11 Follow-Up Studies and Conclusions

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Most procedures for lower-limb ischemia involve the iliosuperficial femoral axis. However, in a small but significant number of patients who have often undergone one or more reconstructive procedures, an alternative approach is required. The deep femoral artery (DFA) can be an ideal relatively disease-free site for anastomosis in the management of these difficult patients. In proximal procedures the DFA can provide sufficient runoff to maintain patency providing it has a well-developed collateral network and a patent popliteal artery (PA) with at least one good crural artery. Under these conditions ischemic lesions will heal and claudication can be completely relieved. In distal bypasses a healthy DFA can offer an alternative source of inflow. This is particularly useful in two circumstances: when the groin is heavily scarred by previous operations or is infected, and when a more distal site is required for a venous femorodistal bypass and only a short amount of vein is available. Finally, as described in detail by van Dongen (Chap. 9), profundaplasty can be a precious limb-saving operation in carefully selected patients.

In this chapter, I will not try to summarize the indications and results of all the procedures involving the DFA. This has been done throughout the book. As in all fields of surgery, if the indications and above all the contraindications are respected, the results are quite good. Use of the DFA can provide limb salvage and relief of symptoms in a large majority of patients where indicated, even if these techniques apply only to a minority. In La Chaux-de-Fonds (Switzerland; head surgeon, Dr. M. Merlini) we have used these techniques in exactly 10% of procedures for lower-limb ischemia with excellent results. It is impossible to say how many limbs were salvaged, but we were impressed by the number of completely asymptomatic patients (seven out of 14, i.e., 50%) with a mean follow-up of 21 months (13 out of 19 patients presented with critical limb ischemia).
Follow-Up Studies

There is little or no literature on the follow-up of procedures using the DFA, but it seems logical to apply what is known about standard procedures for lower-limb ischemia. It is said that obstructions due to technical faults, infection, and hypercoagulability occur during the first 30 days and that thereafter occlusions are due to disease progression in the native artery above or below the graft or to graft stenosis (Bandyk 1990). Approximately 20%–30% of femorodistal procedures will occlude during the first postoperative year or two (Berkowitz et al. 1992; Brennan et al. 1991). Furthermore, roughly 60%–70% of all graft occlusions occur during the first 12–18 months and only around 20% after the first 2–3 years (Mills et al. 1993; Grigg et al. 1988; Sanchez et al. 1991).

Finally, most authors agree that revision of a failing graft gives better results than intervention on a failed graft, improving patency rates by as much as 20%–50% (Bandyk et al. 1991; Mattos et al. 1993; Killewich et al. 1990; Mills et al. 1990). This is the rationale for most graft surveillance programs. The most common sequence is a first visit at 4–6 weeks postoperatively, then at 3, 6, 9, and 12 months. If at that point nothing alarming has been seen, patients should be followed every 3–6 months for the second year, and it is probably useful to see patients every 6 months beyond the 2-year mark for those 20% still at risk (Bandyk 1990; Berkowitz et al. 1992; Mills et al. 1993; Idu et al. 1993; Green et al. 1990).

The first follow-up examination is the on-table completion angiogram as well as on-table hemodynamic assessment (Bandyk et al. 1991; Bandyk et al. 1989). This will allow technical faults to be seen and corrected at once and as well as a precise determination of the number and patency of outflow vessels. In distal bypasses the number of patent pedal arches (anterior and/or posterior) can be a good determinant of prognosis: when one is intact in high procedures or both in low ones, the patency rate was 81% at 6 months, but when this was not the case all grafts occluded (Karacagil et al. 1990). For above-the-knee procedures the number and quality of the crural arteries is determinant.

Some authors prefer to perform completion angioscopy. This technique is probably advantageous for optimal preparation of the in situ venous graft and as good as angiography for the detection of technical faults needing immediate correction, but it cannot evaluate the runoff (Miller et al. 1993; Baxter et al. 1990). On balance, angioscopy is probably as good or better for in situ venous