

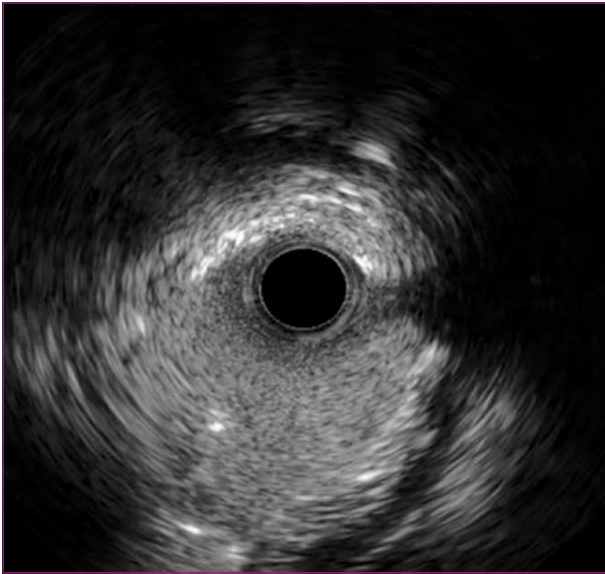


Figure 5. Deformed struts are observed at the 7 o'clock position on IVUS performed from the Cx.

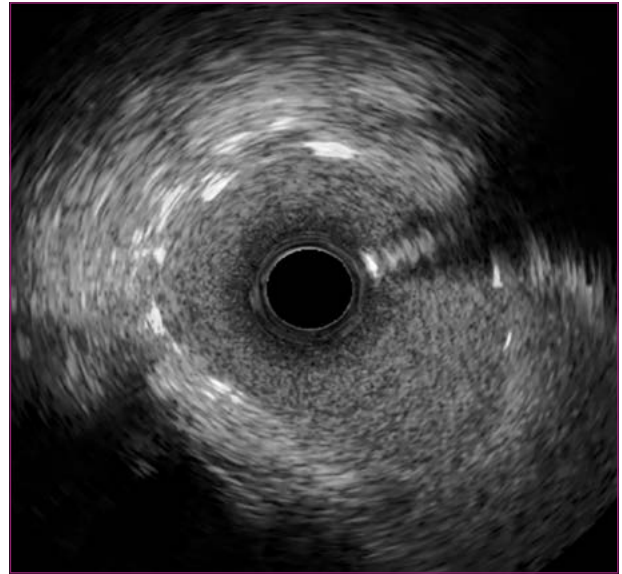


Figure 7. The stent was observed to be fully expanded in the final IVUS image.

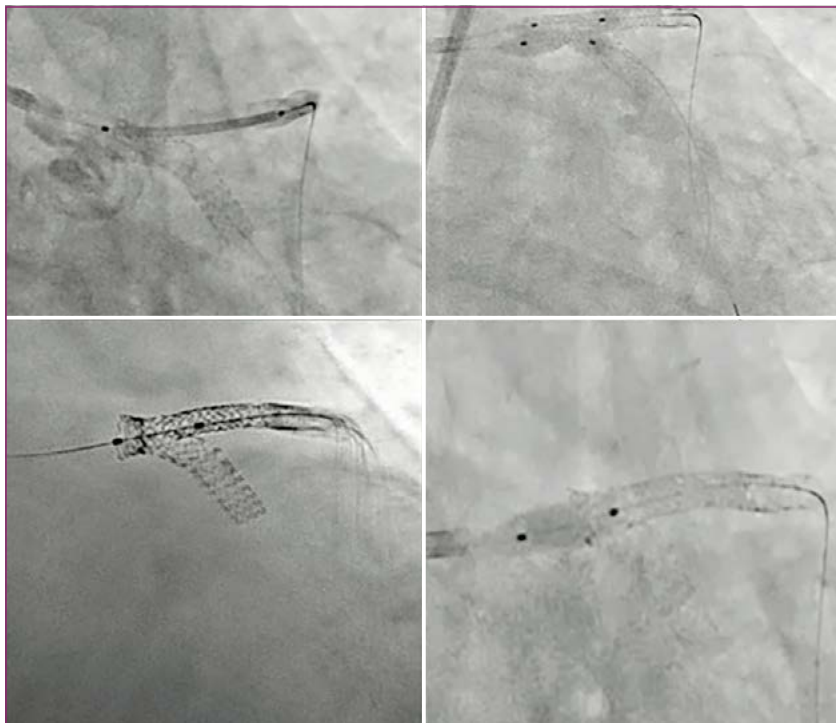


Figure 6. Standard culotte technique procedures were performed.

