

**Percutaneous Extravascular FemPop PTFE Bypasses**  
 Without Traversing The Vein: Technique And 6- Year Experience In Patients: Is It More Cost Effective: What Are The Limitations



**VEITH** IMPOSIBLE  
 Conquering The Impossible

**51st**

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No Disclosures


**Percutaneous Arterial Bypass: a Game Changer?**

**What is a Percutaneous Bypass?**

It is an arterial, extravascular bypass, performed

without surgical cutdown, without interruption of the flow, and without vascular suture.

**Fem-pop percut bypass**



**Docteur Pierre SARRADON**  
**PERCUT BYPASS (FEM-POP)**



**WHY should we move to percutaneous techniques?**

National Institutes of Health (NIH) (gov)  
<https://pubmed.ncbi.nlm.nih.gov/>

**Morbidity of femoropopliteal bypass surgery**

Morbidity of femoropopliteal bypass surgery  
 Morales A, van de Braken J, Barmout A, Kraus S, Sassi Schamp S, Clark J, Zembarski S  
 MedRxiv:2023.07.27.23281111

Abstract

A systemic review of published reports on the incidence of early (<30 days) adverse

**6,374 femoropopliteal bypasses** out of an arteries were reviewed concerning 6,374 femoropopliteal bypasses in 6,374 patients. 100-year percent were male and the mean age was 64.0 years (range, 40 to 93 years).

**The overall 30-day morbidity rate was 36.8%.**

Wartt amputation was observed in 4.4% (range, 0.0 to 5.3%) of cases. Postoperative bleeding was seen in 7.6% (range, 0.0 to 20%), of which 2.2% required return to surgery. Occlusions were reported in 12.0% (range, 0.0 to 59%). Lymphedema occurred in 2.8% (range, 0.0 to 9.0%) of cases and surgical site wound formation occurred in 2.0% (range, 1.0% to 3.0%). Overall 30-day mortality rate was 2.0% (range, 0.0 to 4.3%). Pooled data comparing vein grafts and prosthetic grafts revealed no significant difference (P = .10; risk ratio = 0.82).

**Open Fem-pop Bypass:**  
Is the complication rate acceptable?

**For obvious reasons, Percutaneous Bypass will be preferred to Open Bypass, whenever possible!**

**Absence of stitch suture**

The stent-graft is fitted few centimetres in the artery, anchoring the bypass

**The absence of suture= Protection from**

- immediate risk: **bleeding**
- late risk: **false aneurysm**

The stent-graft is fitted few centimetres in the artery, anchoring the bypass

**PERCUT FEM-POP BYPASS: 30d RESULTS**

Journal of Vascular Surgery Cases, Innovations and Techniques  
Volume 5, Issue 4, November 2023, 10327

Technique and early results of percutaneous femoropopliteal bypass with stent graft

Presented at the 10th World Annual Meeting of the International Society for Peripheral Vascular Medicine, New York, November 13-15, 2023.  
Pierluigi Serradell MD, Boris Abu-Ghazien MD, PhD, Ivan Flores-Becerra MD, PhD

- 30 bypasses
- Mean age: 73
- 46% severe claudication (Rutherford 3)
- 54% Critical Limb Ischemia (Rutherford class 4-6)

- no death
- 1 early occlusion successfully treated by thrombolysis
- no local complication needing reintervention
- nor wound healing deficiency

**FEM-POP PERCUT BYPASS : MID-TERM RESULTS**

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**36 months**

- Kaplan-Meier survival curve = 81%
- The primary patency =75%
- secondary patency =75%
- freedom from amputation rates =91%

Kaplan-Meier Survival Curve    Primary and Secondary Kaplan-Meier Patency Curves    Freedom from amputation Kaplan-Meier Curve


**FEM-POP PERCUT BYPASS 2 : MID-TERM RESULTS**

*Assesment still in process*

- 2018-2024 = 6 Years
- Percut FPB = 80
- Still patent = 80%
- (Occlusion = 16)
- Death = 2
- Amputation=2
- Freedom of major amputation = 95%


### Cost effective? Vs Open Surgery

Open



\$

Percut



\$\$

\$\$\$ +

- > Hospital duration
- > Complications
- > Rehabilitation

- \$

### Percut Bypass vs Endovascular Techniques

#### Cost-effectiveness

**Endovascular for long occlusions:**



- ✓ 20% of failure of recanalization
- ✓ May be laborious – Time consuming
- ✓ Multiplicity of the devices needed

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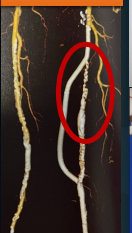
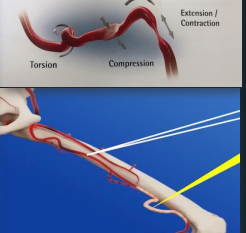
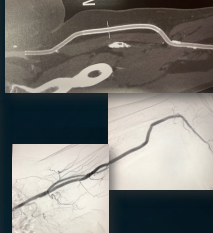
**Percut Bypass:**

- ✓ One technique suits all
- ✓ No haphazard process


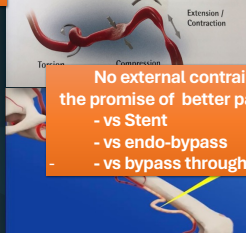
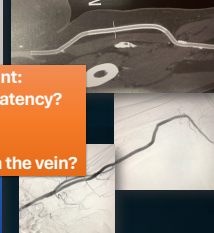
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### About endoluminal constraints

Vessel wall constriction	Vessel mobility and stress	Bypass: free in the soft tissues
		

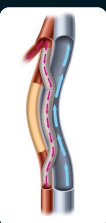
### About endoluminal constraints

Vessel wall constriction	Vessel mobility and stress	Bypass: free in the soft tissues
		


**No external constraint:**  
the promise of better patency?

- vs Stent
- vs endo-bypass
- vs bypass through the vein?

### Percut Bypass vs PQ Bypass / Torus

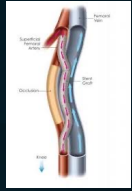


### Percut Bypass vs PQ Bypass / Torus



**1 - Occupation of the vein**

- : Need of vein diameter > 10mm
- : < 10mm but exist
- : Thrombosis/occlusion
- : Low but reported
- : Plicatures?
- + : Avoid tissue trauma (mild)



### Percut Bypass vs PQ Bypass / Torus

2 - Complexity of the procedure?

3 - Complexity of the device?

4 - Complex and specific: Cost?

### Fem-pop Percut Bypass: Problems and limitations

- ✓ Prosthetic material ————— *Vein?*
- ✓ End-to-end anastomosis ————— *Prototypes end to side*
- ✓ Learning curve ————— *Proctorship*
- ✓ Out of IFU ————— *IFU*
- ✓ About Localizations? ————— ...

### Other localizations?

Aorto-fem Bypass: MISCAB Technique

AVF = Percut-AV-Bypass

### CONCLUSION

**PERCUT BYPASSES**

- Technically **Accessible**
- Standardized: **Reproducible**
- **No dedicated device** (Viabahn: hors IFU)

**Numerous Benefits**

- **Mini-invasive**: light anesthesia, quick outcome, little pain and impotence
- Avoid **surgical approach**: complications – post-op impotence
- Avoid **vascular suture**: bleeding, defects, false-aneurisms

### VEITH Symposium 2024

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**THANK YOU**

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### Percutaneous Extravascular FemPop PTFE Bypasses

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**AND YOU'RE INVITED!**

**Tuesday, November 19 - Saturday, November 23, 2024**

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