United Kingdom

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What is the prevalence of endovascular SFA therapy as compared to surgical?

The prevalence is high and rising. Angioplasty is increasingly being used as a first-line therapy. Technical failure is less frequent now with new technologies and techniques. Patients with critical limb ischemia are often elderly with multiple comorbidities, and so open surgical options are less attractive to them and their clinicians. Patients with lifestyle-limiting claudication who have failed medical and exercise therapy are generally not candidates for surgery but are eminently suitable for endovascular treatment. The minimally invasive nature of the therapy also means that patients can be treated as "day cases" or have short inpatients stays, which is beneficial not only for patients but also for the use of hospital resources.

How would you describe device availability in your country, both in types of devices and different vendors within each class?

As long as devices are CE Marked, they are available in the United Kingdom. The larger companies supply devices directly, and others go through distributors. The main restriction is in justifying the use of these devices to our hospital authorities if they are expensive and robust evidence is lacking. The endpoint we need to show is clinical improvement rather than late lumen loss.

In what ways does reimbursement (both government and private, if applicable) affect device use? Which device classes are most affected?

Generally speaking, the cost of the most expensive medical devices, such as stent grafts, stents (bare and drug eluting), and drug-coated balloons, used in the treatment of peripheral artery disease is reimbursed. The method of reimbursement varies between different institutions, but should be covered if use of the device can be justified to the hospital authority.

Are there any historic or cultural forces unique to your country that have affected the penetration of endovascular options?

It used to be difficult to get the cost of expensive consumables such as stents reimbursed, which led to their poor uptake in the SFA. In addition, the early results using stents were poor, so this led to a culture of avoiding stent use in the SFA. The current evidence and developments in stent technology in the SFA, as well as the ability to obtain reimbursement, have changed this, although I still prefer to avoid placing a stent in the SFA unless absolutely necessary.

However, working in a social health care system, we have to be conscious of the increasing cost of newer technologies and the ever-present need for evidence of cost-effectiveness compared with other technologies and therapies. This constant pressure to reduce expenditure has an effect on the penetration of endovascular options that add to the expense without good evidence of an advantage.

How do most physicians receive training in endovascular therapies in your country?

In the United Kingdom, we have an interventional radiology (IR) curriculum for training that extends over 6 years and takes place at accredited centers for subspecialty training. The core interventional skills are acquired in the first 3 years alongside general radiological competencies, which are assessed by examination. The last 3 years of training concentrate on developing advanced clinical and IR competencies, and although there is no British IR examination, all trainees are encouraged to take the European Board of Interventional Radiology examination. Entry requirements for this examination ensure trainees have had substantial experience in a range of endovascular therapies, and the examination ensures knowledge of safe practice. Successful completion of training leads to a certificate of completion of training in clinical radiology with IR subspecialization from the Royal College of Radiologists.

What is your personal strategy or algorithm for treating:

The answer to most of these depends on the patient's age, comorbidities, and presence of a vein that is of adequate quality for bypass surgery.

- **Short, focal lesions:** Balloon angioplasty with a drug-coated balloon.
- **Long lesions:** If the patient is elderly and has critical limb ischemia, I would consider a covered stent, as the evidence for drug-coated balloons and drug-eluting stents is lacking in full-length SFA disease. However, I am happy to treat full-length SFA occlusions with angioplasty via the subintimal route with spot stenting. This may not stay patent in the long-term, but should improve clinical symptoms and avoid or minimize amputation. In younger patients with a suitable vein, I would advise using a femoropopliteal bypass graft.
- **Calcified lesions:** Eccentric, heavily calcified plaques do not usually respond to percutaneous transluminal angioplasty (PTA), so I would consider stenting, and nowadays, I tend to place drug-eluting stents by preference. Atherectomy and cutting or scoring balloons are being proposed by some interventionists as a method of modifying calcified plaque to prepare the artery for drug-coated balloon use. Such an approach remains to be validated and adds to the cost, so this is not an approach I use. A lot of my patients are diabetic and have calcified arteries, and the evidence for the newer technologies in heavily calcified arteries is lacking. If simple endovascular options fail, bypass surgery is deemed necessary.
- **CTOs:** These are recanalized via the subintimal space, and they respond well to PTA but with the provision that the entry and reentry points might need stenting. If so, I would choose a drug-eluting stent. Again, heavily calcified arteries are problematic.
- **In-stent restenosis:** This can respond well to PTA, in which case, I would use a drug-coated balloon in an attempt to prevent recurrent stenosis. However, if it doesn't dilate, there is little role for restenting. I have used atherectomy devices very effectively in this situation in the past to remove the neointimal hyperplasia and allow PTA. However, if the stent is chronically occluded, it can be very difficult to recanalize, and then I would refer the patient for bypass surgery.
- **Claudicants:** These patients are now in the minority, as they are treated conservatively with advice to stop smoking, exercise, and optimize medical therapy. However, if they fail conservative therapy and remain very symptomatic, I prefer to treat them with angioplasty and drug-coated balloons when possible. ■

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