Case Report

PERCUTANEOUS CORONARY INTERVENTION IN UN-PROTECTED LEFT MAIN CORONARY ARTERY DISEASE - A CASE REPORT

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INTRODUCTION:
By convention, significant LMCA stenosis is treated by coronary artery bypass graft (CABG) surgery. However, with the advancement in interventional tools, operators’ expertise, pharmaceuticals and supportive measures, outlook regarding left main PCI is changing.

CASE REPORT:
Mrs. FA, a 38-year-old normotensive, nondiabetic but dyslipidaemic female, with a strong family history of coronary artery disease, presented to Khatam-un-nabeeyen heart center with compressive chest pain. She was haemodynamically stable with pulse 80 beats per minute, blood pressure 120/75 mm Hg, lung bases were clear and heart sounds were normal. Her resting ECG showed ST depression in inferior and anterior lead along with ST elevation in aVR. CK-MB and troponin I were normal. Echocardiography showed normal left ventricular (LV) wall motion and function. She was diagnosed as a case of unstable angina and treated accordingly. Coronary angiography revealed about 90% stenosis in the ostial LMCA, and 60% stenosis in the mid segment of left anterior descending coronary artery. Subsequently, elective PTCA with stenting to LMCA was done. Arrangements for emergency CABG surgery were ensured beforehand. The LMCA lesion was negotiated with BMW PTCA guidewire, and a 4 x 13 mm cobalt chromium bare metal stent (Coroflex® Blue Ultra) was deployed at the lesion at 14 atm pressure, preceded by dilatation with a 1.5 x 6 mm balloon at 8 atm. TIMI III flow was established. Post-procedural period was uneventful. Noninvasive surveillance with computed tomography (CT) coronary angiography was performed 3 months after ULM stenting which shows no significant flow-limiting lesions.

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DISCUSSION:

LMCA occlusion is potentially fatal due to the large myocardial territory affected.\textsuperscript{1} The prevalence of LMCA stenosis with multi-vessel disease is 2.5 to 10\% while isolated LMCA disease in 0.07-0.15\% cases.\textsuperscript{2-6} Significant LMCA stenosis treated medically have a poor prognosis; 3-year survival rate ranges from 60-82\% and 15 year survival rate was 27\%.\textsuperscript{7-9}

The LM trunk lacks adventitia and has greater amount of smooth muscle and elastic tissue which is probably responsible for the excellent ‘acute success’ of balloon dilatation but more chance of early and late recoil associated with restenosis.\textsuperscript{10}

Percutaneous treatment of the LM coronary artery was first performed by Andreas Grünzig in 1977 and he reported that such procedures were quite difficult to perform and that early mortality was too high to be accepted as a standard treatment.\textsuperscript{11} Elective PCI in unprotected LMCA stenosis that can be treated by CABG, is a discouraged.\textsuperscript{12} However, this recommendation is based on the clinical trials that are more than 20 years old, so the results of these trials may not be optimally applicable to current practice.\textsuperscript{13} Recent observational studies and randomized trials comparing PTCA with stenting to CABG in the management of LMCA lesion are more encouraging and showed no significant difference in rates of death or of the composite end point of death, myocardial infarction (MI), or stroke between patients receiving stents and those undergoing CABG, but stenting was associated with higher rates of target-vessel revascularization than was CABG.\textsuperscript{14-23}

The nonrandomized MAIN-COMpare trial involving 2,240 patients with UPLM disease compared outcomes PCI with CABG and 5-year follow-up, showed similar rates of mortality.\textsuperscript{24} The randomized SYNTAX trial comparing CABG with PCI for left main/multivessel disease. For the left main subgroup, there were no differences in 1-year individual outcomes of death or MI, despite significantly higher rates of stroke in the CABG group while repeat revascularization was more common with PCI and was particularly driven by higher rates among
patients with left main disease treated for additional 2-vessel or 3-vessel disease. Angiographic and procedural successes do not differ significantly between Drug-eluting Stent (DES) versus Bare-metal Stent (BMS) in case of LMCA PCI. DES has been associated with reduced incidence of in-stent restenosis at the cost of increased risk of late stent thrombosis. DES use in unprotected LMCA revascularization represents a narrow margin between the need for a potent anti-restenotic effect balanced by the risk of stent thrombosis related to delayed healing.

CONCLUSION:
In Pakistan limited number of PCIs is being performed round the year in Government and private levels and LMCA lesions are treated mainly by CABG surgery. However, operator expertise, pharmacotherapeutics and auxiliary supports are developing in this country day by day. PTCA with stenting specially using DES will hopefully become a viable alternative to CABG in carefully selected patients with left main disease.

REFERENCES:


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