Axillo-Uni and Bifemoral Bypasses Have Similar Patency: Why The Bilateral Procedure Should Only Be Used When Bilateral Ischemia Exists

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Disclosures

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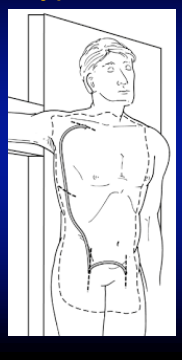
Axillary-Femoral Bypass

- First reported in 1963
- Extra-anatomical bypass
- Avoid hostile abdomen
- High risk patients



Uni- vs Bi-Femoral Bypass

- Possible benefits
  - Theoretical advantage of increased outflow
  - Help maintain patency
- Risk
  - Surgical site infection
  - Graft infection
  - Bleeding complications
  - Local injury

Available Data

- Mostly single center
- Retrospective
- Selection bias
- Unable to account for level of disease on contralateral size


Comparative Study > Surgery. 1977 Jan;81(1):33-8; discussion 38-40.

A comparison of the late patency rates of axillobilateral femoral and axillounilateral femoral grafts

F W LoGerfo [1], W C Johnson, J D Corson, R W Vollman, R D Weisel, R C Davis, E T O'Hara, D C Nabseth, J A Mannick

- 130 axillofemoral grafts
  - 64 unilateral
  - 66 bilateral
- The 5 year patency rate
  - 74% for axillobilateral
  - 37% for axillounilateral femoral grafts, P < 0.01
  - Average flow was 621 ml/ min for bilateral and 273 ml for unilateral
  - “axillobilateral femoral grafts should be performed in preference to axillounilateral femoral grafts”

Surgery. 1985 Feb;97(2):169-75.

Comparison of axillounifemoral and axillobifemoral bypass operations

E Ascer, F J Veith, S K Gupta, L A Scher, R H Samson, S A White-Flores, S Spravregen

- 34 AUF and 22 ABF bypasses
- 5-year primary patency
  - AUF – 44%
  - ABF – 50%
- 5-year primary patency
  - AUF – 71%
  - ABF – 77%
- No significant differences
- "AUF bypass is the procedure of choice for unilateral limb ischemia in high-risk patients who require an axillary source"

J Vasc Surg. 2018 Nov;68(5):1430-1437. doi: 10.1016/j.jvs.2018.01.061. Epub 2018 Aug 9.

Improved patency after axillofemoral bypass for aortoiliac occlusive disease

Russell H Samson [1], David P Showalter [2], Michael R Lepore Jr [2], Deepak G Nair [2], Douglas A Dorsay [2], Ricardo E Morales [2]

- 161 grafts
  - 85 ABF
  - 76 AUF
- 5 year patency
  - 81.8% ABF
  - 85.5% AUF
- No significant difference
- "AxUFB and AxBFB have similar patency rates, AxBFB should be reserved for bilateral indications"

Multicenter Study. J Vasc Surg. 2020 Mar;71(3):862-868. doi: 10.1016/j.jvs.2019.05.038. Epub 2019 Aug 3.

Axillary-bifemoral and axillary-unifemoral artery grafts have similar perioperative outcomes and patency

Scott Hardouin [1], Thomas W Cheng [1], Alik Farber [1], Jeffrey A Kalish [1], Douglas W Jones [1], Mahmoud B Malas [2], Denis Rybin [3], Brad S Orlet [1], Lenee M Plauche [1], Jeffrey J Siracuse [4]

- VQI database
- All AUF and ABF
- Excluded acute ischemia
- 2010-2017

- 412 (32.9%) AUF
- 839 (67.1%) ABF
- Compared with ABF, AUF grafts were more often:
  - Urgent cases
  - Younger
  - Male, sex
  - Non-ambulatory
  - Diabetic
  - CLTI

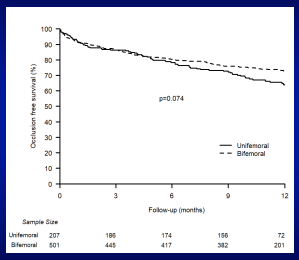
Perioperative Outcomes

- No significant differences AUF vs. ABF
  - Wound complications (4.2% vs. 2.9%, P=.23)
  - Cardiac complications (7.3% vs. 10.4%, P=.08)
  - Pulmonary complications (4.1% vs. 6%, P=.18)
  - Perioperative mortality (2.9% vs. 3.2%, P=.77)
  - Length of stay

Intraoperative Outcomes

- AUF had lower
  - EBL (268.1 ml vs. 348.6 ml, P<.001)
  - Mean operative time (201 minutes vs. 224.1 minutes, P<.001)

Freedom from Occlusion



- 1 year
- AUF - 62.6%
- ABF - 71.8%
- P=.074

Multivariable analysis for Patency Loss

Variable	HR	95% CI	P-Value
AUF vs ABF	1.06	.77-1.46	.722
Tissue loss vs Claudication	*2.22*	*1.51-3.28*	*<.001*
Non-ambulatory status	*1.67*	*1.25-2.23*	*.001*
Age (per year)	*1.02*	*1-1.03*	*.044*
Rest pain vs Claudication	1.36	.91-2.01	.13
Diabetes	.8	.6-1.06	.119
Prior bypass	.72	.52-1	.05

Conclusions

- Majority of data do not support bilateral bypasses
- Graft patency should not be a consideration for performing an ABF over an AUF