

Should We Be Performing More Lower Extremity Access Procedures?

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- No conflict of interest

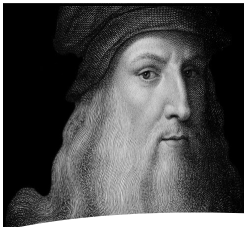
Should We?!

DEPENDS
who you ASK

A key variable in vascular access practice



- informs decisions made
- effects procedural outcomes
- effects organisational MDT experience affecting practice
 - **influences type of VA procedures within a vascular access programme**





Experience is a truer guide than the words of others.

— Leonardo da Vinci

“As vascular access becomes more complex, surgical decision-making will increasingly rely on experience....”

Lower Limb Vascular Access – not new!

1200 14 May 1966

Routine Use of the Scribner Shunt for Haemodialysis


P. B. CLARK,* M.D., M.CHIR., F.R.C.S.; F. M. PARSONS,† M.D., B.Sc., M.R.C.P.E.D.

Benefits of Lower Limb Access

- Upper limb options exhausted
- Improved patency over upper limb last-ditch access
- Patient satisfaction

Thigh grafts contribute significantly to patients' time on dialysis


Comparison of Lower and Upper Extremity Arteriovenous Graft: A Retrospective Clinical Analysis with 5-Year Follow-Up
Nallas Arana, Lisa Arana, Jay Han, Shashi Kulkarni, Marwan J. Issa, Ghazi Ibrahim, David C. Thompson, G. B. Shrivastava, G. B.



Sunanda J Ram, Bharat A Sachdeva, Gloria C Caldiro, Gazi B Zibari, Kenneth D Abreo

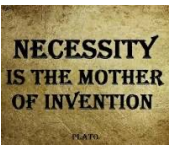
Benefits - Patient Factors

- Free hands for needling
- Long length for needling
- Aesthetic
- Home HD / self needling (and less pain)
- Lifestyle considerations

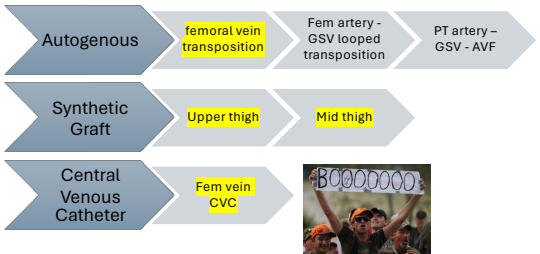


What Informs a Lower Limb Practice?

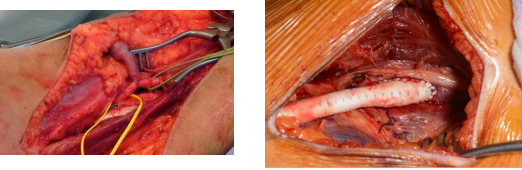
- Necessity (paeds/CVP)
- Surgical expertise
- Training opportunity
- Unit 'set-up'
- ?evidence



Lower Limb Options




Fistula or Graft?



Fistula or Graft?

- How to choose?
 - Patient factors
 - Paediatric
 - Central venous pathology
 - Literature – complex
 - Reviews - unhelpful
 - Confirmation bias
 - **Experience**
 - Still learning curve....



What does the literature say?

Most data from single institutions



Summary* of studies evaluating lower limb grafts...

*Parikh et al *Transl Am Soc Nephrol* 2016 Sep 7; 1(9): 1693-1702

Year	Author	Patients	Survival (%)	Technical success (%)	Primary patency (%)	Secondary patency (%)	Freedom from reintervention (%)	Freedom from major reintervention (%)	Freedom from minor reintervention (%)	Freedom from any reintervention (%)
2005	Parikh et al	100	85	95	80	75	70	65	60	55
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2023	Parikh et al	100	85	95	80	75	70	65	60	55
2024	Parikh et al	100	85	95	80	75	70	65	60	55

Hard to Interpret.

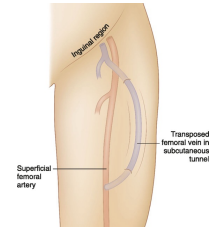
Evidence.....

- limited
- single centre experience
- observational studies
- inclusion criteria differ
- centre-specific selection bias
-makes it difficult to compare evidence....



Femoral vein transposition

- Few centres with good numbers
- Relies on experience
- Can be successful
- Limitations



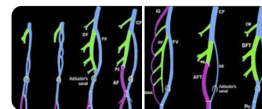
Long-term results of femoral vein transposition for autogenous arteriovenous hemodialysis access
 Pierre Bourgoignie, MD, PhD • Mark Rana, MD • Olivier Van Laere, MD • Gilbert Franco, MD

Limitations of femoral vein transposition...

- Steal
 - Size of artery to vein (critical nature of SFA)
- Body habitus
 - Limits 'needlable' length, in obesity
- Wound complications
 - Long deep wound
 - lymphatic disruption
 - swelling



Limitations of transposed fem vein....



Variable anatomy

No separate DFV to SFV
 ?May lead to wound healing issues

Anatomical variations of the femoral vein

Jean-François Uhl, MD,^{1,2*} Claude Gillot, MD,³ and Maxime Chahim, MD,¹ *Neuflynn-Scine, Paris, and Hopital Necker, France*

Leg Grafts - configurations

The adductor loop

- Avoids groin (particularly in obese patients)
- Avoids lymphatic disruption
- Easier to access
- Maintains modesty on HD
- No joint involvement
- Preserves groin vessels

CFA – SFV J shape graft

- Longer needling length
- Insensate lateral thigh
- Using CFA v SFA – less ischaemic complications

Multicenter Study | J Vasc Surg. 2019 Dec;70(6):1913-1918. doi: 10.1016/j.jvs.2019.03.037. Epub 2019 May 27.

Patients with lower extremity dialysis access have poor primary patency and survival

Steven L Pike¹, Alk Farber¹, Nikitka Afrhze¹, Scott Levin¹, Thomas W Cheng¹, Douglas W Jones¹, Tze-Wool Tan², Mahmoud Malas³, Denis Rybin⁴, Jeffrey J Siracuse⁵

Lower extremity vascular access creation is a marker for advanced end-stage renal disease. Siracuse JJ, Farber A. J Vasc Surg. 2020 Jun;71(6):2185. doi: 10.1016/j.jvs.2020.01.060.

Challenging lower extremity dialysis access: long-term use of a leg AV-fistula. Jemcov TK, Bombasirevic MZ, Simic-Ogrizovic SP. J Vasc Access. 2012 Jan-Mar;13(1):132. doi: 10.5301/JVA.2011.8445.

Lower extremity dialysis access procedures are practical compromises in desperate circumstances. Rohrer MJ. J Vasc Surg. 2019 Dec;70(6):1919. doi: 10.1016/j.jvs.2019.06.008.

Time to challenge our vascular access practice?

- Why is the arm always first choice?
 - E.g. why Hero and not leg
- Why consider leg 'last ditch attempt'
- What does the patient want?
- **Swap exhausted arm for a fresh leg?**

We should think about the leg sooner!

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In summary;
Lower Limb Vascular Access

- **Experience** guides practice
- Both tFV and grafts can have great outcomes
- No perfect choice - tailored approach
- Maybe we need to start thinking about the lower limb sooner?