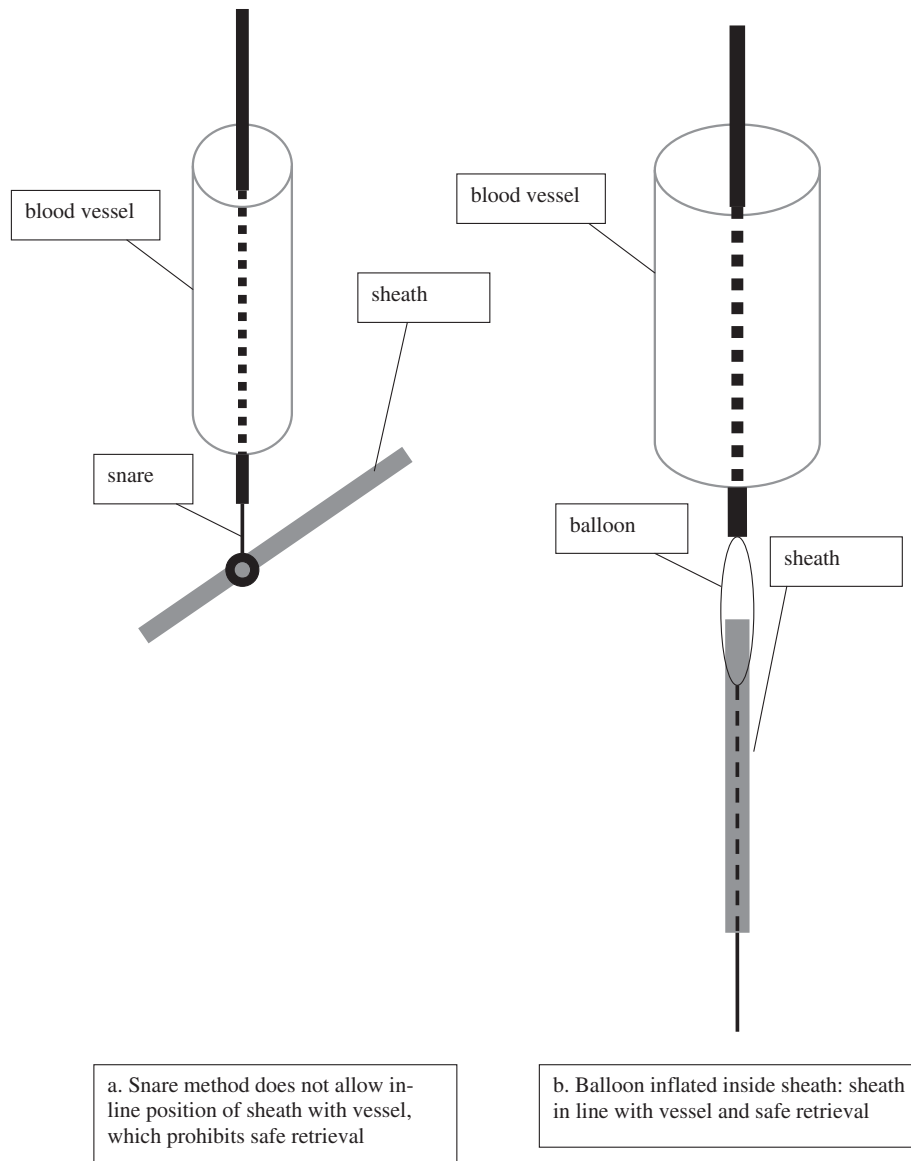


Figure 4. Illustration explaining how balloon (right) is inserted into the sheath in order to retrieve it, and how snare (left) retrieval would be impossible.

limits have been described in diabetic patients despite claudication symptoms. It is unclear why our patient had clinical symptoms suggestive of claudication yet normal ABPI values. The patient was treated abroad for atrial fibrillation and we could not obtain records detailing how a large piece of arterial sheath had sheared off. A possible explanation might be excessive manipulation with the ablative device inserted through the sheath. It is recommended that ablative devices be handled carefully during this procedure.

The above case illustrates the risk of serious complications during a common treatment for atrial fibrillation.

Conflict of Interest

The authors did not receive any outside funding or grants in support of preparation of this work. They did not receive payments or other benefits from a commercial entity. No commercial entity

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