

**#1 POPLITEAL TO DISTAL BYPASS: EFFICACY AND LIMB SALVAGE FOR LEG ISCHEMIA**

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**Objectives:** 1) To determine the efficacy of popliteal-distal bypass and 2) to identify adverse prognostic factors for ultimate limb salvage.

**Methods:** 87 patients (54 male, 33 female; average age: 63 years) underwent 90 popliteal-distal bypasses. Duplex ultrasound was utilized to assess patency of all grafts. Data were analyzed by life-table analysis to determine patency rates at post-operative intervals. Student's t-test and Chi square testing were utilized for statistical comparisons of continuous and categorical data, respectively.

**Results:** Characteristics of the patient population included hypertension (74%), diabetes (61%), hyperlipidemia (60%), tobacco use (57%), coronary artery disease (28%), and ESRD (7%). 77% of patients had chronic ischemia, 62% of limbs were considered threatened. Indications for bypass included limb threatening ischemia in 59 (non-healing ulcer 37, rest pain 16, gangrene 6), disabling claudication (14), trauma (5), and inflow for free flap (2). 19 cases were performed after thrombolysis of an occluded femoral-popliteal bypass. The proximal anastomosis was above-knee 74% of the time. There were no perioperative deaths in the population studied. Cumulative patency rates were 77% at 6 months, 73% at 1 year, 70% at two years, 66% at five years, and 51% at 8 years (see figure). Limb salvage rates closely paralleled patency rates. Of 27 failed bypasses, 20 failed within the first 6 months (associated with 23 out of 32 limb losses, 72%). Patients with amputations (20) were younger (57 years vs. 64 years,  $p=0.039$ ), had popliteal-distal bypasses that failed earlier (84 days vs. 1288 days,  $p<0.0001$ ), were more likely to have had previous vascular procedures on same limb (10/20 vs. 15/72,  $p=0.03$ ), were  $>1$  pack-per-day tobacco smokers ( $p=0.001$ ), and more often presented with a thrombosed femoral-popliteal bypass ( $p=0.002$ ).

**Conclusions:** When successful, popliteal-distal bypass is associated with excellent long-term patency and limb salvage rates. Early failures are often associated with limb loss. Heavy tobacco use, younger age, early graft failures, repeat revascularization, and presentation with a thrombosed femoral-popliteal graft are associated with limb loss.

interval	6m	1y	2y	3y	4y	5y	6y	7y
no at risk	90	65	48	44	31	21	15	7

