

PSEUDOANEURYSM AND ARTERIAL WALL RUPTURE INDUCED BY ROTATIONAL ATHERECTOMY IN PERIPHERAL ARTERIAL DISEASE

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INTRO

Atherectomy devices may be used for vessel preparation in peripheral arterial disease¹. Goals are to reduce dissection risks, need for bailout stenting, to enhance lumen gain, vessel compliance and drug delivery².

Adverse events of atherectomy are distal embolization,

dissection, acute occlusion, pseudoaneurysm formation and arterial wall rupture³.

We describe two cases of vessel preparation with rotational atherectomy inducing pseudoaneurysm for one and arterial wall rupture for the other.

CASE REPORTS

CASE REPORT 1

A 68-year-old man presented with chronic limb-threatening ischemia. He had rest pain and two toes necrosis, corresponding to Rutherford classification stage 5. Computed tomography angiography highlighted very tight and heavy calcified stenosis of the popliteal artery at the middle third, belonging to Global Limb Anatomic Staging System (GLASS) grade 2. Rotational atherectomy was performed to prepare the target vessel. The angiography following the atherectomy device application showed pseudoaneurysm formation (Figure 1). Self-expandable covered stent was deployed (Figure 2).

CASE REPORT 2

A 66-year-old woman suffered from one calf intermittent claudication, corresponding to Rutherford classification stage 3. Computed tomography angiography highlighted total occlusion of the whole superficial femoral artery, belonging to GLASS grade 4. Rotational atherectomy was performed to prepare the target vessel. At the middle level of the superficial femoral artery, the sound of the atherectomy device suddenly changed. Progression was stopped to check the target vessel. Angiography showed arterial wall rupture (Figure 3). Self-expandable covered stent was promptly deployed to stop the bleeding (Figure 4).

CONCL.

There are **two types of arterial wall perforating injuries** after atherectomy. The first one concerns perforation without bleeding, or pseudoaneurysm formation, our first case. The second type is represented by perforation with bleeding, or arterial wall rupture, our second case.

Treatment consists of balloon angioplasty with extended

dilatation time. If the injury isn't under control despite the angioplasty, covered stenting is required.

Intravascular ultrasound may reduce occurrence of such adverse events, by checking the wire position into the true lumen before atherectomy.



