

# EndoAVF : current status

Woon Heo MD, PhD

LifeLine Clinic

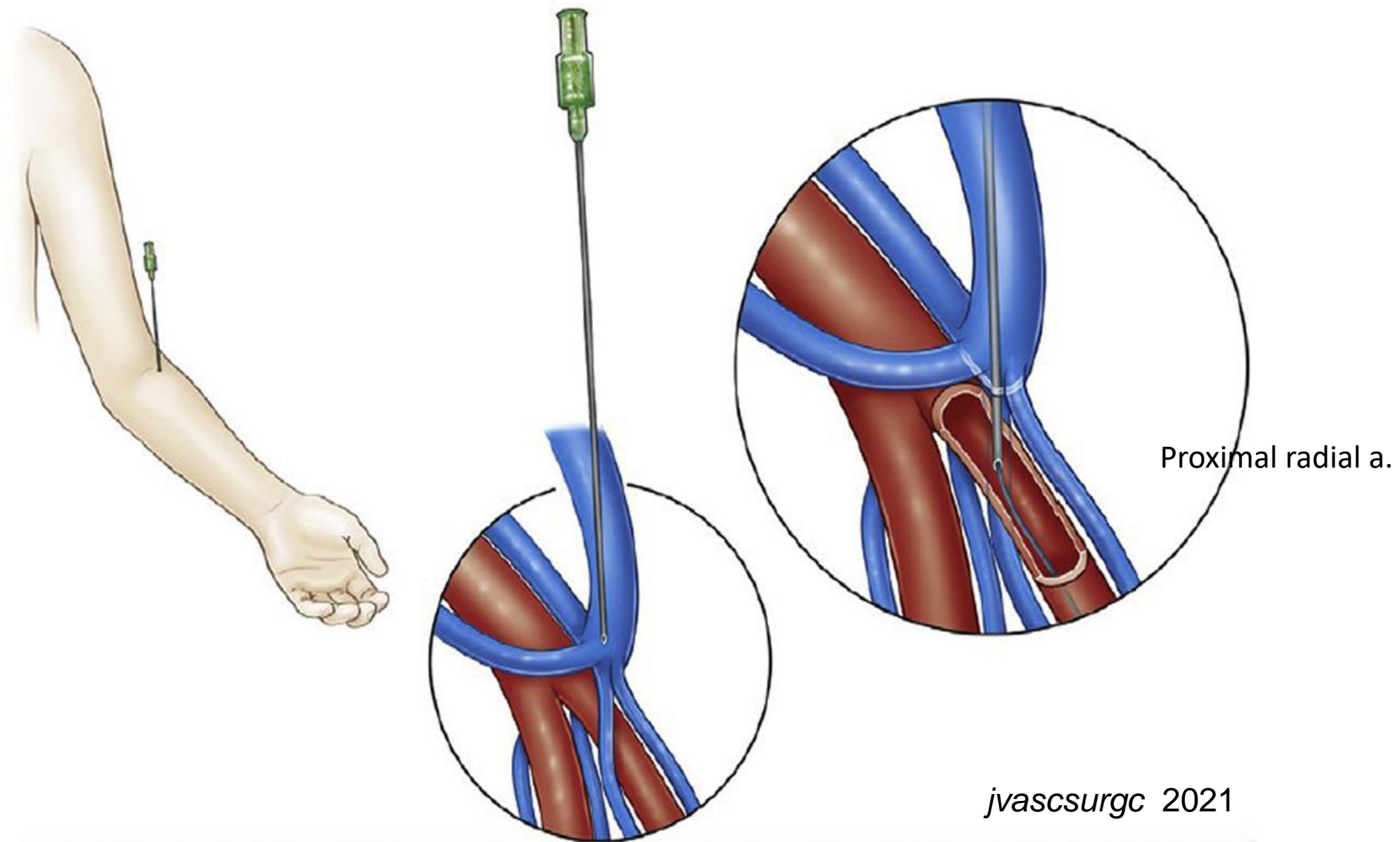
- Ellipsys Vascular Access System
- WavelinQ

