Innovative Endovascular Technique for Post-interventional Common Femoral Artery Pseudo-aneurysm

Introduction

Post-catheterization pseudoaneurysm is one of the most commonly encountered vascular complications of cardiac and peripheral angiographic procedures. Indeed, iatrogenic causes constitute increasingly frequent sources of pseudoaneurysms due to endovascular interventions. This condition is frequently associated with increased morbidity and mortality rates, commonly leads to open surgical approach to preclude its severe complications. We report the case of patient who developed deep-seated voluminous common femoral artery pseudoaneurysm (PSA) following coronary intervention, who was successfully treated by an innovative endovascular technique.

Case Report: A patient, 72 years of age, was admitted with exertional chest pain associated with shortness of breath since six hours before admission. Admissional exams showed apical ischemia and left ventricular dysfunction on the left ventricular angiogram. Pertinent medical history included morbid obesity, non-insulin dependent diabetes mellitus, poorly controlled hypertension, obliterative previous myocardial infarction and coronary bypass and chronic obstructive pulmonary disease. The patient underwent cardiac catheterization and Percutaneous transluminal coronary angioplasty (PTCA) with stent placement to the mid-left anterior descending was performed with no residual stenosis with thrombolysis In myocardial infarction (TIMI)-3 flow seen in the left anterior descending after the procedure. Approximately 13 hours after coronary intervention, the patient presented with significant right inguinal painful pulsatile mass, with massive growing hematoma. Vascular ultrasound evidenced large neck right common femoral pseudoaneurysm, which was confirmed during diagnostic angiogram (figures 1 and 2).

A contralateral approach using a 55cm Balkin Flexor (Cook medical, USA) over a SupraCore 0.035” guidewire (Abbott Vascular, USA) was performed, leaving the sheath’s brite tip in the distal part of the right external iliac artery.

Pseudoaneurysm neck catheterization was then performed with a 5-French IMA catheter (Cordis, USA) and a 0.035” guidewire (Abbott Vascular, USA) over a SupraCore guidewire. Passage of a 0.018” V18 guidewire (Boston Scientific, USA) and capture by the IMA catheter with the C-arm in ipsilateral oblique at 30° (Figure 3).

Under local anestesia, a direct steep (±45°) puncture of the pseudoaneurysm was performed with a 9cm 21Gauge needle (Cook medical, USA), under fluoroscopic roadmaping guidance (Figure 4a).

After exteriorization of the wire through the proximal sheath, followed OTW passage and deployment of a Prolene Preguide Vascular Closure Device (Abbott Vascular, CA, USA) under fluoroscopy through the lesion neck (Figure 5a.), resulting in complete closure of the pseudoaneurysm. (Figure 5b.)

Hospital discharge was possible on post-operative day-3, with regular dual-antiplatelet therapy and with no signs of bleeding or recrudescence of symptoms and significant improvement of local pain.

Conclusion

Endovascular suture was feasible and beneficial in this challenging situation and could become a promising strategy for treatment of femoral pseudoaneurysms secondary to endovascular interventions. Additional studies on this issue should be warranted.

References