

Successful Techniques for Branches of the Infrapopliteal Arterial Bypasses for CLTI

Enrico Ascher, MD
Executive Co-Chairman
VEITHsymposium

Frank J. Veith, MD
Chairman
VEITHsymposium

- No conflict of interest

Pioneers in Infringuinal Arterial Bypass Surgery

Jean Kunlin, MD.
1945



Successful Grafts To the Anterior Tibial, Posterior Tibial, and Peroneal Arteries
First Published March 1, 1961 Angiology

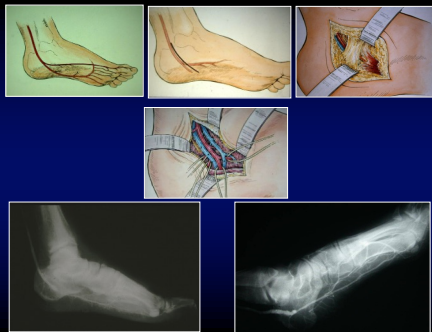


J.J. McCaughan, Jr, MD

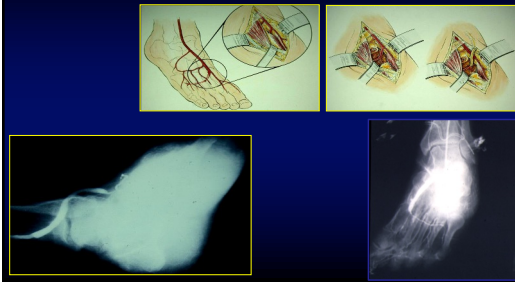
First reported vein bypasses to the lateral & medial plantar, metatarsal arch and lateral tarsal arteries

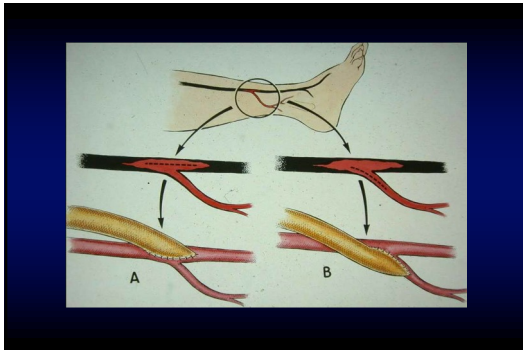
Bypasses to plantar arteries and other tibial branches: An extended approach to limb salvage

Ascher, Gupta, Veith
J Vasc Surg 1988



Bypasses to Lateral Tarsal & Plantar Arch





Bypasses to Branches of Tibial Arteries

Leg Branches vs. Foot Branches

Unnamed Branches in the leg - 6 cases

Grafts closed (< 4 months)

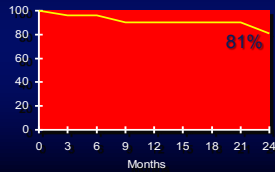
- BK amputations
- Remain ischemic

6
4
2

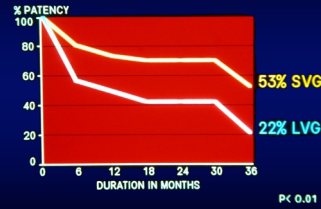
Factors Influencing Graft Patency in Limited Runoff

Foot Branches

- skills, surgeon's experience
- short vein bypass
- autologous vein



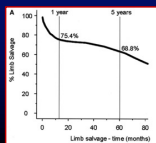
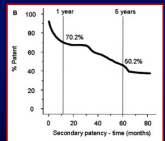
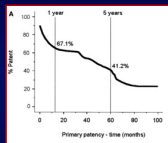
Life Table Patency: Long vs Short Veins in Disadvantaged Runoff



16 years later... Bypass to plantar and tarsal arteries: an acceptable approach to limb salvage

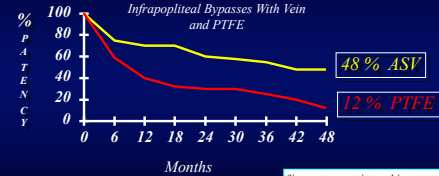
Kakra Hughes T, Christoph M Domenig, Allen D Hamdan, Marc Schermerhorn, Bernadette Aulivoa, Seth Blumenthal, David B Campbell, Sherry D Scovell, Frank W Lofgren, Frank B Pomposelli Jr

J Vasc Surg, 2004
90 patients; 89% veins



First Randomized Prospective Multicenter Study in Vascular Surgery

6-Year Study Comparing Infrapopliteal Bypasses With Vein and PTFE




J Vasc Surg 1986


Six-year prospective multicenter randomized comparison of autologous saphenous vein and expanded polytetrafluoroethylene grafts in infrainguinal arterial reconstructions
Bassett J, Walsh, M.D., Smith R, Cooper, M.D., Bassett, M.D.

