Femoral endarterectomy with patch angioplasty has long been the favored approach to the treatment of patients with symptomatic common femoral artery (CFA) occlusive disease. The procedure can be performed through a small incision, and the plaque can often be removed en bloc, followed by enlargement of the CFA and ostia of the superficial femoral artery and profunda femoris with a patch. In skilled hands, this operation can be performed with low morbidity and mortality and with a short hospital stay.

Primary patency rates of 74% to 91% at 5 years have been reported in the literature (1–5). Italian investigators recently reported their experience with 121 CFA endarterectomies in 117 patients (6). All procedures were performed under regional anesthesia with no perioperative deaths or major complications. Minor complications occurred in 6.6% of cases. At 7 years, the primary and primary assisted patency rates were 96% and 100%, respectively. Femoral endarterectomy can also be performed in conjunction with iliac stenting as an alternative to the traditional surgical approach of aortobifemoral bypass grafting. This “hybrid” approach to iliofemoral disease has gained greater acceptance because of the favorable long-term results and decreased morbidity compared with aortobifemoral bypass (7–10). Although major complications following CFA endarterectomy are infrequent, minor complications have been reported in 6.6% to 9% of cases (1,6). In one series, a wound infection rate of 14% was seen (11).

Percutaneous transluminal angioplasty (PTA), on the other hand, has been regarded as a less effective treatment strategy for CFA stenosis/occlusion. The plaque in the CFA is often bulky, eccentric, and heavily calcified and may not respond well to balloon dilation. There is frequently involvement of the femoral bifurcation, with the potential for plaque shift into the profunda femoris or superficial femoral artery. The prevailing viewpoint is also that stent implantation into the CFA should be avoided if at all possible. Although data regarding CFA stenting are limited, there is the perception that stenting may complicate or limit future surgical options and that stents have a higher failure rate in this location. In addition, there is the concern that stenting across the origin of the profunda femoris could potentially lead to future compromise of this critically important source of collaterals to the lower extremity. Only a few small series of CFA PTA and stenting have been reported. Silva et al. (12) reported 21 CFA procedures in 20 patients. Procedural success was achieved in 90% of cases. At a mean follow-up of 11.4 months, 89% of patients continued to show improvement by at least 1 Rutherford category. Stricker and Jacomella (13) reported on 33 stent-assisted angioplasty procedures of the CFA and bifurcation in 27 patients. Technical success was 100%. At 3 years, the cumulative patency rate was 83%.

In this issue of the Journal, Bonvini et al. (14) challenge the current dogma regarding treatment of the CFA. They present a large, retrospective, single-center experience with CFA PTA. Using a prospectively maintained database, they described the outcomes of 360 consecutive percutaneous interventions for CFA atherosclerotic disease. This is the largest series of its kind regarding open or endovascular treatment of the CFA. The majority of the CFA interventions (73.1%) were done in conjunction with treatment of inflow and outflow vessels. Balloon angioplasty was the primary mode of therapy in almost all cases. CFA stenting was performed in 133 cases (36.9%) because of a suboptimal angioplasty result. A small number of excisional atherectomy procedures (6.9%) were performed in the later years of this series. The overall procedural success rate was 92.8%, with a low rate of major complications. One-year follow-up was available for 87.2% of patients, with a duplex ultrasound–derived binary restenosis rate of 27.6%. The clinically driven target lesion revascularization rate (TLR) was 19.9%. Interestingly, binary restenosis and the need for TLR were lower for those patients who received stents. There was also a trend toward better clinical outcomes for the small number of patients who underwent excisional atherectomy.

Are the results from this study good enough to change the current treatment paradigm for CFA disease? First, a number of study limitations must be addressed. Although the 1-year results are quite acceptable, the longer-term outcomes are not as promising. The investigators reported that restenoses >50% observed beyond 18 months were
considered disease progression not related to the procedure and were excluded from the outcome analysis” (14) This is an artificial distinction that would have little meaning to the patient who returns after 2 years with recurrent symptoms due to renarrowing or reocclusion of the CFA. In addition, this method of outcomes reporting is not consistent with the reporting standards for outcomes following open or endovascular revascularization procedures. Review of the Kaplan-Meier curves for restenosis and TLR revealed a significant drop-off in patency after 1 year, with frequent need for reintervention. The 5-year primary patency rate appeared to be only approximately 50%. These longer-term results are inferior to those achieved with endarterectomy and patch angioplasty. Although a large number of stents were implanted in the CFA in this series with improved outcomes compared with PTA alone, systematic radiographic follow-up of these stents to evaluate for stent fracture was not performed. The rate and implications of stent fracture in this location are unknown. It also remains unclear as to whether CFA stenting, as performed in this series, would complicate future surgical approaches to CFA disease if symptomatic restenosis should occur.

The researchers correctly pointed out that the techniques employed in this study are not contemporary and that the results achieved may not reflect outcomes that could be achieved in current practice. In Europe, where drug-eluting balloons and drug-eluting stents are commercially available, the percutaneous approach to CFA may be entirely different. In the United States, excisional atherectomy or other debulking modalities are commonly employed for CFA disease (15). It remains uncertain how outcomes following use of these treatment approaches would compare with those of surgical outcomes or balloon angioplasty alone.

The investigators are to be congratulated for adding significantly to our knowledge regarding the endovascular treatment of CFA disease. They demonstrated that excellent short-term results can be achieved with balloon angioplasty and provisional stent implantation. These results highlight, however, that balloon angioplasty alone with or without stent implantation is not ready to replace surgery as the “gold standard” treatment for CFA occlusive disease. A demonstration of better long-term patency with newer endovascular modalities will be necessary for that to occur. Local drug delivery, with or without lesion debulking, offers the promise of improved outcomes; however, further study is required.

Reprint requests and correspondence: Dr. John R. Laird, Internal Medicine, UC Davis, 4860 Y Street, Suite 3400, Sacramento, California 95817. E-mail: john.laird@ucdmc.ucdavis.edu.

REFERENCES


Key Words: angioplasty • femoral artery • stents.