



**Figure 3.** Critical ostial and mid-segment lesions on RCA angiography.



**Figure 4.** Image of stent advancement with distal anchor balloon support.



**Figure 5.** Final angiographic image of the RCA.

## SS-07

### Management of Recurrent Acute Stent Thrombosis and Stent Deformation Guided by Intravascular Ultrasound: A Case of Complex Left Main Coronary Bifurcation

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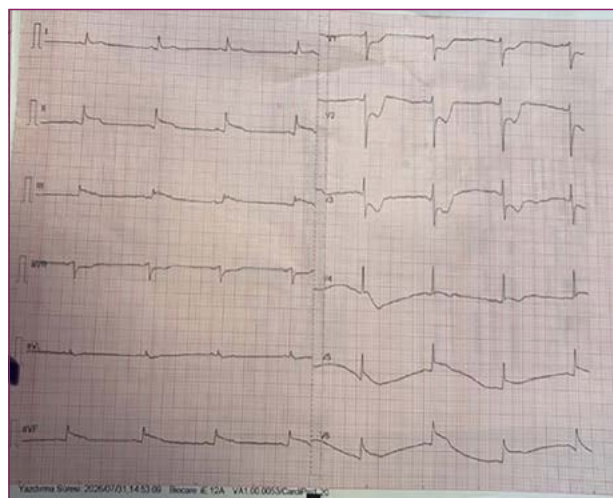
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**Introduction and Aim:** Acute stent thrombosis is a rare but high-mortality complication of percutaneous coronary intervention (PCI). Inadequate stent expansion, malapposition, stent deformation, and complex bifurcation anatomy are among the primary mechanical causes of early stent thrombosis. Intravascular ultrasound (IVUS) plays a crucial role in identifying the underlying mechanism of recurrent thrombotic events and guiding interventional treatment. This case report presents the IVUS-guided diagnosis and management of acute stent thrombosis that developed and recurred during an intervention on a left main coronary artery (LMCA) bifurcation.

**Case Report:** A 44-year-old male patient presented with hemodynamic shock. Emergency PCI was performed after electrocardiography revealed findings suggestive of circumflex artery (CX) occlusion (Fig. 1). Total occlusion of the CX ostial segment and 95% stenosis in the mid-segment of the left anterior descending artery (LAD) were observed (Video 1/2). Following appropriate lesion preparation, a 4.5×20 mm stent was implanted from the LMCA into the CX using the crossover technique (Video 3). Subsequently, post-dilatation was performed using a 5.0×12 mm non-compliant balloon (Fig. 2). Acute stent thrombosis was then observed at the CX ostium (Video 4). Despite dilatation with a non-compliant balloon, thrombotic occlusion recurred shortly thereafter. Stent Clear imaging did not reveal any evidence of structural stent deformation (Fig. 3). IVUS assessment was performed. During the IVUS run from the LAD, an appearance resembling a bunching of stent struts was detected at the CX ostium while crossing the LMCA (Fig. 4). It was hypothesized that this resulted from sub-strut passage at the ostium during the re-wiring of the CX. The CX was appropriately re-wired. A subsequent IVUS run from the CX revealed deformed stent struts (Fig. 5). High-pressure dilatation was performed on the deformed stent segment using a 4.0×20 mm non-compliant balloon, with the balloon held inflated for 30 seconds. Following the procedure, it was observed that stent expansion had improved, coronary flow was restored, and the thrombotic event did not recur (Video 5/6). Following re-evaluation of the bifurcation anatomy using IVUS, stent implantation from the LMCA to the LAD using the culotte technique was planned. First, a 3.5×24 mm drug-eluting stent was placed at the 95% stenosis in the mid-LAD segment. Subsequently, a 4.0×20 mm drug-eluting stent was implanted, extending from the LMCA into the LAD. The standard steps of the culotte technique were performed (Fig. 6/Video 7). Final IVUS assessment confirmed adequate stent expansion (Fig. 7).

**Conclusion:** In our case, stent deformation likely occurred due to the post-dilatation balloon. In complex LMCA interventions, recurrent acute stent thrombosis should not be attributed solely to pharmacological inadequacy; mechanical causes, such as stent deformation and suboptimal expansion, must also be investigated. While stent integrity appeared intact on Stent clear images, the deformed area was visualized via IVUS, highlighting the diagnostic limitations of StentBoost imaging. IVUS can contribute to the effective management of recurrent stent thrombosis by enabling early identification of the thrombosis mechanism, determination of appropriate balloon and stent strategies, and optimization of the procedure.

**Keywords:** Coronary bifurcation intervention, intravascular ultrasound, stent deformation.



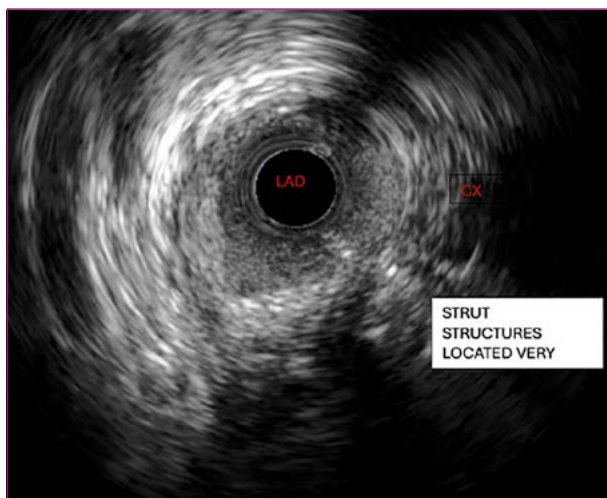
**Figure 1.** ST preservation in leads VI–V3 and ST elevation in inferior leads, suggestive of circumflex occlusion.