What to do when autogenous veins are absent...

Major amputations ?



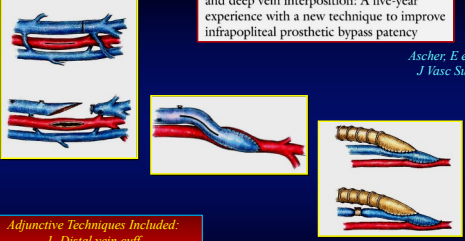
Saphenous Turn-Down A-V Fistula With Arterialization of the Distal Venous System



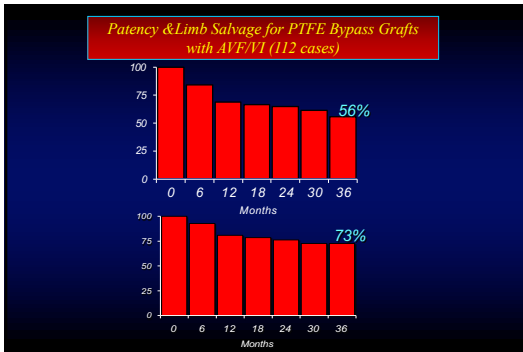
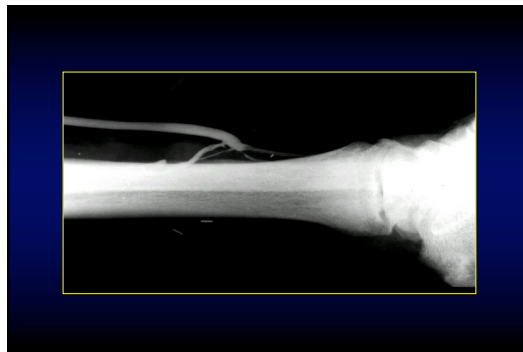
Arterialization of the Distal Venous System Alone or Combined With Bypasses to Limited Outflow Tracts: A Last Resort For "The Unsalvageable Leg"
Perspect Vasc Surg Endovasc Ther 1993 Ascher E, et al

Complementary distal arteriovenous fistula and deep vein interposition: A five-year experience with a new technique to improve infrapopliteal prosthetic bypass patency

Ascher, E et al J Vasc Surg



Adjunctive Techniques Included:
 1. Distal vein cuff
 2. Distal A-V Fistula



Giornale Italiano di CHIRURGIA VASCOLARE VOL. 8 - N. 4 - DICEMBRE 2001

Distal revascularisation of lower limbs using prosthetic bypass and venous interposition fistula following the Ascer procedure

F. SPINELLI, M. D'ALFONSO, T. MANDOLFINO, I. ACRI, M. LA SPADA, F. MIRENDA

From the Institute of Thoracic and Cardiovascular Surgery, University of Torino, Turin, Italy.

Background: The study aimed to evaluate long-term patency and limb salvage rates in distal prosthetic revascularisation of lower limbs using complementary arteriovenous fistula and deep vein interposition (AVF/AVI).

Methods: From 1992 to 2000, AVF/AVI was performed as an adjunctive technique for prosthetic bypass on infrapopliteal arteries in 22 patients with 1 or more failed ipsilateral infrapopliteal bypasses, in whom a totally autogenous vein bypass was not feasible. Critical ischaemia was the sole indication for surgery with rest pain, non-healing ischaemic ulcers and foot gangrene.

Results: Perioperative mortality (within 30 days of surgery) was zero. The bypass failed at postoperative day 36. Bypasses were prolonged distally, 3 amputations were performed. During the follow-up (176 months), 15 bypasses occluded. Cumulative patency was 62% at 1 year, 47% at 2 years, 21% at 3 years and 21% at 8 years. Limb salvage was 66% at 1 year, 57% at 2 years, 58% at 3 years and 53% at 8 years.

Conclusion: Adjunctive AVF/AVI proved useful in maintaining patency of infrapopliteal prosthetic bypasses not achieving limb salvage.

When this is inadequate, it may lead to occlusion owing to the slow flow rate through the graft. A variety of techniques have been used in an attempt to improve the patency of synthetic bypasses: the chronic administration of anticoagulating drugs, the use of Limon and Taylor's patch, the preparation of venous cuffs on the distal anastomosis and the creation of an arteriovenous fistula (AVF) as an additional element in the distal anastomosis, all with the aim of

Thank you