manufacturer has produced tapered, more flexible guidewires that straighten arterial contours less and push the burr into the edge of a curve less forcefully. The distal 9 cm of the drive shaft tubing was removed, also making the shaft more flexible. With evolution of the shaft-guidewire system biased cutting is reduced. However, in severely angulated segments such as the takeoff of a left circumflex from the left main coronary artery with an angle $> 120^\circ$, a more substantial wire (type C or Extra Support) can be preshaped to match the anatomy. This lesion specific prebending provides more complete abrasion of the plaque with decreased deeply biased cutting.

Remaining concerns

Unfortunately, rotational atherectomy is a demanding technique that requires training and experience to perform with few complications. Praeceptorships and training courses should improve results and acceptance in the future.

Cost effectiveness of rotational atherectomy for other than undilatable lesions is yet to be proven, and cost justification will be required before widespread use of rotational atherectomy can be expected. The RotaLink system, which provides a detachable turbine and drive shaft with the ability to add extra burrs at a reduced cost, is currently being tested. This system will make the cost of rotational atherectomy more competitive.

Debulking is often used in ostial lesions, in diffuse disease, and in calcified segments before stent implantation. Ideally, a debulking device should remove the most calcified and unyielding elements of the plaque, leaving only a soft tissue rim to dilate or stent. The Rotablator should be uniquely suited for these indications, but the lack of confirmatory data from randomised trials, concerns regarding creatine kinase concentrations, and cost issues have hindered widespread use of rotational atherectomy even in these potentially favorable situations.

These concerns are valid and can only be answered by carefully conducted clinical trials. Preliminary data suggest that abciximab may reduce post-rotational atherectomy creatine kinase increase,¹¹ and a randomised trial to address the adjunctive use of abciximab is planned. A trial of rotational atherectomy ver-

sus dilatation before stent implantation is beginning, and a trial comparing angioplasty versus rotational atherectomy is underway (Dilation *v* Ablation Revascularization Trial).

Angioplasty has failed to provide longlasting results with diffuse within-stent restenosis, while preliminary data suggest that rotational atherectomy is effective. A randomised trial to establish the appropriate role of rotational atherectomy in this increasingly common clinical situation is planned.

Rotational atherectomy is still evolving and is now established only as a niche device in coronary intervention. If increasing numbers of operators are able to obtain predictable results from improved technique, if data are favourable from core laboratory monitored trials, and if cost becomes more competitive, then rotational atherectomy is, indeed, here to stay as a major tool in percutaneous treatment of coronary disease.

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If Rotablator is useful, why don't we use it?

David R Ramsdale, John L Morris

Percutaneous transluminal coronary rotational atherectomy with the Rotablator can improve acute success in difficult lesion subsets—bulky, balloon resistant calcified lesions, lesions on bends, ostial bifurcation and long lesions, lesions in small vessels, and diffuse disease. Debulking before stenting and within-stent

restenosis may be other indications. Despite such a wide range of applications, why is it that only a few cardiologists in the UK have any experience with the device?

Perhaps the first reason is a reluctance to get involved with what appears to be a complex difficult technique using unfamiliar and relatively

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non-user friendly equipment to deliver a metal burr rotating at high speed into small coronary vessels. In addition, rotational atherectomy is commonly associated with coronary vasospasm and a concern exists for device specific complications such as wire fracture, stalling of the Rotablator in the lesion, and coronary perforation.

Unlike PTCA two operators are essential and both must be familiar with the equipment, its set-up, and operation. Operators need to attend a training course, understand the problems that can arise with the equipment, and initially be supervised by an experienced colleague. These factors dampen the enthusiasm for a new procedure. Cases then need to be performed regularly to increase familiarity and ease of use. One early disaster because of failure to follow such guidelines has dissuaded operators from continuing.

Rotational atherectomy takes longer than balloon angioplasty (PTCA) and time needs to be set aside for complex cases. It is not a procedure for the impatient interventionist!

Follow up data has failed to show a reduction in restenosis over PTCA and, although perhaps an unrealistic hope, this has discouraged its wider use.

Finally, the high cost of the equipment is a major negative factor. A step-up technique using at least two burrs and adjunctive PTCA at low pressure is current practice. However each device/burr costs £1000. Few regional centres can fund this activity to any degree as few purchasers have the ability to pay for ever-increasingly expensive advances in treatment. The "RotaLink" system may reduce the cost a little but rotational atherectomy will not be practised widely unless either the cost falls markedly or there is a dramatic rise in funding for coronary intervention. If either happens and cardiologists familiarise themselves with rotational atherectomy, its indications and contraindications, and the technique itself, the technique will be used more frequently to improve the acute results in subsets of patients currently problematic for PTCA.