Remote extraction using a biopsy forceps of a dislodged metal clip closure device causing acute lower limb ischemia

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INTRODUCTION

Vascular closure devices (VCDs) after percutaneous arterial interventions provide faster hemostasis compared to manual compression with similar complication rate. We report a case of acute lower limb ischemia due to migration of a Celt ACD® (Vasorum™) device successfully endoluminally extracted with biopsy forceps.

CASE REPORT

A 79-year-old man was referred to our vascular surgery department after a percutaneous coronary angioplasty through a right femoral access for a non-ST elevation myocardial infarction and Celt ACD® VCD placement. Inadequate hemostasis motivated fluoroscopic confirmation of the closure device intra arterial embolization in the middle third of the superficial femoral artery (SFA). Clinical examination showed malperfusion of the lower leg with minor rest pain and loss of distal pulses. The patient underwent emergent surgery through exposure of the femoral artery bifurcation. The first angiography confirmed the location of the VCD (figure 1a) in the mid superficial femoral artery which remained patent but distal emboli were visualized in the popliteal artery and fibro-peroneal trunk (figure 1b). VCD extraction was remotely performed using a 2,3 mm Biopsy Forceps (Endo-Flex® (figure 3) supported by a 9-French sheath. A small arteriotomy was necessary to remove the device without further vessel damage. Subsequently successful thrombo-aspiration of the distal emboli was performed. The post-operative course was uneventful, one month clinical and duplex follow up showed no residual stenosis or thrombus.

DISCUSSION

Despite similar complication rate compared to manual compression, VCDs remain associated with vascular complications such as lower limb ischemia in 0.3% of patients. Direct surgical repair although often reported might not be the most appropriate solution especially for device migration. The hybrid endovascular retrograde retrieval approach allowed limited surgical trauma to the groin with simultaneous absolute control of the initial access site and repair of the artery after VCD extraction (outer diameter 4mm with sharp edges). It avoided the aggressive exposure of the SFA at its mid third and provide endovascular access.

CONCLUSION

Embolization of VCD require expedite treatment to limit further thrombotic complication. As no dedicated device is available for endovascular retrieval, the off label use of sterile endoscopic forceps is an option.

REFERENCES