SS-08

Endovascular Treatment of Delayed Popliteal Artery Pseudoaneurysm Rupture with a Stent-Graft Following Retrograde Popliteal Access

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Introduction and Aim: The retrograde popliteal approach is an effective option for the endovascular treatment of superficial femoral artery

(SFA) chronic total occlusions when antegrade crossing is unsuccessful or technically challenging. However, popliteal artery puncture may lead to access-site complications such as hematoma, arteriovenous fistula, thrombosis, dissection, and pseudoaneurysm. Although popliteal artery pseudoaneurysm is rare, it may result in serious consequences, including distal embolization, limb ischemia, and rupture. In this report, we aimed to present a case of popliteal artery pseudoaneurysm rupture occurring one week after treatment of an SFA chronic total occlusion via a retrograde popliteal approach and successfully managed with a stent-graft.

Case Report: A 72-year-old man was evaluated for intermittent claudication, which was more pronounced in the right lower extremity. His

medical history included diabetes mellitus, a 50-pack-year smoking history, and endovascular aortic aneurysm repair performed five years earlier. Imaging revealed bilateral SFA chronic total occlusions in the patient, who had Rutherford category 3 peripheral arterial disease. Endovascular revascularization of the right lower extremity was planned. The right popliteal artery was punctured under ultrasound guidance, and a 7-F sheath was inserted. The occlusion was crossed using a retrograde guidewire, followed by angioplasty with a 6×150 mm balloon. Completion angiography demonstrated adequate antegrade flow without any acute complications. Following the procedure, distal pulses were palpable and the patient remained clinically stable; he was subsequently discharged on antiplatelet therapy. Seven days after the procedure, the patient presented to the emergency department with sudden-onset severe pain and rapidly progressive swelling in the right popliteal region. Physical examination revealed a tense and tender swelling in the popliteal fossa. His blood pressure was 140/90 mmHg, heart rate was 75 beats/min, and hemoglobin level was 11.2 g/dL. Doppler ultrasonography and computed tomography angiography demonstrated a 45×60 mm pseudoaneurysm associated with the popliteal puncture site (Figs 1, 2), with active bleeding and a surrounding hematoma. Emergency endovascular treatment was performed with a diagnosis of ruptured popliteal artery pseudoaneurysm. Selective angiography via femoral arterial access demonstrated active contrast extravasation into the pseudoaneurysm sac. A 6×80 mm stent-graft was deployed to completely cover the neck of the pseudoaneurysm (Figs. 3, 4). Completion angiography demonstrated complete exclusion of the pseudoaneurysm, patency of the stent-graft, and preserved distal popliteal-tibial flow. During follow-up, the pain and swelling gradually resolved. At the one-month follow-up, the stent-graft remained patent and the pseudoaneurysm sac was completely thrombosed.

Conclusion: Although retrograde popliteal access is an effective approach for SFA chronic total occlusions, it may rarely be complicated by delayed pseudoaneurysm formation and rupture. This complication should be considered in patients presenting with popliteal pain and swelling after the procedure. In patients with suitable anatomy, femoral delivery of a stent-graft represents an effective and minimally invasive treatment option that rapidly controls active bleeding while preserving popliteal artery continuity and distal limb perfusion.

Keywords: Popliteal artery, pseudoaneurysm, retrograde popliteal access, stent-graft, endovascular treatment, vascular complication.

SS-09

Both the Cause and the Solution: Guidewire-Induced Distal Coronary Perforation

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Introduction and Aim: A patient with a history of hypertension, smoking, and a family history of coronary artery disease presented via emergency medical services due to severe chest pain radiating to the left axilla that began today. The patient had no prior history of coronary artery disease, and current medications included losartan 40/12.5 mg and nebivolol 5 mg. The baseline ECG showed sinus rhythm with ST-segment elevation in the inferior leads and T-wave inversions in the anterior leads. Echocardiography revealed an EF of 55%, inferior wall hypokinesia, an interventricular septum of 14 mm, a left atrium of 42 mm, and mild mitral and aortic regurgitation; the inferior vena cava was collapsible, and no pericardial effusion was present. Based on the clinical, electrocardiographic, and echocardiographic findings, acute inferior myocardial infarction was diagnosed, and the patient was immediately transferred to the catheterization laboratory for emergency coronary angiography.