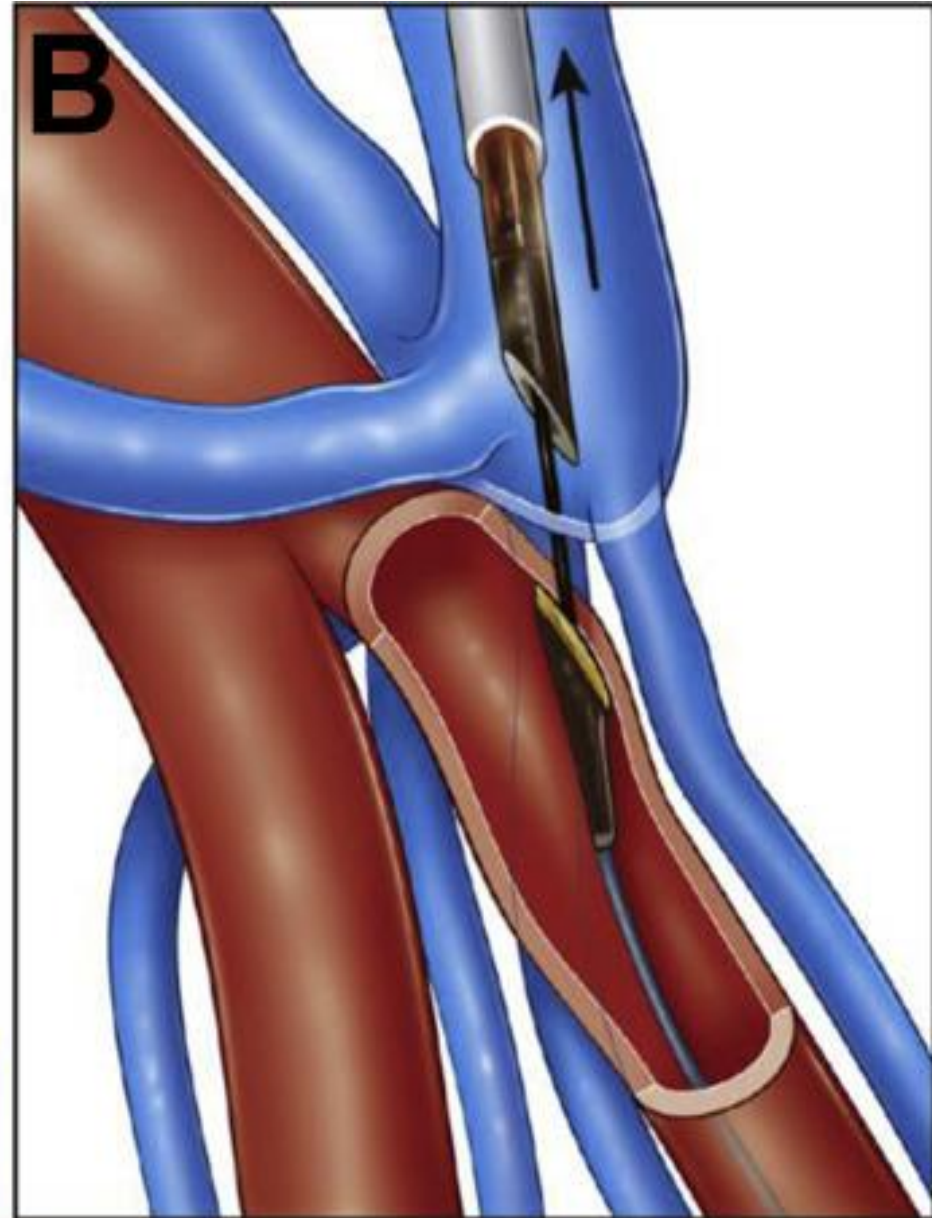
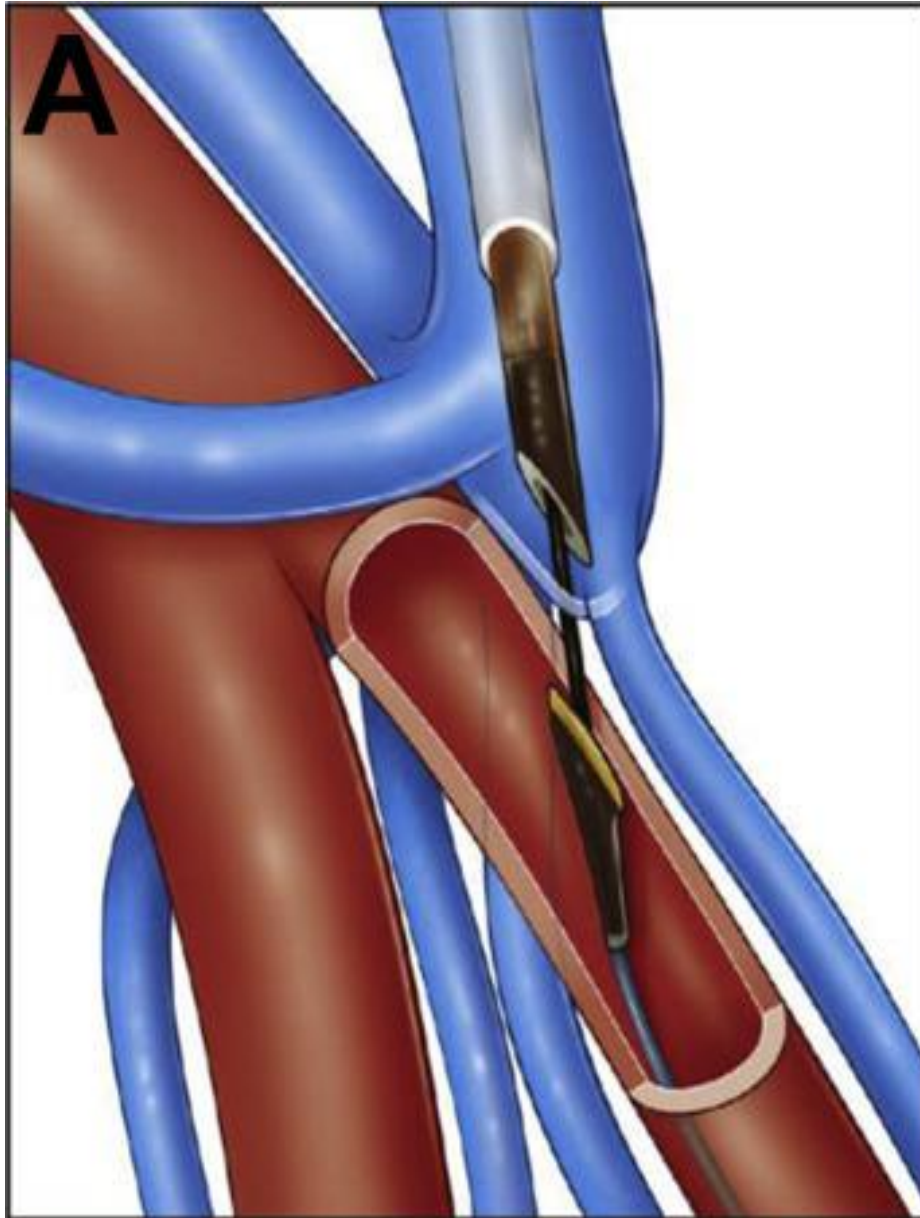
- Contraindications -