Figure 1

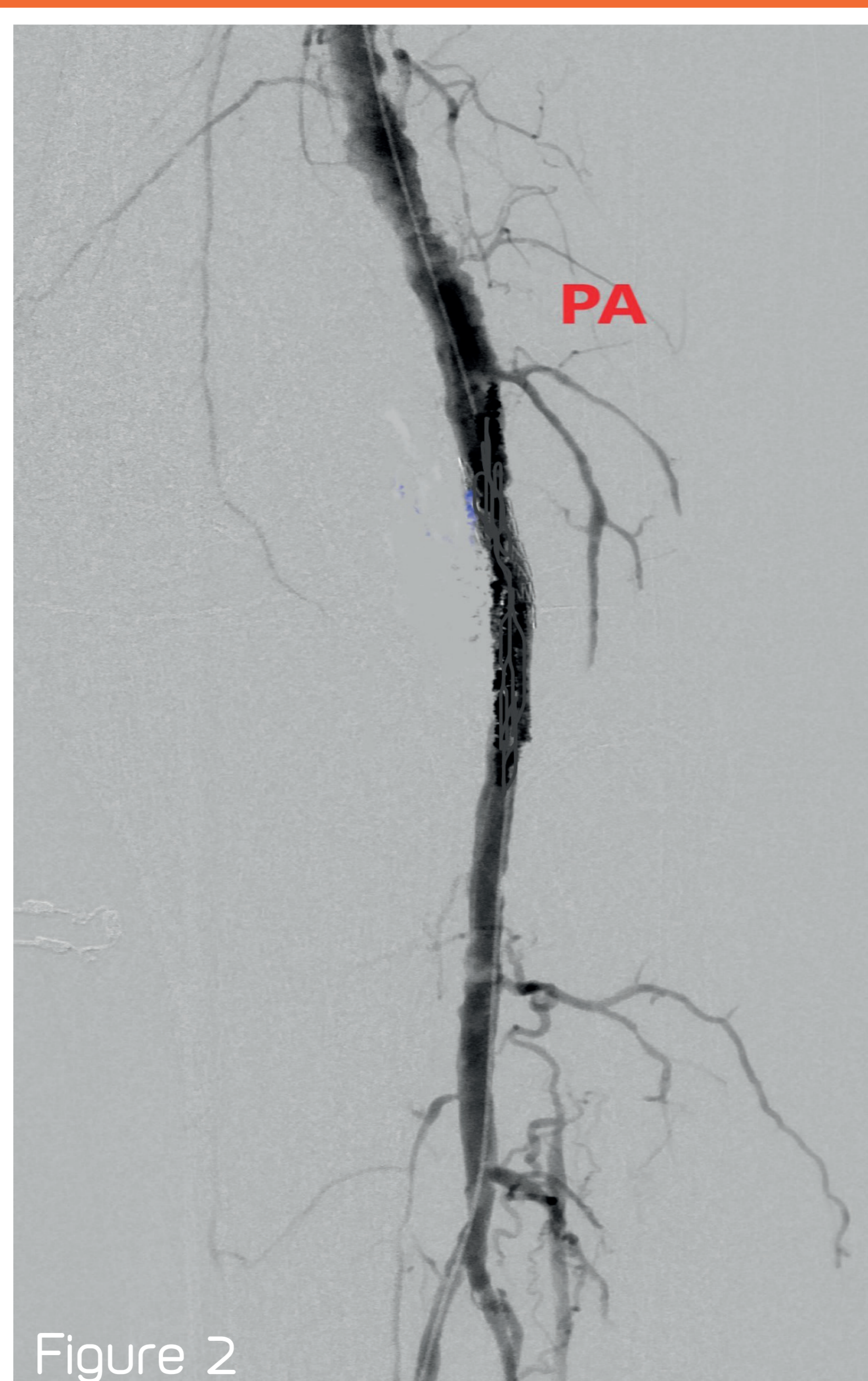


Figure 2

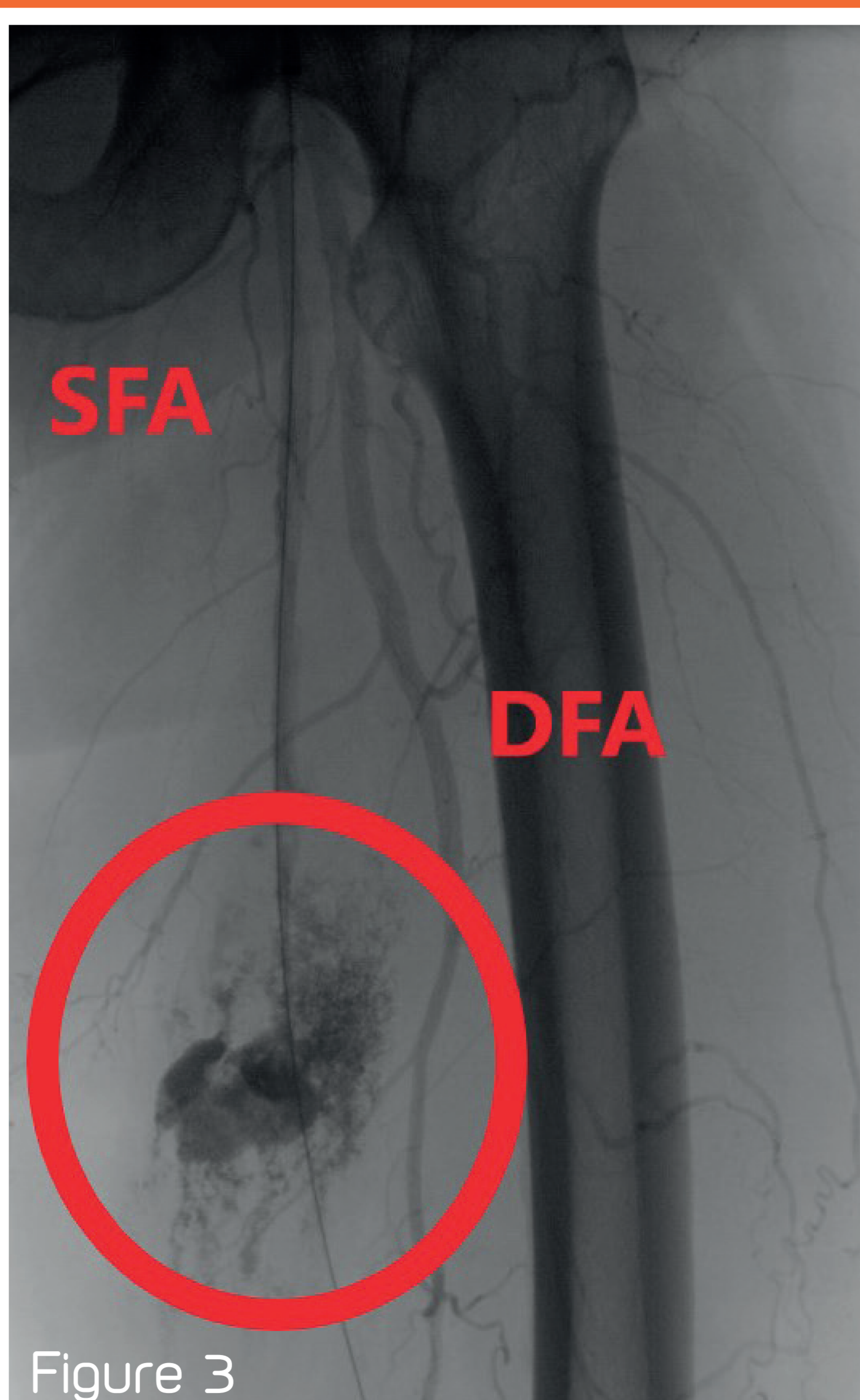


Figure 3

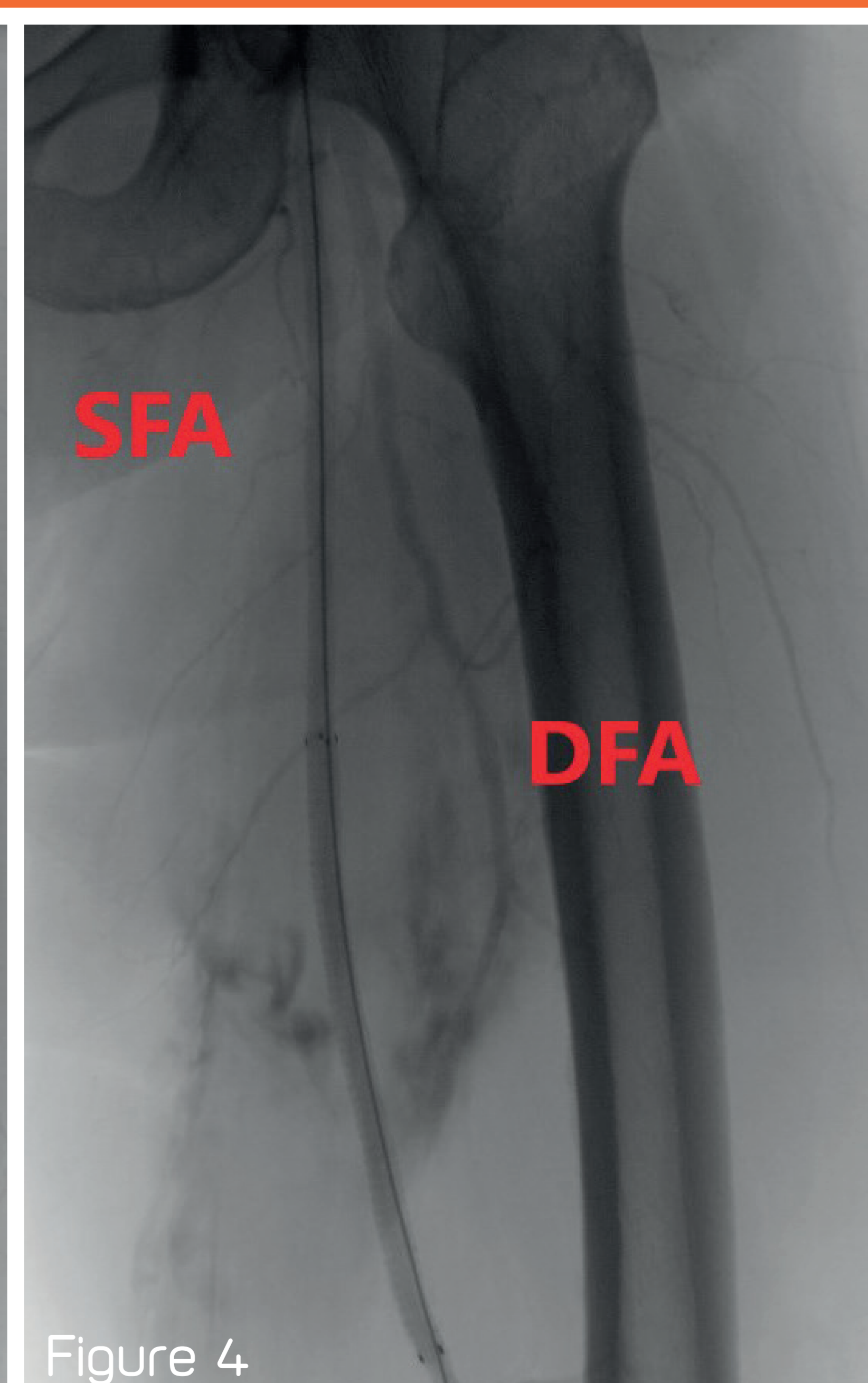


Figure 4

References

¹ Kerzmann A, Boesmans E, Holemans C, et al. Endovascular treatment of femoropopliteal arterial occlusive disease. Rev Med Liege. 2020;75(11):717-723.

² Katsanos K, Spiliopoulos S, Reppas L, et al. Debulking Atherectomy in the Peripheral Arteries: Is There a Role and What is the Evidence? Cardiovasc Intervent Radiol. 2017;40(7):964-977.

³ Bulvas M, Sommerová Z, Vaněk I, et al. Prospective Single-Arm Trial of Endovascular Mechanical Debulking as Initial Therapy in Patients With Acute and Subacute Lower Limb Ischemia: One-Year Outcomes. J Endovasc Ther. 2019;26(3):291-301.

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