Methods: Coronary angiography demonstrated a normal left main coronary artery (LM). The left anterior descending (LAD) artery showed a 30% stenosis after DI and a 40% stenosis in the distal segment. The left circumflex (LCX) artery showed a 40% stenosis in the proximal segment

and a 60–70% long sequential stenosis in the mid segment. A critical 99% stenosis was identified in the right posterior lateral (RPL) branch of the right coronary artery (RCA). Based on clinical and imaging findings, the RCA lesion was considered the culprit lesion. Using a right radial approach, the RCA was cannulated with a 6F JR4 guide catheter. The RPL and posterior descending artery (PDA) were crossed using Anyreach wires. Percutaneous transluminal coronary angioplasty (PTCA) was performed on the RCA-RPL lesion using a 3.0×12 mm non-compliant (NC) balloon at 12 atm, followed by the implantation of a 3.5×19 mm drug-eluting stent (DES). The stent was post-dilated with a 3.75×12 mm NC balloon.

Results: During the procedure, a guidewire-induced coronary perforation/rupture occurred in the distal branch of the PDA. Balloon tamponade was applied in the proximal PDA using 2.0×20 mm and 2.0×12 mm balloons for 2.5 minutes; however, the extravasation persisted. A Finewire microcatheter was advanced into the perforated distal branch, and a severed Pilot 50 wire was intentionally left in the perforated distal vessel through the microcatheter. The perforated distal branch was successfully occluded via controlled thrombosis. Follow-up echocardiography performed during the procedure showed no pericardial effusion. As the procedure continued after completing the RCA stent post-dilation, stenosis due to plaque shift was observed at the PDA ostium. PTCA was performed on the PDA ostium using a 2.5×15 mm NC balloon, restoring full patency.

Conclusion: In conclusion, the 99% critical lesion in the RCA-RPL region was successfully treated with PCI and stent implantation in a patient presenting with acute inferior myocardial infarction. The procedure was complicated by a guidewire-induced perforation in the distal PDA branch, which was managed via controlled occlusion of the distal vessel, with follow-up echocardiography confirming the absence of pericardial effusion. Additionally, acute PDA ostial plaque shift during the procedure was successfully treated with balloon angioplasty. Beyond the culprit RCA lesion, elective stage PCI or close medical follow-up was planned for the 60–70% long-segment LCX mid-vessel stenosis.

Keywords: Perforation/rupture, balloon tamponade, microcatheter, guidewire.

SS-10

Two Different Outcomes in One Week: RCA Stent Thrombosis, LAD DCB Success

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Introduction and Aim: A patient with a history of diabetes mellitus, hypertension, Parkinson's disease, and dementia, who had previously undergone stent implantation to the right coronary artery (RCA), was evaluated for chest pain. During elective coronary angiography, the lesion in the RCA was crossed with a guidewire, predilated with a 3.5×15 mm non-compliant (NC) balloon, and a 4.0×20 mm drug-eluting stent (DES) was implanted. Successful patency was achieved following post-dilatation with a 4.0×8 mm NC balloon.

Case Report: In the same session, after percutaneous transluminal coronary angioplasty (PTCA) was performed on the left anterior descending (LAD) artery lesion using 1.5×20 mm and 2.5×25 mm NC balloons, treatment was carried out with a 2.75×40 mm drug-coated balloon (DCB) at 7 atm pressure for 80 seconds. A successful angiographic result was obtained in the LAD at the end of the procedure. Approximately one week after the elective percutaneous coronary intervention (PCI), the patient presented to the emergency department with pronounced nausea, vomiting, and chest pain. Upon detecting changes consistent with an inferior myocardial infarction on the electrocardiogram, the patient was taken to the catheterization laboratory for emergency coronary angiography. Coronary angiography revealed stent thrombosis in the proximal RCA. The left main coronary artery was normal. In the LAD, the previously implanted proximal stent was patent, but a dissec-