

BY DIERK SCHEINERT, MD

Approximately one third of the obstructive lesions in peripheral arterial occlusive disease (PAOD) affect the aortoiliac segment. Iliac artery obstructions have traditionally been treated with open surgery. Although highly effective, these surgical interventions are associated with a substantial procedure-related risk for the patient. In a meta-analysis of data published after 1975, the aggregate operative mortality rate for aortofemoral bypass surgery was 3.3%, and the aggregate systemic morbidity rate was 8.3%.¹

Percutaneous transluminal angioplasty (PTA) is a less-invasive treatment alternative, and it has proven to be an effective technique for the treatment of focal iliac artery stenoses. The procedural technical success rate has improved significantly (up to 95%), especially when adjunctive stent placement is used. The patency rates of 80% to 90% after 5 years that have been reported for short iliac stenoses are comparable to surgical results.²⁻⁵

THE TASC GUIDELINES

To optimize and maintain international medical standards in the management of PAOD, a consensus expert

opinion of key professional societies, the TransAtlantic InterSociety Consensus (TASC) Working Group, developed a consensus document.⁵ The recommendations of the TASC attempted to define a treatment of choice, depending on the morphologic stratification of iliac lesions (Table 1). According to these guidelines, PTA is generally considered for more focal disease (type A and B lesions). For complex, multifocal, or totally occluded atherosclerotic segments of the iliac arteries (type C and D lesions), TASC recommends surgery as the procedure of choice.

These recommendations may be a good guide for an institution with a low volume of interventions or during the initial phase of implementing the peripheral program. Completed in the middle of 1999, the consensus process represented the most up-to-date view at that time. However, in the last 5 years, the development of new endovascular devices and stents has proceeded extremely quickly. Currently, the length and morphology of iliac lesions has less influence on technical success and long-time results for experienced and well-skilled interventionists.

The advancement of interventional techniques for



Figure 1. Leriche syndrome in an 82-year-old patient treated by bilateral simultaneous implantation of balloon-expandable stents using a combined brachial and femoral access.

ARTERY OCCLUSIONS

Recanalization of a totally occluded iliac artery can be a technically demanding procedure. The first, and most

TABLE 1. TASC RECOMMENDATIONS FOR THE TREATMENT OF ILIAC LESIONS

Endovascular procedures are the treatment of choice for type A lesions, and surgery is the procedure of choice for type D lesions. More evidence is needed to make any firm recommendations about the best treatment for type B and C lesions.

TASC Type A Iliac Lesions

- Single stenosis <3 cm of the CIA or EIA (unilateral/bilateral).

TASC Type B Iliac Lesions

- Single stenosis 3 cm to 10 cm in length, not extending into the CFA.
- Total of two stenoses <5 cm long in the CIA and/or EIA and not extending into the CFA.
- Unilateral CIA occlusion.

TASC Type C Iliac Lesions

- Bilateral 5-cm to 10-cm-long stenoses of the CIA and/or EIA, not extending into the CFA.
- Unilateral EIA occlusion not extending into the CFA.
- Unilateral EIA stenosis extending into the CFA.
- Bilateral CIA occlusion.

TASC Type D Iliac Lesions

- Diffuse, multiple unilateral stenoses involving the CIA/ EIA, and CFA (usually >10 cm).
- Unilateral occlusion involving both the CIA and EIA.
- Bilateral EIA occlusions.
- Diffuse disease involving the aorta and both iliac arteries.
- Iliac stenoses in a patient with an abdominal aortic aneurysm or other lesion requiring aortic or iliac surgery.

CFA = common femoral artery; CIA = common iliac artery; EIA = external iliac artery.

rial puncture distal to the occluded segment. Furthermore, it may be difficult to navigate the guidewire intraluminally through the occlusion, which may result in extensive dissection of the vessel wall, which—particularly in the region of the aortic bifurcation—may cause significant problems.⁸ In our practice, an antegrade approach to the lesion (either crossover or transbrachial) is the preferred primary access for recanalization of total occlusions. In a series of 212 patients treated for chronic iliac artery occlusions primarily using the crossover technique, a successful recanalization could be achieved in 190 of 212 patients (89.6%), associated with a marked clinical improvement by two or three grades according to the American Heart Association (AHA) guidelines in 112 (52.8%) and 67 cases (31.6%), respectively.⁹ The major complication rate in this series was 1.4%. Primary patency rates (on an intention-to-treat basis including initial technical failures) of 81.2% at 2 years and 75.7% at 4 years demonstrate that the crossover recanalization technique with primary stent placement is a safe and effective treatment for patients with chronic iliac artery occlusions.

In the last few years, the transbrachial approach via a 90-cm-long sheath has been used more frequently as a primary access for iliac recanalization procedures. In a series of 53 patients, successful recanalization could be achieved in 52 cases (98.1%). The interventional complication rate was low, with no major events and only one false aneurysm at the puncture site, which could be managed with ultrasound-guided compression.

RECONSTRUCTION OF THE AORTOILIAC BIFURCATION

Although the clinical introduction of endovascular stents has contributed to an expansion of indications for minimally invasive endovascular procedures, there is only limited experience with PTA for the treatment of bilateral iliac obstructions involving the aortic bifurcations. The potential of contralateral embolism or contralateral iliac artery occlusion due to dislodgment of atherosclerotic or thrombotic material during unilateral PTA has prevented the common use of interventional techniques in this vessel segment. To avoid such compli-

Haulon et al ¹¹	106	106 (100%)	0	81.1 79.4	24 36
Mouanoutoua et al ¹²	50	50 (100%)	2 (4.0%)	92.0	20†

Data for patients, technical success, and complications are n (%).

*Embolism, dissection, rupture, death.

†Cumulative patency rates based on Kaplan-Meier estimates.

‡Mean follow-up, no data on cumulative patency rates.

cations, the kissing balloon technique was developed for bilateral simultaneous angioplasty and stent implantation into the common iliac arteries and the distal abdominal aorta.

In 1999, we published a series of 48 patients with obstructions of the aortoiliac segments that underwent kissing stent implantation.¹⁰ Stents were placed successfully and without complications in all patients. A clinical improvement by two to three grades according to the AHA criteria was observed in 41 and seven patients, respectively. The primary angiographic patency rate at 2 years was 86.8% (Table 2).

Meanwhile, these results have been confirmed by two other groups reporting results of bilateral simultaneous stent placement for reconstruction of the aortic bifurcation.^{11,12}

CONCLUSIONS

There is increasing evidence from monocentric clinical investigations that complex aortoiliac lesions, including chronic iliac artery occlusions and obstructions of the aortoiliac bifurcation, can be treated safely and effectively with appropriate interventional techniques. The short- and mid-term results of these procedures are well comparable to surgical data, however, long-term durability data are still pending.

Nevertheless, considering the very low systemic complication rate of interventional procedures, even in highly complex vascular obstructions, a primary endovascular approach appears to be justified in the majority of patients. In any case, a first-line interventional treatment should be considered in elderly

patients or in cases of severe comorbidity.

Although there is a persistent need to demonstrate these favorable results also in randomized prospective trials, based on the currently available data, the recommendations for treatment of aortoiliac occlusive disease need to be adjusted. ■

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