

1080 **The Haematoma That Taught Me Patience: IVUS-Guided Re-entry and DCB-Only Reconstruction of an Occluded LAD**

Heng Shee Kim¹

1 Cardiology Department, Hospital Sultanah Aminah, Malaysia

Background

Drug-coated balloon (DCB) strategies are increasingly used in diffuse coronary disease, but iatrogenic dissection with intramural haematoma remains a feared complication that often triggers reflex stenting. We present a case in which a twice-dissected, occluded LAD was reconstructed without a single stent, in a young dialysis patient racing a transplant deadline.

Case Summary

A 38-year-old woman with end-stage kidney disease on maintenance haemodialysis underwent cardiac evaluation for living-donor kidney transplantation. She was non-diabetic, free of angina, with an ejection fraction of 50 to 55%. Following an abnormal exercise stress test, angiography demonstrated diffuse calcified three-vessel disease: 80% mid-LAD and 95 to 99% distal LAD stenosis with TIMI 2 to 3 flow, 30 to 70% LCx disease with a chronically occluded first obtuse marginal branch, and a 90% mid-RCA stenosis. Given the perioperative risk of cardiac surgery in a dialysis-dependent patient and transplant timeline pressure from an elderly living donor, staged multivessel PCI was selected.

At the index procedure, LAD wiring entered the subintimal space, confirmed by IVUS from the mid-LAD onwards. True-lumen re-entry was achieved with a dual-lumen microcatheter but wire position was lost during device exchange and could not be regained. Treatment was limited to the proximal and mid-LAD with cutting balloon preparation and sirolimus-coated balloons, concluding with a non-flow-limiting type B dissection and TIMI 3 flow.

Two months later, angiography showed total occlusion of the mid-LAD along the unhealed dissection plane with 90% stenosis of the proximal LAD, consistent with propagation of the dissection and intramural haematoma rather than neointimal restenosis. IVUS after small-balloon dilatation confirmed recurrent subintimal wire position with a large intramural haematoma compressing the true lumen. Controlled true-lumen re-entry was achieved with a Crusade Type R dual-lumen microcatheter and Gaia First wire, confirmed on IVUS. After sequential non-compliant and scoring balloon preparation restored TIMI 3 flow, IVUS showed a negatively remodelled vessel with residual distal haematoma. Given her young age, the long dissected segment, and the importance of avoiding a full metal jacket that would compromise future surgical revascularisation options, a DCB-only strategy was chosen: paclitaxel-coated balloons 2.25×40 mm, 2.5×30 mm and 3.0×35 mm from distal to proximal LAD. In the same sitting, the obtuse marginal occlusion was salvaged with small-balloon angioplasty, the ostial-proximal LCx treated with a 3.0×25 mm paclitaxel-coated balloon from the distal left main, and the mid-RCA stented with a 3.5×34 mm drug-eluting stent. Contrast use was 120 mL across 148 minutes.

At three-month follow-up, the LAD demonstrated complete dissection healing and marked late lumen enlargement with a stent-like angiographic appearance, the obtuse marginal showed positive remodelling, and FFR was 0.91 in the LAD and 0.97 in the LCx. Progressive proximal RCA disease was treated with an ostial drug-eluting stent. The patient completed three months of dual antiplatelet therapy, was cleared for surgery, and underwent successful kidney transplantation in July 2026.

Conclusion

Intramural haematoma in a negatively remodelled vessel is a setting where reflex stenting can entrench the problem rather than solve it. This case demonstrates that with IVUS-guided true-lumen re-entry, meticulous lesion preparation and patience, a DCB-based leave-nothing-behind strategy can convert an occluded, twice-dissected LAD into a healed vessel with late lumen enlargement, confirmed by serial imaging and physiology, preserving all future options for a young patient.