

## Stent-assisted coiling of large common femoral artery pseudoaneurysm following coronary artery catheterization: an uncommon and novel approach

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The femoral artery pseudoaneurysm is a disturbing groin complication associated with the femoral arterial access site used for invasive cardiovascular interventions. We present a 39 year old man who developed a huge right common femoral artery pseudoaneurysm, following diagnostic coronary artery catheterization, which was successfully managed with stent-assisted coiling, an emerging and narrative option in invasive percutaneous approaches to femoral artery pseudoaneurysm.

**Keywords:** femoral artery, pseudoaneurysm, stent-assisted, coiling.

### CASE REPORT

A 39 year old man was referred to our hospital due to right inguinal region pain following coronary angiography which was performed 10 days before. The patient had no remarkable past medical history until one month ago when a retrosternal exertional chest pain was initiated and exercise electrocardiography showed significant 1.5 mm ST depression in anterior and inferior leads in stage 3 of Bruce protocol. According to exercise test he was candidate for coronary angiography which showed normal coronary arteries with mild slow flow pattern in left coronary systems. He was discharged from hospital with no significant complaint one day after coronary catheterization.

He developed relatively severe pain in right inguinal region at the site of arterial access with sense of pulsation one day after discharge. Doppler sonography was performed which revealed a relatively large pseudoaneurysm in the right common femoral artery. Laboratory tests including complete blood counts, coagulation tests, and renal and hepatic function tests were all in normal limits.

The patient was prepared for right lower limb angiography which demonstrated a large pseudoaneurysm (49 mm\*37 mm) of right common femoral artery with a wide neck (19 mm) (Figure 1 A, B). Due to peripheral angiography results and weak pulses of right lower limb, closure of pseudoaneurysm was scheduled for him. First of all, a balloon expandable stent was deployed in the neck of pseudoaneurysm *via* contra-lateral femoral artery access, to support coiling of the pseudoaneurysm

sac (Figure 1 C). Following stent insertion, 7 coils were introduced in the sac of pseudoaneurysm and sealed it.

There was no complication after interventional procedure and serial sonography the day after procedure established successful closure of pseudoaneurysm. He was discharged on Aspirin 81 mg and Clopidogrel 75 mg daily for only one month. In follow-up visits 1, 3 and 6 months later, the patient had no significant complaint and Doppler sonography showed no considerable defect.

### DISCUSSION

The femoral artery pseudoaneurysm is a worrying groin complication associated with the femoral arterial access site used for invasive cardiovascular intervention that occurs in 0.1% to 0.2% of diagnostic angiograms [1].

As it has been confirmed, female gender, obesity, hypertension, and the use of dual antiplatelet and/or anticoagulant therapy prior to catheterization are independent risk factors for developing femoral artery pseudoaneurysm. Also, an incorrect low puncture site and multiple punctures tries were also risk factors for femoral artery pseudoaneurysm [1, 2]. Interestingly our patient had none of the mentioned risk factors. Several therapeutic options have been suggested to treat femoral artery pseudoaneurysm including ultrasound-guided compression repair, surgical repair, and invasive percutaneous approaches (thrombin injection, coil embolization and insertion of covered stents) [3, 4].

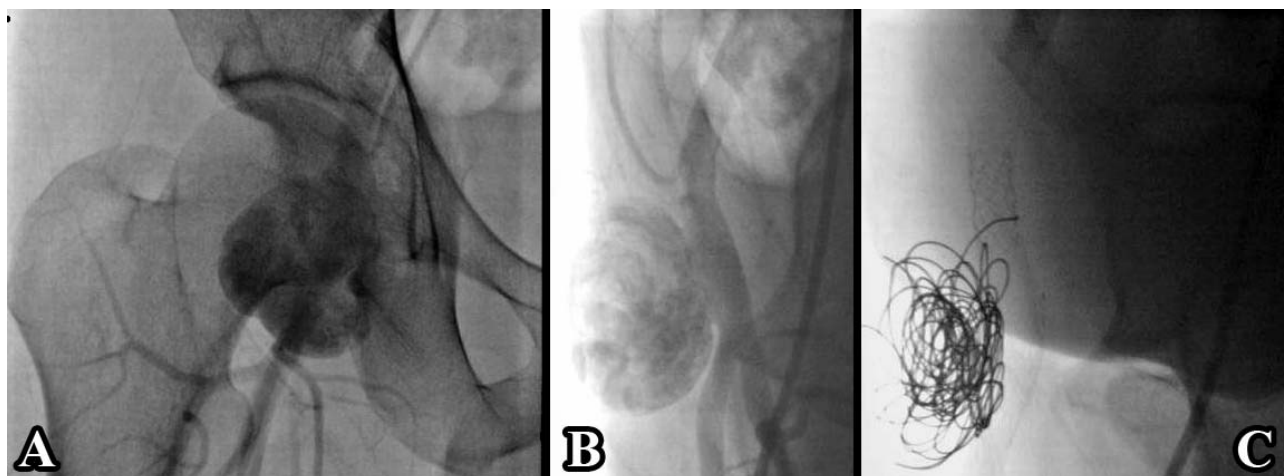


Figure 1 A, B: Right lower limb angiography which demonstrated a large pseudoaneurysm (49 mm\*37 mm) of right femoral artery. C: Final result of stent-assisted coiling of pseudoaneurysm.

Our case was one of the less common cases of femoral artery pseudoaneurysm who was treated with stent assisted coiling, a novel approach in management of pseudoaneurysm. Although ultrasound-guided injection of thrombin remains an acceptable treatment to most interventionists, due to its technical simplicity, we performed stent assisted coiling in this special case because of significant width of pseudoaneurysm neck [3, 5, 6].

The incidence of local puncture-related femoral artery pseudoaneurysm will possibly rise in the future due to the escalating number of radiologic and cardiovascular interventions being accomplished in general, extended catheter dwelling times, greater sheath sizes and the increasing use of antiplatelet and anticoagulation therapy for these processes.

Endovascular management is appropriate for a patient with femoral artery pseudoaneurysm. It is the appealing method of treatment in patients who do not desire to undergo surgical therapy. It is also associated with shorter hospitalization in the elective setting. Most of the femoral pseudoaneurysms can be successfully managed with endovascular repair [6].

Endovascular treatment *via* stent-assisted coiling of femoral artery pseudoaneurysm is an emerging approach with lower procedural mortality and morbidity, diminishing aneurysm-related symptoms with high procedural success rates.

**Conflict of interest.** None to declare.

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*Pseudoanevrismul arterei femurale este o complicație deranjantă secundară accesului arterial femoral pentru intervențiile invazive cardiovasculare. Prezentăm cazul unui pacient de 39 de ani care a dezvoltat un pseudoanevrism femoral gigant după cateterizare care a fost tratat cu succes folosind stentare tip stent-assisted coiling, o metodă nouă pentru tratarea unor astfel de cazuri.*

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