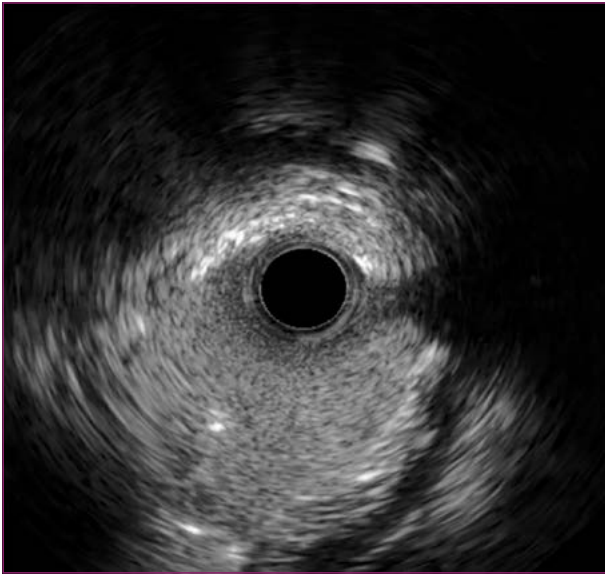
**Figure 2.** Post-dilatation was performed using a 5.0×12 mm non-compliant balloon.



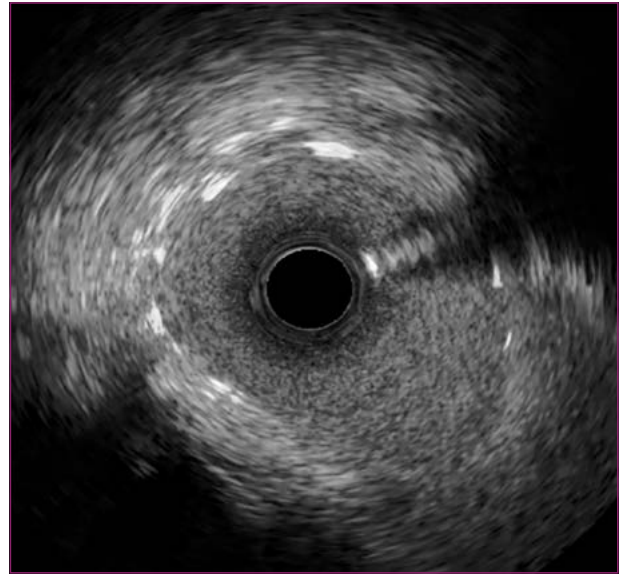
**Figure 3.** The Stent Clear image shows intact stent strut integrity across the crossover from the LMCA to the CX.



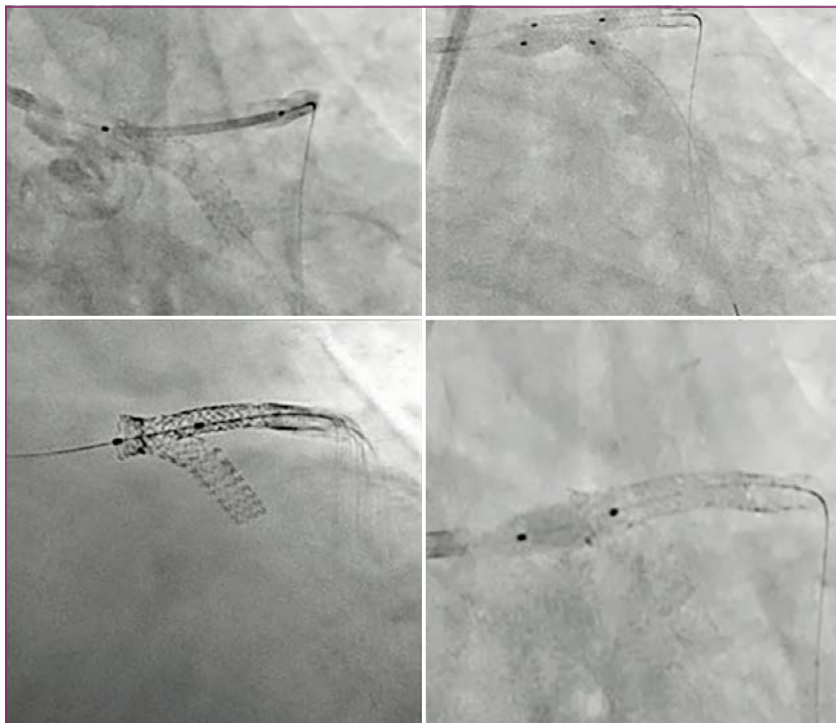
**Figure 4.** IVUS run performed from the LAD; stacked strut structures are visible at the bifurcation of the LCx ostium.



**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