CVS – outflow occlusion

Distance between target artery and vein  $> 1.5\text{mm}$

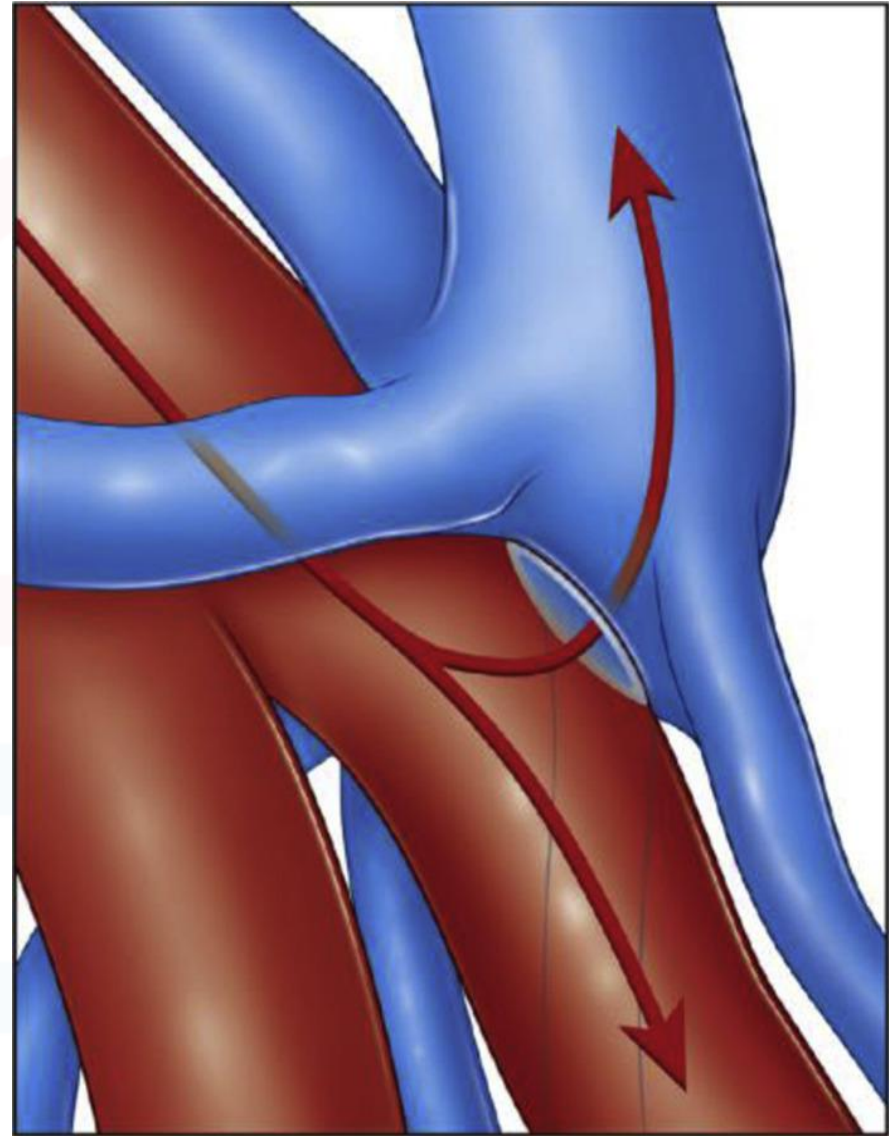
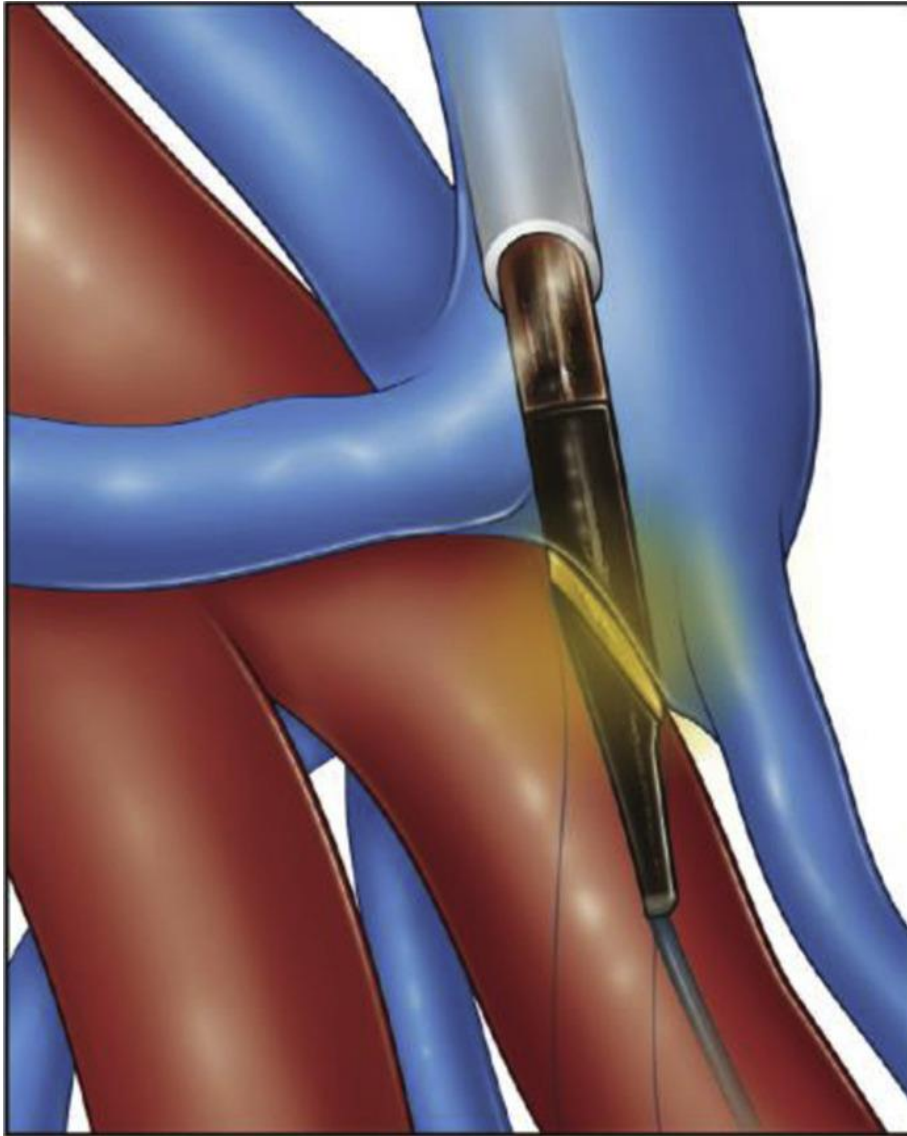
