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## Indications For A “Surgery First” Approach For The Treatment Of Lower Extremity Arterial Disease

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**Objectives:** In recent years, there has been a tendency towards an “endovascular first” approach for the treatment for femoropopliteal arterial disease. The goal of this study is to determine which patients’ long term patency of femoropopliteal bypass(FPB) is so significant that they are better served with initial primary surgical intervention.

**Methods:** A retrospective analysis of all patients undergoing FPB between June 2006-December 2014 was performed. Our primary endpoint was primary unassisted graft patency defined as patent on ultrasound, angiography or palpable pulse in the bypass on physical exam. Patients with <1 year follow-up were excluded.

**Results:** We identified 241 patients undergoing FPB on 272 limbs. Mean follow-up was 7.1 years. FPB indication was disabling claudication in 95 limbs, critical limb ischemia(CLI)/wounds in 148 limbs, and popliteal aneurysm in 29 limbs. Of these, 134 were saphenous vein grafts(SVG), 126 were prosthetic grafts, 8 were arm vein grafts, and 4 were cadaveric/xenografts. There were 97 bypasses that were patent for five or more years. Statistically significant factors for 5 year patency were SVG( $p=0.01$ ), male sex( $p=0.023$ ), age<70( $p=0.003$ ), Caucasian race( $p=0.014$ ), being non-diabetic( $p=0.014$ ), no history of COPD( $p=0.001$ ) or history of CVA( $p=0.005$ ). Grafts patent at 5 years were more likely to have been performed for claudication (63.4% 5 year patency) or popliteal aneurysm(73.1%) as compared to CLI/wounds(38.2%;  $p<0.0001$ ). Of note, FPB configuration(above or below knee, in-situ vs reversed saphenous vein) was not significant for 5 year patency. SVG( $p=0.004$ ), male sex( $p=0.034$ ), surgical indication of claudication/popliteal aneurysm( $p<0.0001$ ), Caucasian race( $p<0.0001$ ) and no history of COPD( $p=0.026$ ) were statistically significant(using log rank test) for patency over time (Figures 1 and 2). There were 23 FPB in Caucasian, non-COPD, nondiabetic, male patients without history of CVA receiving SVG for claudication/popliteal aneurysm that had a 91% 5 year patency.

**Conclusions:** Young, non-diabetic, Caucasian male patients without diabetes or COPD, with acceptable saphenous vein undergoing femoropopliteal bypass grafting for claudication or popliteal aneurysm are likely to have a patent FPB at 5 years and may be best served by an initial surgical procedure.

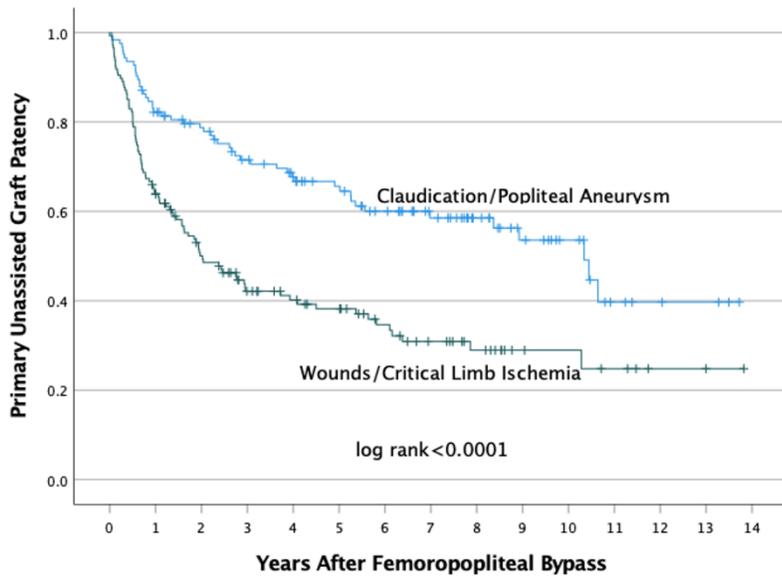


Figure 1: Kaplan Meier curve for primary unassisted patency comparing patients with claudication/popliteal aneurysm to those with wounds/critical limb ischemia

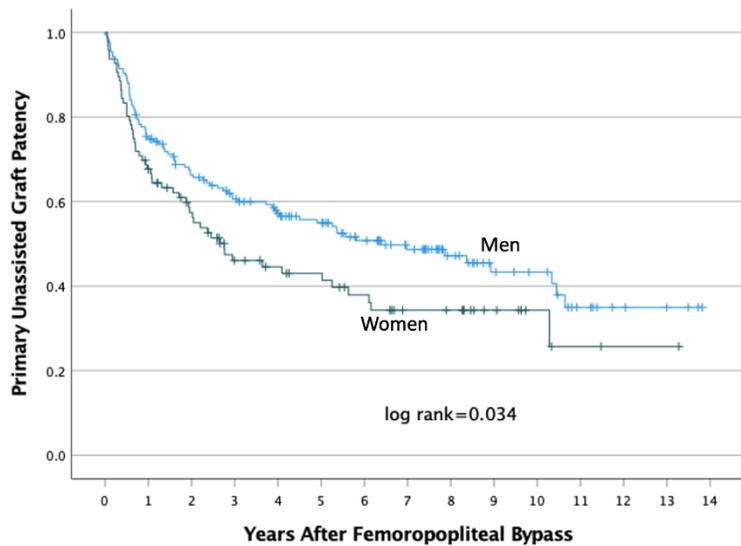


Figure 2: Kaplan Meier curve for primary unassisted patency comparing men and women

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