A 10-Year Single Institution Overview of PTFE Bypasses for PAD

Jemin Park, MD; Jeremy D. Darling, MD; Lucas Mota, MD; Anita P. Bargaje, BS; John N. Tomeo, BS; Camila R. Guetter, MD, MPH; Isa F. van Galen, MD; Elisa Caron, MD; Lars Stangenberg, MD, PhD; Allen D. Hamdan, MD; Mark C. Wyers, MD; Marc L. Schermerhorn, MD; Patric Liang, MD

Beth Israel Deaconess Medical Center, Harvard Medical School

OBJECTIVES

Studies have demonstrated the superiority of great saphenous vein conduits over prosthetic grafts for lower extremity bypass. However, prosthetic graft bypasses continue to be performed at high rates in medically complex patients with increasing use for tibial bypasses.

As such, we performed a single-institution retrospective review of all consecutive prosthetic graft bypasses performed to understand bypass utilization and outcomes.

METHODS

Years: 2014 - 2023
Patient characteristics: Comorbidities (e.g. CAD, T2DM), pre-op medications, and post-op medications
Bypass characteristics: Target vessel, bypass type, graft diameter, indication, prior interventions, number of tibial vessel run-off, location of graft failure
Outcomes: Primary patency, secondary patency, and re-intervention at 1-year
Analyses: Kaplan-Meier estimates and Log-rank tests

Corresponding author: Patric Liang, MD

Bypass Characteristics

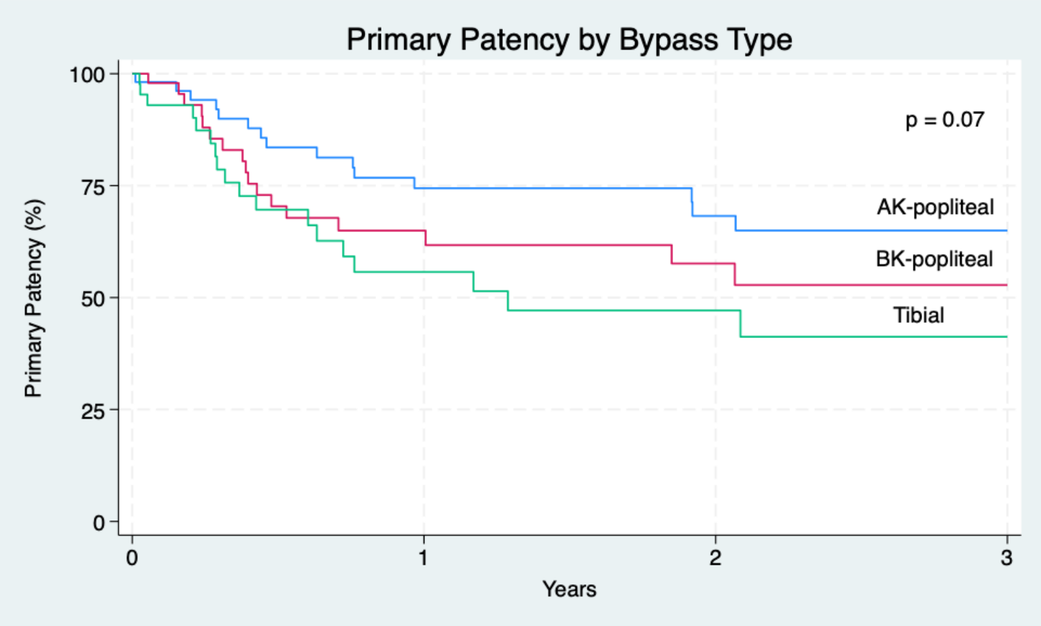
Indication	N (%)
Claudication	30 (20%)
Rest Pain	31 (21%)
Non-Healing Wound/Gangrene	87 (59%)

Intervention Type	N (%)
First Procedure	97 (66%)
Prior Open Bypass	18 (12%)
Prior Endovascular Procedure	29 (20%)
Prior Open and Endo Procedure	4 (3%)

Target Vessel	N (%)
Above-Knee Popliteal	54 (36%)
Below-Knee Popliteal	50 (34%)
Tibial	44 (30%)
Total	148

PTFE Graft Type	N (%)
Ring	113 (77%)
Distaflo	33 (23%)

Primary Patency by Bypass Type



RESULTS

1-Year Primary Patency:
- Above-Knee Popliteal: 75%
- Below-Knee Popliteal: 65%
- Tibial: 56%

3-Year Primary Patency:
- Above-Knee Popliteal: 66%
- Below-Knee Popliteal: 51%
- Tibial: 40%

1-Year Re-Intervention Rate: 38%
- Above-Knee Popliteal: 31%
- Below-Knee Popliteal: 40%
- Tibial: 46%

Location of Failure: Distal anastomosis implicated in 78% of identified failures

CONCLUSIONS

Patients undergoing prosthetic graft bypasses had poor primary patency rates, with a significant proportion failing within 3 years for below-knee and tibial targets. In occluded bypasses where the location of failure could be identified, failure predominantly occurred at the distal anastomosis