Target vessels  $< 2\text{mm}$  in diameter





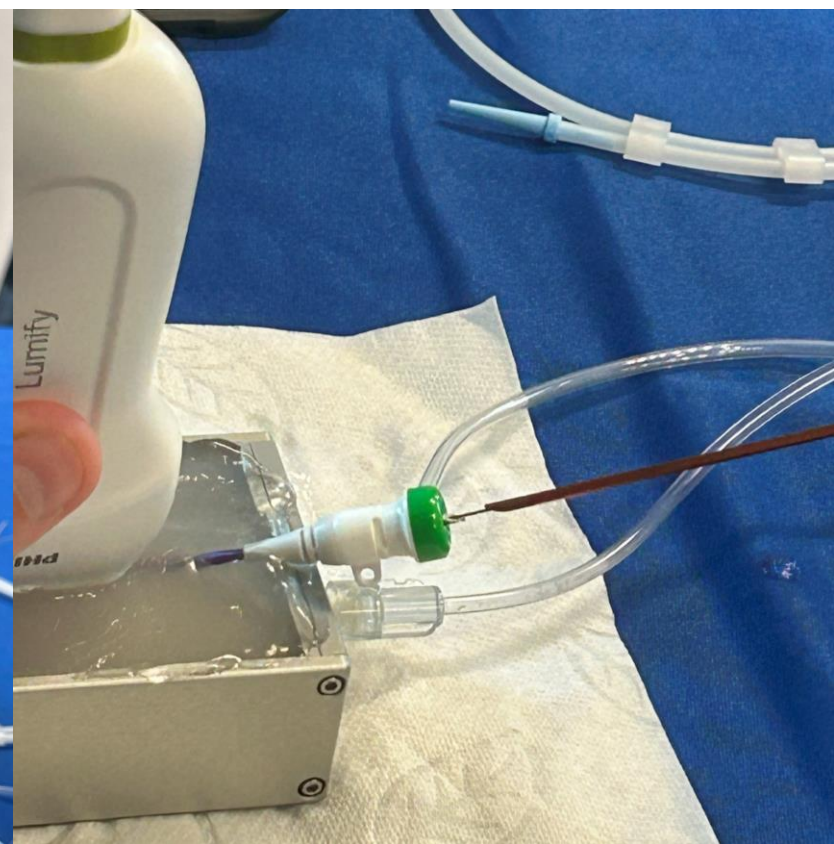
