

Coronary Revascularization Following Failed Multiple Percutaneous Coronary Intravascular Stents



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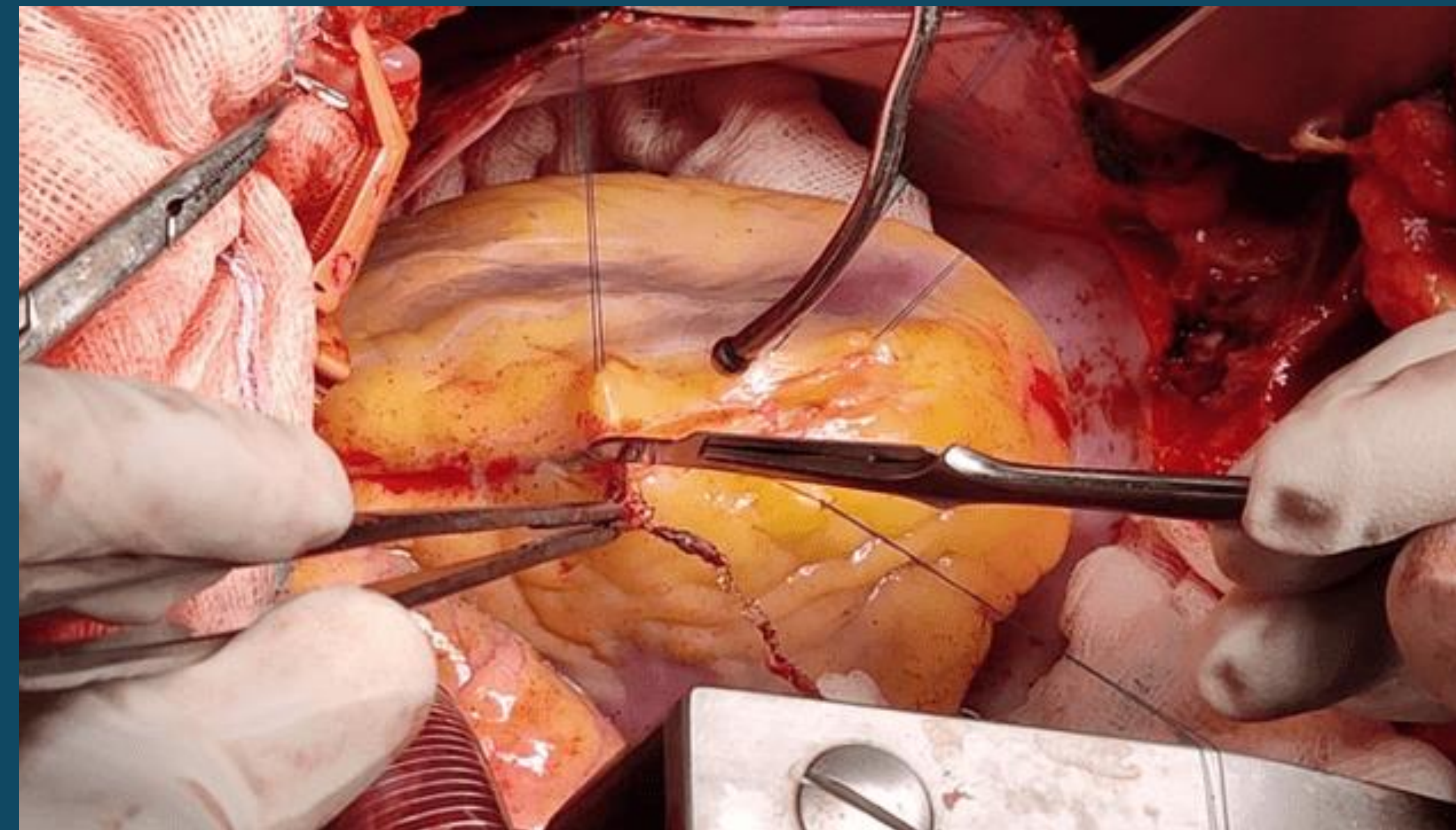
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BACKGROUND

