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Letter to the Editor

Antegrade access in a stented common femoral artery: Feasible but with a real bleeding risk

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Abstract

Antegrade femoral artery access is often used for diagnostic and interventional purposes in patients with critical limb ischemia, given its potential advantages in terms of visualization and back-up. However, it may be associated with an increased risk of local vascular complications, especially in the presence of common femoral artery atherosclerosis. We hereby report a case of antegrade femoral access in a previously stented common artery, which enabled successful recanalization of a totally occluded superficial femoral artery. Despite the procedural success, retroperitoneal bleeding occurred after sheath removal, which was nonetheless effectively managed with prolonged balloon inflations by means of contralateral femoral artery access. This clinical vignette, the first to date to report on antegrade access in a stented femoral artery, supports its feasibility despite the presence of a real bleeding risk.

Keywords: Antegrade femoral access; Critical limb ischemia; Percutaneous transluminal angioplasty; Peripheral artery disease

1. Text

Percutaneous transluminal angioplasty (PTA) is a mainstay in the management of critical limb ischemia (CLI) [1]. Antegrade femoral access may offer advantages in this setting, but may lead to local hemorrhagic vascular complications, especially in atherosclerotic arteries [2]. To date, there is uncertainty on antegrade femoral approach in previously stented femoral arteries. We hereby report on a patient who had already undergone PTA with stenting in the common femoral artery, in which antegrade access was employed.

2. Case

A 76-year-old diabetic lady with cirrhotic thrombocytopenia was admitted for CLI with right foot ulcer. She had previously undergone arteriography disclosing common femoral artery (CFA) stenosis, occlusion of the superficial femoral artery (SFA) and severe atherosclerotic disease of the tibial arteries, managed with PTA and stenting (self-expandable Lifestent 7.0×60 mm, Edwards) in the CFA and profunda femoral arteries. Nonetheless, ischemic rest pain and foot ulcer had persisted, and given the ongoing risk of amputation, a decision was made to repeat angiography.

We successfully obtained ipsilateral antegrade access despite the presence of a stent in the CFA (Fig. 1) and angiography through the vessel dilator of a 5Fr sheath (Cordis) disclosed a persistently good result in the CFA, with extensive atherosclerotic disease of the SFA and tibial arteries. After deployment of a 6Fr sheath through the CFA stent struts, we recanalized the SFA, optimizing the procedure with stenting (Everflex 7.0×150 mm, Ev3). Peri-procedural medications included unfractioned heparin (5000 UI), aspirin and clopidogrel.

After confirmation of adequate activated clotting time, the sheath was removed and manual compression was carefully applied for 25 min, given the presence of peri-sheath hematoma already at the end of the procedure. However, at the end of the compression, a sudden state of shock developed.

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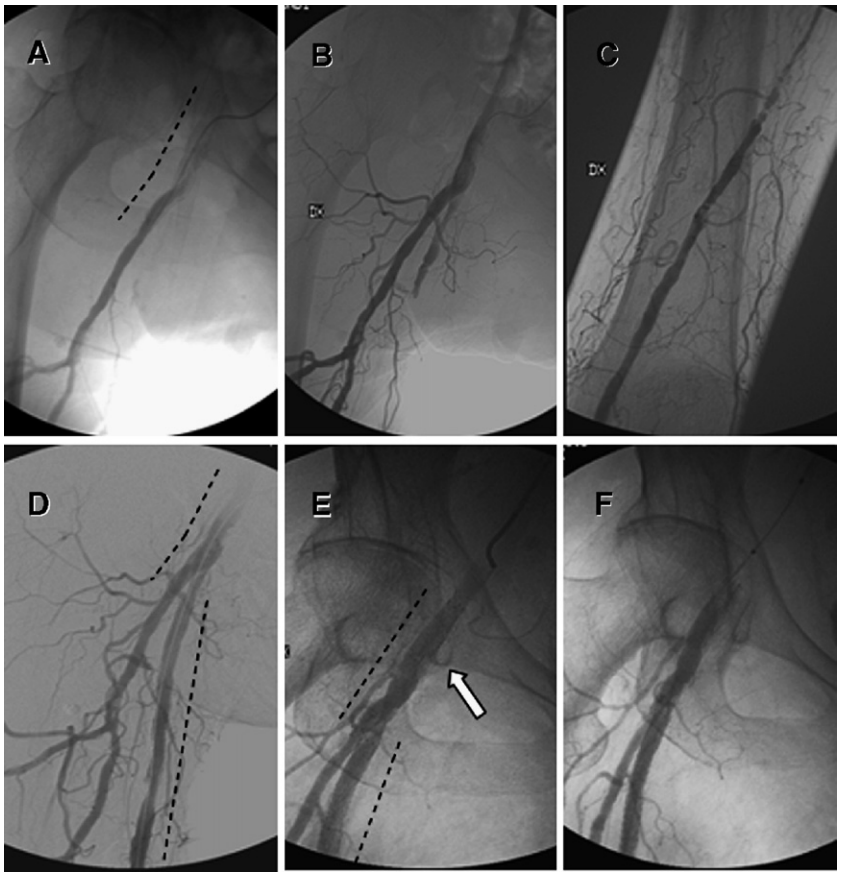

Fig. 1. (A) Antegrade right common femoral access with the sheath dilator seated in the common and profunda femoral arteries, showing the intra-stent entry of the sheath. Subsequent higher volume angiography disclosed total occlusion of the proximal superficial femoral artery (B), with adequate collateralization at the distal level (C). After successful recanalization of the superficial femoral artery, a long 7.0×150 mm self-expandable stent was implanted from the proximal to mid superficial femoral artery, with a good final angiographic result (D). However, after sheath removal and 25 min of compression, severe hypotension developed, and persisted despite resuscitation efforts. Control angiography performed by the contralateral femoral access disclosed a minor but persistent leak at the site of previous ipsilateral common femoral access (E, arrow). Several prolonged balloon inflations in the stented common femoral artery were thus performed, finally enabling complete sealing of the bleeding site and return of stable hemodynamic conditions (F). Implanted stents are shown by dashed lines.

Resuscitation efforts enabled the return of stable hemodynamic conditions, despite persistence of hypotension. In the suspicion of retroperitoneal hemorrhage and secondary vagal reaction, the patient was brought back to the catheterization laboratory and through contralateral femoral access diagnostic arteriography was performed. A small but clear bleeding tear was identified at the site of the previous right femoral access. Several prolonged (up to 10 min) inflations with a 7.0×40 mm balloon (Smash, Boston) were then performed in the CFA and SFA, enabling definitive sealing of the bleeding site and complete resolution of the hypotensive state.

She was later transferred to the intensive care unit and, after observation and hemotransfusion, could be transferred to the ward in satisfactory conditions. The subsequent hospitalization was uneventful, and she was discharged 6 days after the procedure with an increased skin oxygen tension level.

3. Discussion

Access sites for CLI include the ipsilateral antegrade femoral approach and the contralateral retrograde approach [2]. While the antegrade access may offer advantages such as better visualization and superior support, it has been associated with bleeding risk, especially in atherosclerotic femoral arteries. This may apply as well to previously stented femoral arteries. This case report confirms the feasibility of antegrade access even in femoral arteries previously treated with stents, albeit at the price of a real and potentially life-threatening bleeding risk [3].

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