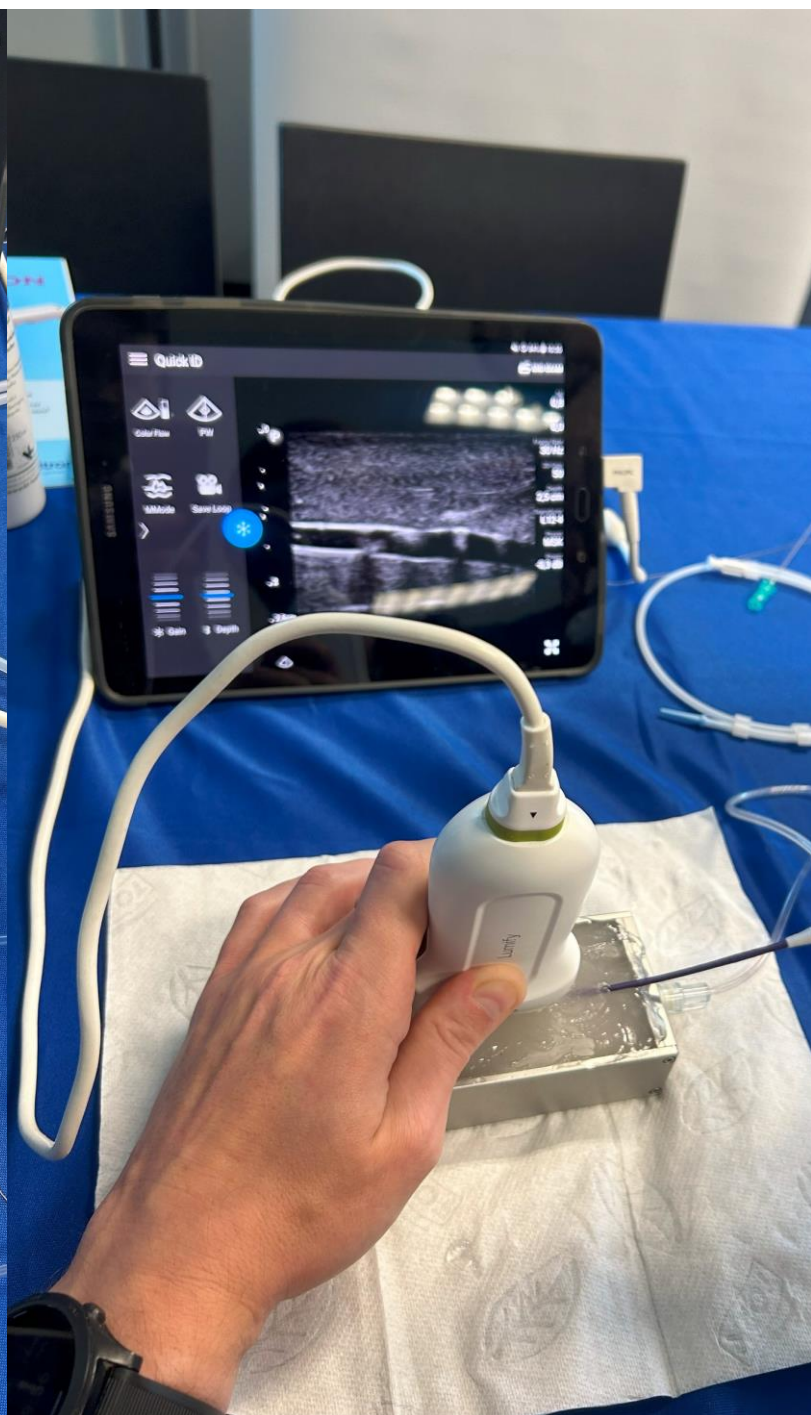
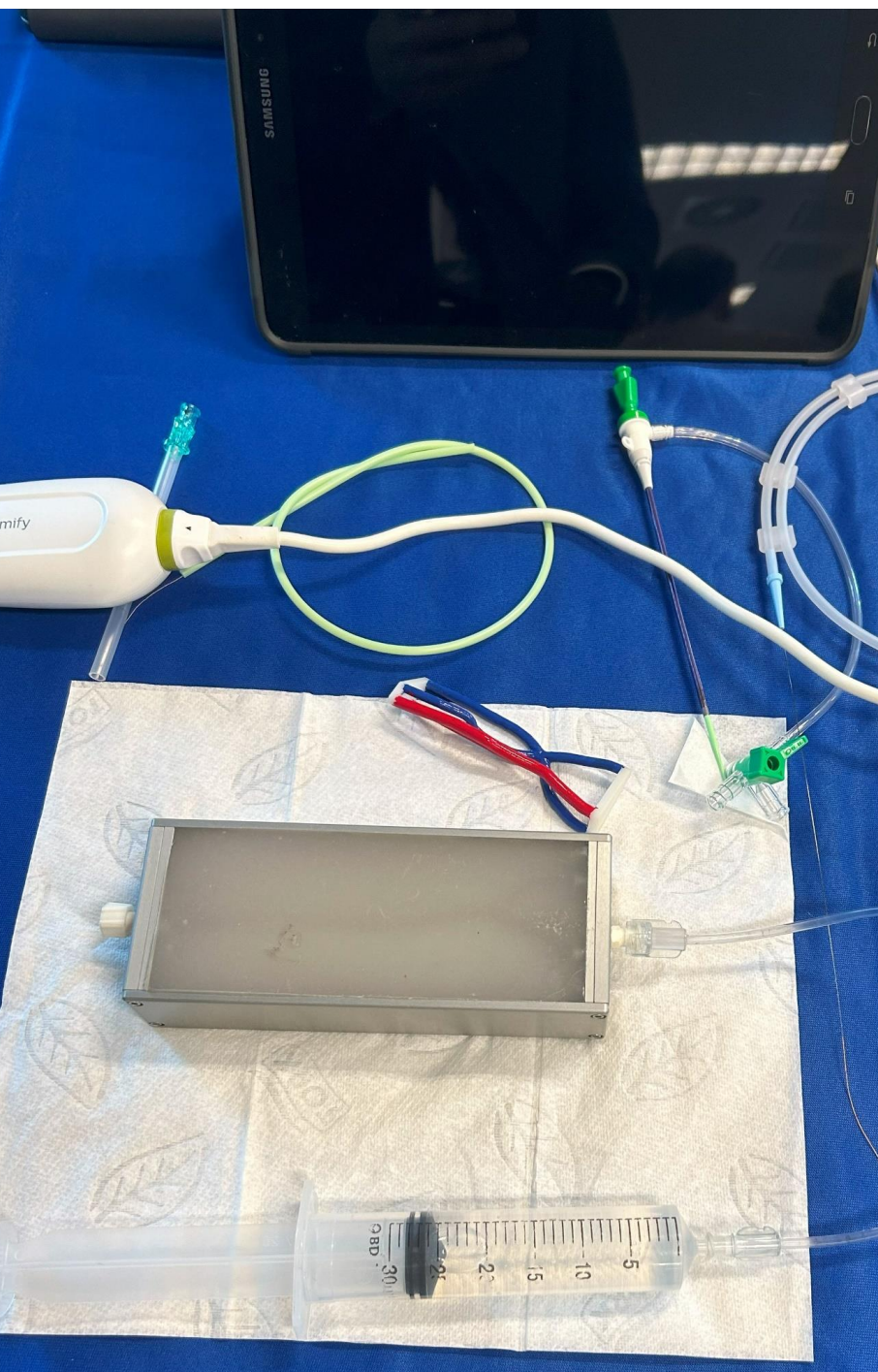