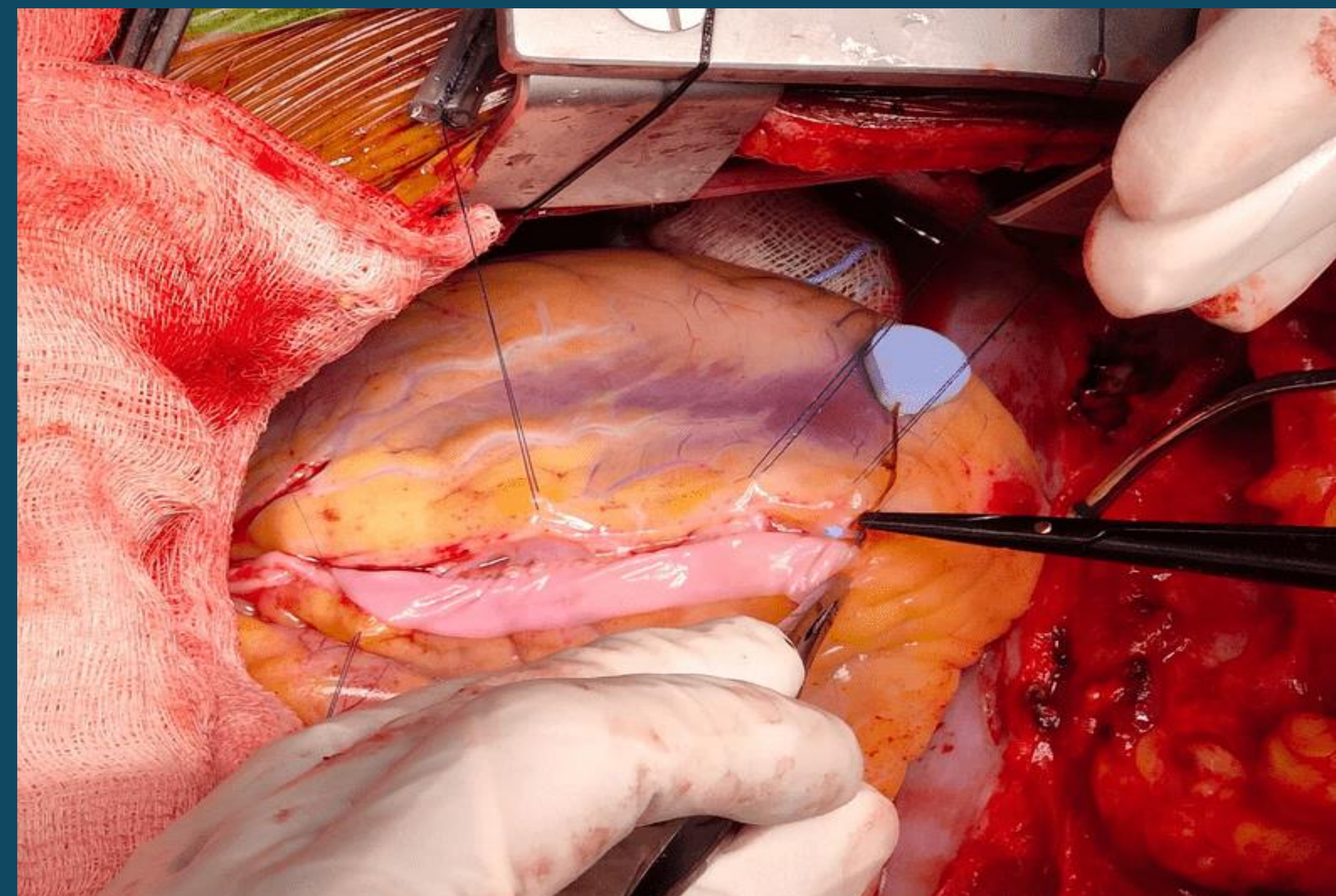
Multiple blocked Percutaneous Coronary Intervention (PCI) stents pose a significant challenge while planning Coronary Artery Bypass Grafting (CABG). In most cases, a suitable target site for distal graft anastomosis is often difficult to obtain.

CASE DETAILS

- In this technically challenging case report, we discuss a case of 40-years aged Indian male non-hypertensive, non-diabetic with smoking history of 10 years. He presented to us with recurrent chest pain since 6 months. He had previously undergone PCI with multiple stent placements in left anterior descending artery (LAD) twice, around 6 months and 1 year ago. On evaluation, coronary angiography showed all stents blocked in LAD vessel due to In-stent restenosis (ISR). So after obtaining informed consent, he was taken up for 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 (Image 1). Bypass grafting was performed by implanting long segment vein patch over the endarterectomized LAD (Image 2) and Left Internal Mammary Artery (LIMA) was anastomosed over the vein patch.
- Post-operative course was uneventful. Patient was extubated on post-operative day (POD) 1 and shifted out of Intensive Care Unit (ICU) on POD3. He was discharged in stable condition on POD 5 with low dose warfarin therapy along with routine post CABG medications.



Stent being removed from LAD along with vessel intima



Vein patch being sutured over LAD

DISCUSSION

Multiple failed PCI stents due to ISR pose a significant challenge during surgical coronary revascularisation (1). Repeat PCI is not feasible due to previously performed PCI procedures. Long term results are also not good with repeat PCI in cases with ISR in multiple stents. Surgical revascularisation with CABG remains the ideal choice in such cases (2). Few case reports have demonstrated good results with CABG in such case scenario (3,4). During CABG, majority of the patients would require endarterectomy because of the densely adhered stents on vessel intima.

CONCLUSIONS

In cases where CABG needs to be performed following multiple failed PCI stents, 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.

REFERENCES

- Yilmazkaya B, Circi R, Circi UP, Gurkahraman S, Yukselen MA, Yondem OZ, Tasdemir O. Surgical approaches in left anterior descending artery in-stent stenosis. The Annals of thoracic surgery. 2008 May 1;85(5):1586-90.
- Fukui T, Takanashi S, Hosoda Y. Coronary endarterectomy and stent removal in patients with in-stent restenosis. The Annals of thoracic surgery. 2005 Feb 1;79(2):558-63.
- Shapira OM, Akopian G, Hussain A, et al. Improved clinical outcomes in patients undergoing coronary artery bypass grafting with coronary endarterectomy. Ann Thorac Surg 1999;68:2273– 8.
- Marinelli G, Chiappini B, Di Eusanio M, et al. Bypass grafting with coronary endarterectomy: immediate and long-term results. J Thorac Cardiovasc Surg 2002;124:553– 60.