

angiography, which now is reserved for patients undergoing revascularization.

The medical management of PAD includes lifestyle and risk factor modification as well as antiplatelet therapy. Smoking cessation reduces the risks of limb loss, myocardial infarction, and death. Lipid-lowering therapy with a statin (hydroxymethylglutaryl-coenzyme A [HMG-CoA] reductase inhibitor) should be initiated and intensified if the serum low-density lipoprotein (LDL) cholesterol level is greater than 100 mg/dL. Antihypertensive medication should be initiated and intensified until the BP is lower than 140/90 mm Hg. β -Adrenergic receptor blockers do not reduce walking capacity or worsen intermittent claudication in patients with PAD. Aspirin reduces the risks of myocardial infarction, death, and stroke. However, clopidogrel is an effective alternative treatment and is more effective than aspirin in reducing cardiovascular events (level B of evidence). Each patient needs an exercise prescription because exercise training improves walking capacity and quality of life. Pentoxifylline is a methylxanthine derivative that may improve maximal walking distance, but the data are inconclusive. Better data are available with cilostazol, a phosphodiesterase-3 (PDE3) inhibitor (whereas sildenafil is a PDE5 inhibitor). In several studies of patients with symptomatic PAD, cilostazol consistently improved walking capacity and quality of life. It is one of the most effective agents for intermittent claudication. However, cilostazol must be avoided in patients with congestive heart failure because its use may increase mortality in those patients.

Revascularization (percutaneous or surgical) is indicated for patients with severe claudication that is resistant to medical therapy, limb-threatening ischemia, or ischemia-induced impotence. Percutaneous revascularization offers a comparable patency rate with less morbidity and mortality than surgery in patients with short, focal stenoses of large arteries such as the distal aorta or iliac arteries (Fig. 12-1). Surgical revascularization is more suitable for longer areas of stenosis or obstructive lesions

distal to the origin of the iliac arteries. The selection of surgery versus percutaneous intervention as the initial mode of revascularization in patients with limb-threatening ischemia also depends on the patients' life expectancy. In general, bypass surgery is preferable to balloon angioplasty in patients with an expected life expectancy of more than 2 years because of greater overall long-term survival and amputation-free survival times (level B evidence). In contrast, percutaneous intervention is preferable for those with limited life expectancy because of less short-term morbidity (level B evidence).

Acute limb ischemia is a vascular emergency. Sudden occlusion of a peripheral artery is caused by either arterial embolism or thrombosis in situ. Arterial emboli usually originate in the cardiac chambers in the setting of preexisting cardiac disease such as myocardial infarction (e.g., left ventricular mural thrombus), congestive heart failure, or atrial arrhythmias (e.g., left atrial thrombus in a patient with atrial fibrillation). Thrombosis in situ usually occurs in arteries with a preexisting severe stenosis in the setting of long-standing PAD with or without previous vascular surgery. Patients with arterial embolism usually experience sudden onset of symptoms without a history of claudication, whereas those with thrombosis in situ typically have a history of claudication that has previously been stable and then suddenly assumes a crescendo pattern over a period of days. In either case, the physical examination reveals a cold, cyanotic (bluish) extremity with absent pulses distal to the site of arterial occlusion and diminished motor and/or sensory function. A handheld Doppler device is used to assess signals at various arterial segments and confirms the diagnosis of acute vascular occlusion. Anticoagulation should be initiated immediately with intravenous heparin titrated to maintain the activated partial thromboplastin time equal to 2.0 to 2.5 times control. Patients with acute limb ischemia who have symptoms for more than 14 days or occlusion in suprainguinal sites usually require surgical thromboembolectomy or bypass surgery. In contrast, patients with more recent onset of symptoms or infrainguinal occlusion should undergo

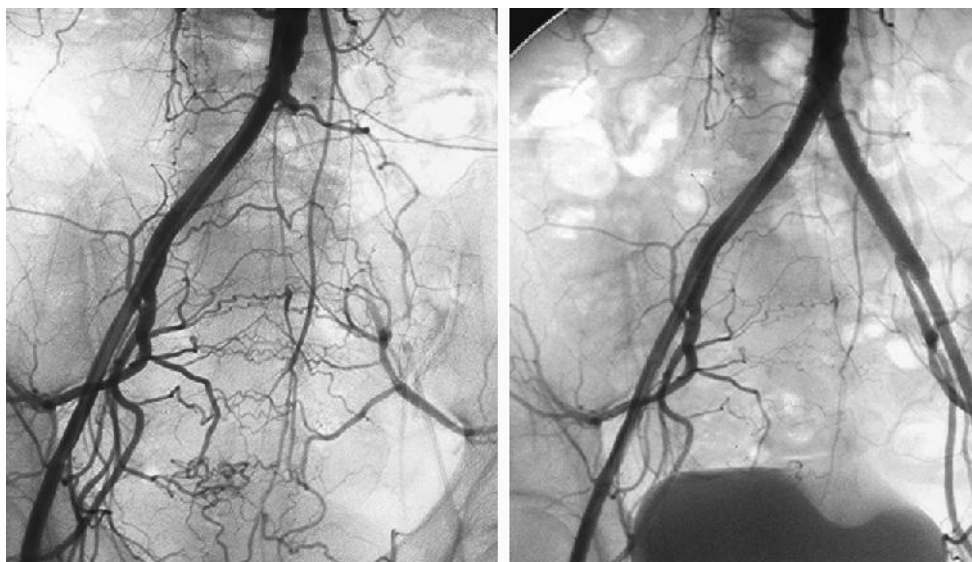


FIGURE 12-1 Angiogram of the distal abdominal aorta and iliac arteries demonstrates an occluded left common iliac artery with extensive collateral circulation from the contralateral internal iliac artery (*left*), which resolved after successful stent implantation (*right*). (Courtesy Bart Domatch, MD, Radiology Department, University of Texas Southwestern Medical Center, Dallas, Tex.)