PERCUTANEOUS INTERVENTION IN A PATIENT WITH PRIOR CORONARY BYPASS SURGERY -

(A Case Report)

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KEYWORDS :

Introduction

Coronary artery bypass Graft (CABG) is a well established form of revascularisation. The efficacy of CABG has been enhanced by widespread use of arterial graft and antiplatelet agents [1]. Recurrent ischaemia appears in 4-8 per cent of patients annually [2]. Progress of disease in native coronary artery is 5 per cent annually. In saphenous venous graft (SVG), failure occurs in 7 per cent during first week, 14-20 per cent during first year, 1-2 per cent per year from 1 to 6 years, and 4 per cent per year from 6-10 years. At 10 year following surgery only 40 per cent of patent graft are free from disease. Reoperation is required in 2-3 per cent of patients by 5 years, 12 to 15 per cent by 10 years and 30 per cent by 12-15 years following an initial CABG.

The in-hospital mortality was 4.1 per cent for initial operation, and 10.6, 24.5 and 38.5 for first, second and third reoperation [4]. In addition, there is less relief of angina, reduced graft patency and 5-38 per cent risk of injury to a patent internal mammary graft [5]. These factors have promoted interventional strategies whenever possible [6]. There are also many symptomatic patients who are not candidates for reoperation in view of limited myocardium at jeopardy, risk to patent grafts, advanced age, poor left ventricular function and coexisting medical problems. At Emory University Hospital in 1991, 24 per cent underwent percutaneous coronary intervention with prior CABG [7].

Case Report

A 50-year-old male patient, known hypertensive had typical angina in 1984. Exercise stress test was positive for inducible ischaemia. He underwent coronary angiography in 1989 which showed left main coronary artery (LMCA) normal, left anterior descending (LAD) - 90 per cent stenosis after second diagonal followed by another 80 per cent stenosis, Left Circumflex artery (LCX) 90 per cent stenosis before second obtuse marginal (OM2).

Right coronary artery (RCA) showed 80 per cent stenosis of Posterior Descending Artery (PDA). LV Function - Ejection fraction 60 per cent. He was operated in and was given saphenous venous graft to LAD, OM2 and PDA.

He developed angina within a year and repeat coronary angiography showed complete occlusion of graft to LAD and PDA. He was advised angioplasty to LAD, but the procedure was not successful in view of chronic total occlusion. He was angina free with optimal antianginal therapy.

Patient again developed angina (CCS class II) and palpitation in 1996. Holter showed non sustained ventricular tachycardia with episodes of sinus pauses, one lasted for 5 seconds and evidence of silent myocardial ischaemia. 2D echocardiography showed no regional wall motion abnormality and ejection fraction of 60 per cent. Coronary angiography showed LMCA normal, LAD 99 per cent stenosis mid segment, SVG to OM2, 90 per cent proximal stenosis with SVG to PDA and LAD occluded. LCX and PDA lesion had also progressed. He was considered for percutaneous intervention in view of his angina, silent myocardial ischaemia on holter and previous CABG. Patient was advised to take Dispirin, Ticlopidine and amlodipine pre procedure.

Procedure

LAD was cannulated via right femoral artery, with 8 F Guiding catheter JL4. Patient was exhibited 10,000 unit of heparin. Hyperflex wire was used and LAD was dilated initially with 2 mm balloon and then by 3 mm balloon (Fig 1). Next day the graft to OM2 was dilated. Guiding catheter used for this was amplatz left one 8F and guide wire used was extra support. After predilatating the lesion freedom stent was deployed in SVG under high pressure inflation (Fig 2). The patient was continued on aspirin, ticlopidine and calcium channel blocking drugs. Low molecular heparin was given for 5 days post procedure.

The patient is angina free and repeat stress test showed no evidence of inducible ischaemia.

Discussion

Patients presenting with recurrence of ischaemia following CABG have diverse anatomical problems. This patient was not given left internal mammary artery graft to LAD. The selection of percutaneous intervention must be based on careful analysis of initial success, complication and long term efficacy com-

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Fig. 1 :

pared to other strategies [3].

Recurrent ischaemia occurring within days or week of surgery is due to acute vein graft thrombosis, though stenosis may exist at proximal or distal anastomosis. Other problems encountered are wrong vessel bypassed, incomplete revascularisation due to stenosis distal to graft insertion or diffuse disease. Coronary angiography is required and angioplasty of suture line can be safely done. If graft has thrombosed, native vessel should be targeted and balloon dilatation of graft may be effective if thrombosis is not extensive [8]. Thrombolysis at this juncture is hazardous. Ischaemia occurring 1-12 months following surgery is due to perianastomoses stenosis in 1/3 of patients and can be dilated. Stenosis in SVG can be easily dilated as it is due to fibro intimal hyperplasia with low risk of embolism, though 50 per cent are likely to have restenosis. Data using stent are encouraging with lower rate of restenosis and favourable results are obtained using Palmaz Schatz stents for ostial graft [9]. Patients having ischaemia 1-3 years following surgery have new lesion in graft conduits or native vessel are amenable to angioplasty with little risk of distal embolism unless patient has hypercholesterolaemia or diabetes mellitus.

Recurrent ischaemia more than 3 years after surgery is secondary to atherosclerotic lesions. The plaque in vein graft may be softer, more friable and are frequently associated with thrombus. Improved luminal outcome has been reported with stent placement in older vein graft. The restenosis rate with stent is 20 per cent at 6 months with angioplasty, atherectomy 53 per cent, excimer laser 61 per cent, transluminal extraction atherectomy 40 per cent. Percutaneous intervention usually is not preferred for multiple graft le-

Fig. 2 :

sion, bulky graft atheroma of thrombus laden graft. The randomized study of stent vs angioplasty indicates that stenting results in superior lumen enlargement, higher procedural success, and less need for emergency CABG [10]. This is why stenting of SVG was considered in this case. Balloon angioplasty was done in LAD as the lesion was long and restenosis are more common in long lesion as compared to focal lesion [11].

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