

Percutaneous coronary intervention on left internal mammary artery graft 12 years after surgery: a case report

Maja Strozzi*

University of Zagreb School of
Medicine, University Hospital
Centre Zagreb, Zagreb,
Croatia

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***ADDRESS FOR CORRESPONDENCE:** Maja Strozzi, Klinički bolnički centar Zagreb, Kišpatićeva 12, 10000 Zagreb, Croatia. / Phone: +385-98-233-650 / E-mail: maja.strozzi@gmail.com

ORCID: Maja Strozzi, <https://orcid.org/0000-0003-4596-8261>

Introduction: Percutaneous coronary intervention (PCI) is a best choice of treatment when a surgical graft fails¹. Left internal mammary artery (LIMA) graft sometimes needs intervention, mostly early and on anastomosis site. Historical data revealed balloon angioplasty as best method, but drug-eluting stent (DES) seems to be good solution in contemporary studies².

Case report: We present a case of 70-years-old men with NSTEMI, 12 years after CABG. Echocardiography revealed ejection fraction of 40%. On coronary angiography, the left anterior descending (LAD) and the right coronary artery (RCA) and two saphenous vein graft (SVG) were occluded; LIMA was patent with a significant anastomosis stenosis. Significant stenosis of the left coronary artery (LCA) and the circumflex (Cx) coronary artery were found. A PCI with DES implantation in LCA/CX was done, with good result. Patient came back soon for angina. Result of previous procedure was unchanged, and LIMA/LAD lesion was recognized as culprit. Patient refused re-operation; a high-risk intervention was performed. Via femoral artery, the LIMA was passed to the distal LAD with a hydrophilic wire, balloon dilatation with several balloon sizes was done, with immediate recoil. A short DES could not pass the tortuous vessel, so a second wire was attempted, and caused a dissection and occlusion of middle portion of LIMA. Angina, ST-segment elevation and hypotension followed. With repeated balloon dilatation, flow was established. In new attempt a second wire was introduced and two DES 3.0mm implanted. The result was optimal with TIMI 3 flow. On angiographic control 3 month later, a re-stenosis was present, with a non-expanded stent. In a re-intervention an improvement was achieved after 3.5mm HP balloon dilatation (up to 24 atm), with acceptable, but not perfect result. The patient is in follow-up for 2 years, without complains.

Discussion: This case illustrates several problems of LIMA PCI: technical difficulties, high risk in case of complication, what in our case was fortunately resolved. It seems that LIMA react similar to stent as native coronary arteries³. In our case the lesion was not completely dilatable, and stent not fully expanded, what can be explained with the fact the stenosis was on surgically created anastomosis 12 years old.

Conclusion: PCI of LIMA is rarely necessary, it is technically demanding, high risk, and with questionable long-term result. In our case, despite procedural complication and not optimal angiographic appearance a long-term clinical result was good.

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LITERATURE

1. Morrison DA, Sethi G, Sacks J, Henderson WG, Grover F, Sedlis S, et al; Investigators of the Department of Veterans Affairs Cooperative Study #385, Angina With Extremely Serious Operative Mortality Evaluation. Percutaneous coronary intervention versus repeat bypass surgery for patients with medically refractory myocardial ischemia: AWESOME randomized trial and registry experience with post-CABG patients. *J Am Coll Cardiol.* 2002 Dec 4;40(11):1951-4. [https://doi.org/10.1016/S0735-1097\(02\)02560-3](https://doi.org/10.1016/S0735-1097(02)02560-3)
2. Lozano I, Serrador A, Lopez-Palop R, Lasa G, Moreu J, Pinar E, et al. Immediate and Long-Term Results of Drug-Eluting Stents in Mammary Artery Grafts. *Am J Cardiol.* 2015 Dec 1;116(11):1695-9. <https://doi.org/10.1016/j.amjcard.2015.08.040>
3. Mori H, Braumann R, Torii S, Jinnouchi H, Harari E, Kutys R, et al. Pathology of stent implantation in internal mammary artery. *Cardiovasc Interv Ther.* 2017 Dec 5. <https://doi.org/10.1007/s12928-017-0504-7>