



Case Series *Cardiac Critical Care*

Coronary Revascularization following Failed Multiple Percutaneous Coronary Intravascular Stents

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ABSTRACT

Multiple blocked percutaneous coronary intervention (PCI) stents pose a significant challenge while planning coronary artery bypass grafting (CABG). In most cases, a suitable target site for distal graft anastomosis is difficult to obtain. In this technically challenging case report, we discuss a case of a 40-year-old male presenting with recurrent angina due to blocked multiple PCI stents in the left anterior descending (LAD) vessel. He underwent CABG in which, due to the non-availability of a suitable target site in LAD, the previous stents in LAD had to be excised along with intima and bypass grafting performed by implanting long segment vein patch over the endarterectomized LAD and left internal mammary artery anastomosed over the vein patch. The post-operative course was uneventful. The patient was extubated on post-operative day (POD) 1 and shifted out of the intensive care unit on POD3. He was discharged in stable condition on POD5. In cases where CABG needs to be performed following multiple failed PCI stents, the option of stent excision along with CABG is a safe option with good short-term results.

Keywords: Blocked stents, Coronary artery bypass grafting, Revascularization, Endarterectomy

INTRODUCTION

Multiple blocked Percutaneous Coronary Intervention (PCI) stents pose a significant challenge while planning Coronary Artery Bypass Grafting (CABG). In most cases, a suitable target site for distal graft anastomosis is difficult to obtain.

CASE REPORT

In this technically challenging case report, we discuss a case of 40-year aged Indian male non-hypertensive, non-diabetic with a smoking history of 10 years. He presented to us with recurrent chest pain for 6 months. He had previously undergone percutaneous coronary intervention (PCI) with multiple stent placements (drug eluting stents) in the left anterior descending (LAD) artery twice, around 6 months and 1 year ago. On evaluation, coronary angiography showed all stents blocked in the LAD vessel due to in-stent restenosis (ISR). Hence, after obtaining informed consent, he was taken up for coronary artery bypass grafting (CABG) surgery.

During the procedure, there was no suitable target site in LAD for grafting. Stents were densely adherent to LAD intima. Hence, it had to be excised along with LAD intima [Figure 1]. Bypass grafting was performed by implanting a long segment vein patch over the endarterectomized

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LAD [Figure 2], and the left internal mammary artery was anastomosed over the vein patch.

Post-operative course was uneventful. The patient was extubated on post-operative day (POD) 1 and shifted out of the intensive care unit on POD3. He was discharged in stable condition on POD 5 with low-dose warfarin therapy along with routine post-CABG medications.

DISCUSSION

Multiple failed PCI stents due to ISR pose a significant challenge during surgical coronary revascularization.^[1] Repeat PCI is not feasible due to previously performed PCI procedures. In such cases, before CABG is contemplated, various techniques like scoring balloon angioplasty can be performed. Furthermore, ablative procedures like excimer laser coronary atherectomy or rotational atherectomy with intravascular lithotripsy can also be considered. Long-term results are also not good with repeat PCI in cases with ISR in multiple stents. Surgical revascularization with CABG remains the ideal choice in such cases.^[2] Few case reports

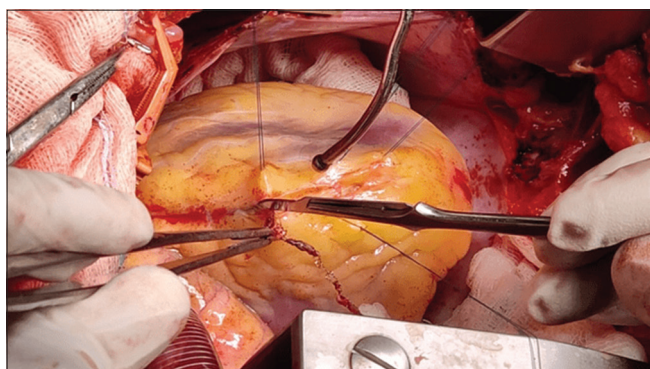


Figure 1: Stent being removed from the left anterior descending along with vessel intima.

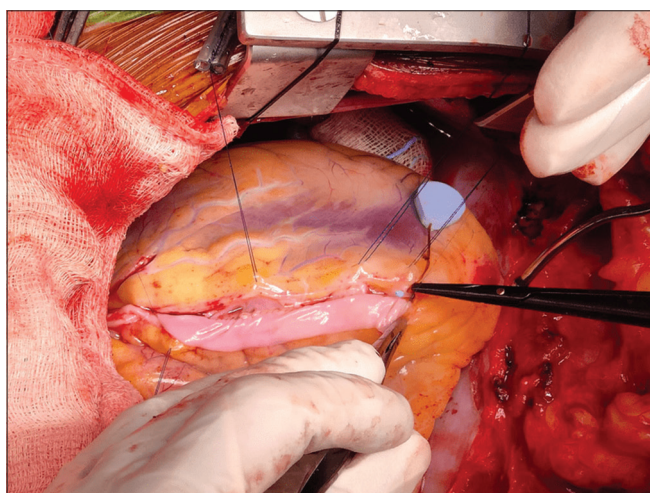


Figure 2: Vein patch being sutured over left anterior descending.

have demonstrated good results with CABG in such case scenarios.^[3,4] During CABG, the majority of the patients would require endarterectomy due to the densely adhered stents on vessel intima.^[5-9] Endarterectomy needs to be performed with utmost care as the posterior wall of coronary artery may be injured in endarterectomy cases.^[5]

CONCLUSION

In cases where CABG needs to be performed following multiple failed PCI stents, the option of stent excision along with CABG is a safe option with good short-term results. Further studies are required for ascertain long-term outcomes.

Ethical approval

The Institutional Review Board approval is not required.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent.

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Conflicts of interest

There are no conflicts of interest.

Use of artificial intelligence (AI)-assisted technology for manuscript preparation

The authors confirm that there was no use of artificial intelligence (AI)-assisted technology for assisting in the writing or editing of the manuscript and no images were manipulated using AI.

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