

Robotic TECAB For Full Metal Jacket Disease: A Minimally Invasive Solution To A Maximally Complex Problem

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OBJECTIVE

Full metal jacket disease, characterized by extensive stenting of coronary arteries, presents significant challenges for revascularization. Traditional sternotomy approaches may not be desirable for all patients. We present a case of robotic totally endoscopic coronary artery bypass (TECAB) with bilateral internal thoracic artery (BITA) grafting, achieving a LITA to LAD anastomosis at the apex of the heart beyond prior stents, with excellent flow dynamics

CASE PRESENTATION

A 67-year-old male with hypertension, diabetes, hyperlipidemia, and diffuse coronary artery disease—including full metal jacket disease of the LAD, in-stent restenosis, ostial OM1 stenosis and RCA CTO—presented with angina and declined sternotomy. Robotic off-pump TECAB with BITA grafting was performed. Bilateral ITAs were harvested, and two end-to-side anastomoses were performed in a running fashion using 7-0 Prolene sutures: LITA to LAD at the apex and RITA to OM1. Significant challenges included stabilizing the distal LAD near the apex of the heart and increased bleeding while performing the anastomosis, given that the proximally placed snare was ineffective in achieving control due to prior stent placement. The LITA was successfully anastomosed beyond the stents at the apex, demonstrating flow rates exceeding 100 mL/min. This confirmed excellent antegrade flow toward the apex and retrograde filling of the entire LAD. The patient tolerated the procedure well and had an uneventful recovery

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