

The Distal Peroneal Artery. Is it an effective Outflow Source?

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Purpose: Although the peroneal artery is the tibial vessel most spared of atherosclerosis, the amount of perfusion it provides the ischemic foot after bypass has been questioned. Also, the distal peroneal artery and its branches can be arduous to access, especially medially makes it less appealing as a outflow source. In this series, we analyze our experience with bypass to the peroneal artery, especially its distal most extent.

Methods: From 1980 to 2004, a retrospective review was performed on all patients who had the peroneal artery used as outflow. Demographics, indications, location of distal anastomosis and conduit, as well as mortality and morbidity were examined. Also, need for revision and/or distal jump bypass secondary to hemodynamic ineffectiveness was recorded.

Results: During the study period, 1,738 peroneal artery reconstructions were performed. Of these, 418 were performed to the distal peroneal or its branches. The distal peroneal was defined as an anastomosis within 5cm of its bifurcation. All but 5 bypasses were performed through the medial approach. 1,062 (61%) patients were male and 918 (53%) were diabetic. Mean age was 70 (range: 26 – 100 years). Indication for surgery was critical limb ischemia in 1586 patients (91%). Conduit was autogenous in 1643 (94%) cases. Thirty-day mortality was 61 (3.5%). Hemodynamic failure was seen in 42 (2.4%) patients, 27 (2%) in proximal peroneal bypass and 15 (3.6%) in distal peroneal. Also, 110 (6.3%) bypasses had early and 211 (12.1%) had late occlusion. Hemodynamic inadequacy requiring jump revision occurred in 42 (2.4%), 33 (2/5%) in proximal peroneal and 9 (2.2%) in distal. The long term primary patency for all peroneal bypasses was 69%, 62% and 52% at 3, 5, and 10 years. Secondary patency for all peroneal bypasses was 73%, 65% and 60% at 3, 5, and 10 years and there was no significant difference between proximal and distal peroneal artery reconstruction. Limb salvage for the proximal and distal peroneal were 93% and 85% at 5 years.

Conclusion: Bypass to the distal peroneal artery is durable although about 4% of patients may need a jump to a more distal vessel for adequate reperfusion. The distal peroneal artery appears to be a durable outflow and may be useful in patients with limited conduit.