



## Drug-eluting stent implantation for radial artery graft aorta-ostial stenosis

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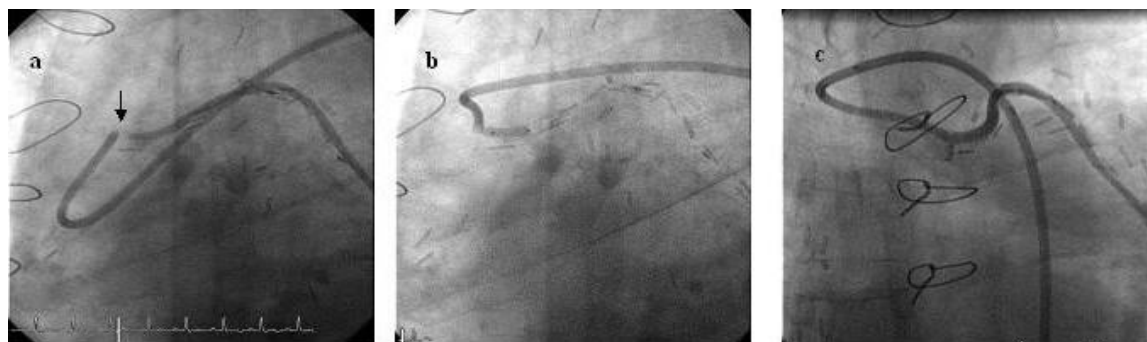
The use of the free radial artery (RA) graft in coronary artery bypass surgery (CABG) was revived by Acar et al in 1992 with reports of excellent early patency rates following improved harvesting techniques.<sup>1</sup> However, stenoses do occur within RA grafts and severe intimal hyperplasia may result in occlusion unless early angiography is performed in patients who develop recurrent angina soon after undergoing CABG surgery.<sup>2-5</sup>

Percutaneous coronary intervention (PCI) is probably the treatment of choice, but few cases have been reported in the literature.<sup>6-9</sup> We believe this is the first case report of drug-eluting stent (DES) implantation to an aorta-ostial RA stenosis, chosen to optimise both the early and the long-term outcome and avoid the difficult-to-treat in-stent restenosis.

### Case report

A 54-year-old man presented with recurrent angina 5 years after CABG surgery, including left internal mammary artery to left anterior descending coronary artery, free right internal mammary artery (RIMA) to the occluded right coronary artery (RCA) and radial artery (RA) graft to the obtuse marginal branch of the circumflex coronary artery (OMCX). Coronary arteriography showed patent LIMA and RIMA but a severe aorta-ostial stenosis of the radial artery graft (Figure 1a).

**Figure 1. (a) Severe discrete aorta-ostial stenosis (arrow) in a radial artery graft to the OMCX; (b) 2.75mm×20mm Taxus™ stent positioned to cover the aorta-ostial lesion; (c) final result after flaring the ostium of the stent.**



The lesion was crossed with a 0.014 inch floppy guidewire, pre-dilated with a 2.5mm×10mm long Aqua™ balloon catheter—with improvement, and stented with a 2.75mm×20mm long Taxus™ stent (Figure 1b) with an excellent angiographic result (Figure 1c). He immediately became symptom-free and remains so after 4 years.

## Discussion

The use of the free RA in CABG surgery has only become popular again in the last 15 years.<sup>1</sup> A significant attraction has been the possibility of better long-term patency compared to saphenous vein grafts. Although some studies have reported 5-year patency rates between 83% and 87% in asymptomatic cases,<sup>2–4</sup> in symptomatic patients they may be as low as 51.2%.<sup>5</sup>

The incidence of severe stenoses in RA grafts and their distribution along the length of the graft remain unclear, although Khot et al reported 15.1% with severe stenoses (>70% or string sign) in their study of symptomatic patients in addition to the 33.7% with occlusions.<sup>5</sup>

When faced with recurrent angina and stenosed or occluded RA grafts, repeat surgery is rarely considered, especially if the other conduits are patent and disease-free. For severely stenosed RA grafts, PCI should be preferable to additional medical treatment, although totally occluded RAs would probably not be amenable to this. Surprisingly, however, PCI to RA stenoses have rarely been reported.<sup>6–9</sup>

Aorta-ostial lesions are almost certainly due to fibrointimal hyperplasia and like ostial lesions in saphenous vein grafts are likely to be tough, resistant, and prone to recoil after balloon dilatation. Stenting should attain the best acute result, reduce the incidence of restenosis, and improve the long-term outcome. DES implantation should further diminish the chance of in-stent restenosis—a particularly difficult problem to deal with.

Although, late/very late thrombosis in drug-eluting stents has been recognised as a serious problem (occurring in approximately 0.5% of patients), the advantages of DES in this case outweigh the disadvantages. Continuing aspirin and clopidogrel is also likely to reduce the incidence of this phenomenon.

This case illustrates the first report of a Paclitaxel-eluting stent implantation to an aorta-ostial radial artery graft stenosis, demonstrating both an excellent acute angiographic and longer-term clinical result. Further reports are required on the role of PCI and drug-eluting stents in patients with RA graft lesions.

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