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IMAGES IN CARDIOLOGY

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Shotgun stenting of the left main coronary artery bifurcation

Disease of the left main stem (LMS) coronary artery has traditionally been regarded as an indication for coronary artery bypass surgery rather than angioplasty. When the disease involves the bifurcation into the left anterior descending (LAD) and circumflex (Cx) branches, the technical difficulties of implanting stents, with the accompanying risks of subacute thrombosis and restenosis, have made this almost exclusively a surgical preserve.

A new technique of stent implantation, known as “shotgun” stenting (a variant of “V-stenting”) has made this pattern of disease amenable to angioplasty. In this technique, two separate stents are deployed together, beside each other, one running from the LMS to the LAD and the other from the LMS to the Cx. The proximal portion of each stent extends well into the LMS and the distal ends well into each branch. The appearance is, therefore, like that of a double barrelled shotgun, albeit with the two distal ends of the barrels splayed apart.

The advantages of this technique over previously used bifurcation stent techniques are simplicity of deployment, smoothness of the arterial and stent linings produced, the lack of need to dilate through the sides of the stents

(avoiding stent distortion), complete lesion coverage, precise sizing of each stent relative to the distal artery (avoiding undersizing in the left main and oversizing in the LAD or circumflex) and the ability to cover disease in any part of the LMS and the proximal portions of the LAD and Cx with just two stents. The potential disadvantage is the creation of a new metal “carina” in the midline of the left main artery. Until endothelialisation occurs and tissue grows in this area it is important to maintain double antiplatelet treatment.

We present the case of a 62 year old man with chronic stable angina and a severe stenosis of the distal LMS affecting the ostia of both the LAD and Cx. He underwent “shotgun” stenting. Four months later, he remains well and symptom-free, and is taking lifelong aspirin and clopidogrel.

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(A) Coronary angiogram showing a severe stenosis of the bifurcation of the left main stem in a 62 year old man with chronic stable angina. (B) After predilatation with two 2 mm balloons, two stents were implanted in “shotgun” pattern; 3 × 24 mm Taxus (Boston Scientific) to left main stem (LMS)-left anterior descending arteries, and 4 × 23 mm Zeta (Guidant) to LMS-circumflex arteries. (C) Final result.