Abstract Body:

Objectives Revascularization after lower extremity bypass failure poses many challenges. Despite nearly seven decades of experience with lower extremity revascularization, little data exist on the success of redo bypass particularly when autogenous conduit is utilized. The purpose of this study is to review outcomes of redo infrainguinal bypass constructed solely of autogenous vein.

Methods All patients who underwent redo infrainguinal bypass at a single institution by a single surgeon were retrospectively reviewed. Bypasses were categorized into three groups: femoral-popliteal, femoral-distal, and popliteal-distal bypasses. Since the repeat bypasses were all done for limb salvage, freedom from above or below knee amputation (FFA) was the primary outcome of interest, defined as the number of days from redo bypass to subsequent amputation or the most recent follow up.

Results From 2006 to 2016, 100 limbs underwent redo bypass. 57 (57.0%) underwent 1 previous bypass while 43 (43.0%) underwent more than 1 previous bypass. The redo configurations
consisted of 23 (23.0%) femoral-popliteal, 70 (70.0%) femoral-distal, and 7 (7.0%) popliteal-distal bypasses. 97 (97.0%) underwent redo using autologous vein grafts including 41 (95.5%) of those who had two or more previous bypasses. The three patients who ultimately underwent prosthetic bypass had bilateral great and small saphenous veins and bilateral basilic and cephalic veins previously harvested. Nine limbs were subsequently amputated: 2 above knee and 7 below knee amputations. Of these, all had two or more previous bypasses and two of the three patients who ultimately received prosthetic bypasses were in this group. In patients with one previous bypass, FFA was 775 days (IQR:213-1626). In patients with two or more previous bypasses, FFA was 263 days (IQR:98-1258). No patients with femoral-popliteal bypasses suffered amputation while 7 (10.0%) of the femoral-distal and 28.6% (n=2) of the popliteal-distal bypasses suffered subsequent amputations (p=0.073) (Figure 1).

Conclusions Redo infrainguinal bypass is effective in salvaging threatened lower extremities. Furthermore, revascularization with autologous vein can almost always be achieved. A significant FFA rate is achieved with redo bypass, although patients with more distal disease are more difficult to salvage.

Figure 1. Freedom from Amputation by Bypass Type

Author Disclosure Block:

C.D. Fraser: None. R.H. Lui: None. X. Zhou: None. R.J. Beaulieu: None. T. Reifsnnyder: None.