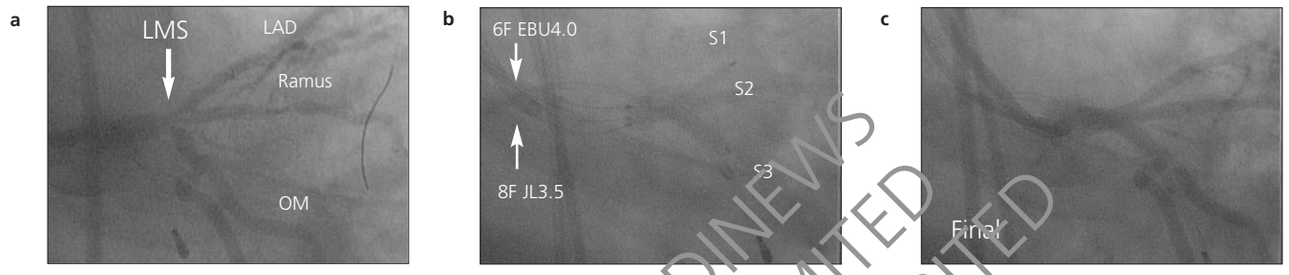
'Gatling gun' stenting of left main stem trifurcation stenosis

CHRIS NEWMAN, JULIAN GUNN

Figure 1. Coronary angiogram showing: **a**: trifurcation left main stenosis; and **b**: deployment of three stents; and **c**: the final result



Key: LMS = left main stem; LAD = left anterior descending; OM = obtuse marginal; S = stent

Case report

A 73-year-old man presented with post-infarct angina. Cardiac catheterisation revealed mildly impaired left ventricular function and high-grade stenoses of the right, left anterior descending, ramus intermedius and left main coronary arteries (RCA, LAD, ramus and LMS respectively). The LMS stenosis involved the trifurcation and extended into the ostia of the LAD, ramus and circumflex (Cx) coronary arteries (A).

Percutaneous coronary intervention was undertaken. After premedication with aspirin, clopidogrel and heparin, an 8F sheath was placed in the right femoral artery and a 6F sheath in the left. Due to the presence of complete heart block, a temporary pacemaker was also inserted into the right ventricle via the right femoral vein for the duration of the procedure. Abciximab was administered. The RCA was dilated and stented using conventional techniques.

An 8F JL3.5 guide catheter (Medtronic) was advanced from the left femoral artery to the LMS and 'extra support' guidewires (Biotronic) were placed in the LAD and the ramus (figure 1). The distal lesions were dilated and stented in the normal way. A 6F EBU4.0 guide catheter (Medtronic) was advanced from the left femoral artery to the LMS and an 'extra support' guidewire was placed in the obtuse marginal branch of the Cx artery (figure 2). After pre-dilatation of the ostial lesions in the LAD and the ramus, three stents were placed side-by-side, like the barrels of a 'Gatling' gun, extending from the LMS to the LAD, ramus and Cx. These were paclitaxel-eluting Taxus Liberte® stents (Boston Scientific), and measured 2.5 x 20 mm, 2.5 x 20 mm and 3.0 x 20 mm, respectively. Using three inflation devices controlled by three operators, all three stents were deployed simultaneously (B). The final result was excellent (figure 3).

The patient went home the next day with instructions to take aspirin and clopidogrel 75 mg lifelong. He is scheduled to undergo six-month angiography.

Comment

Richard Gatling (1818–1903) was a North American inventor, born in Money's Neck, NC. He studied medicine, but never practised. He developed his rapid-firing gun in 1861–2. This had a revolving battery of 10 barrels, and could fire 1,200 rounds a minute. The Sheffield Gatling has only three barrels (so far), and is particularly suited to treat lesions at large-calibre trifurcations. It is a variant of the 'shotgun' or 'kissing' stents approach, used to treat the much more common bifurcation lesion.

Conflict of interest

CN and JG have received spronsorship to attend interventional cardiology meetings from manufacturers of drug-eluting stents.

Chesterman Wing, Northern General Hospital, Herries Road, Sheffield, S5 7AU.
Chris Newman, Senior Lecturer and Honorary Consultant Cardiologist
Julia Gunn, Senior Lecturer and Honorary Consultant Cardiologist
Correspondence to: Dr J Gunn
(email: j.gunn@sheffield.ac.uk)

Br J Cardiol (Acute Interv Cardiol) 2006;**13**:AIC 48