*jvascsurg* 2021



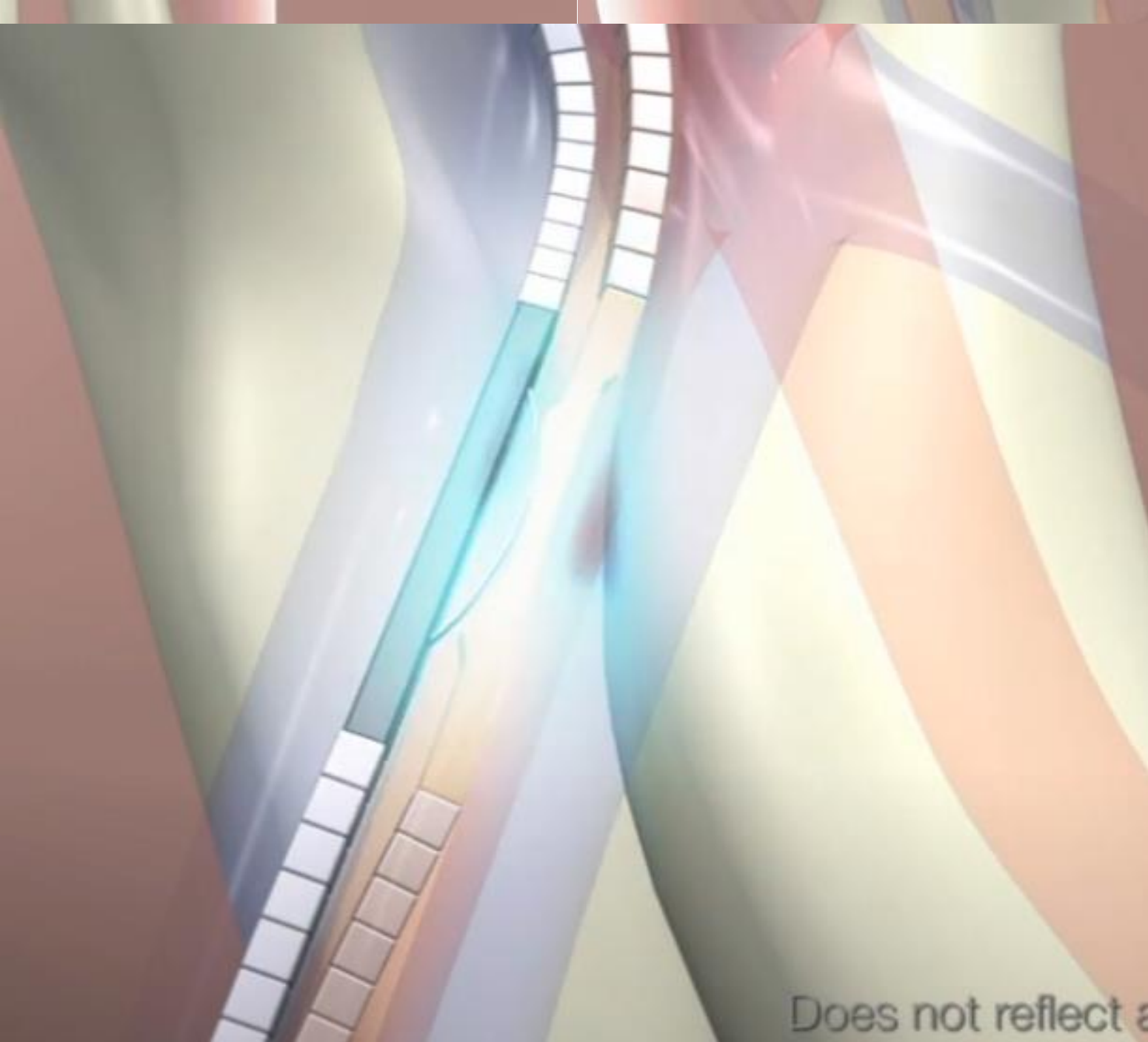


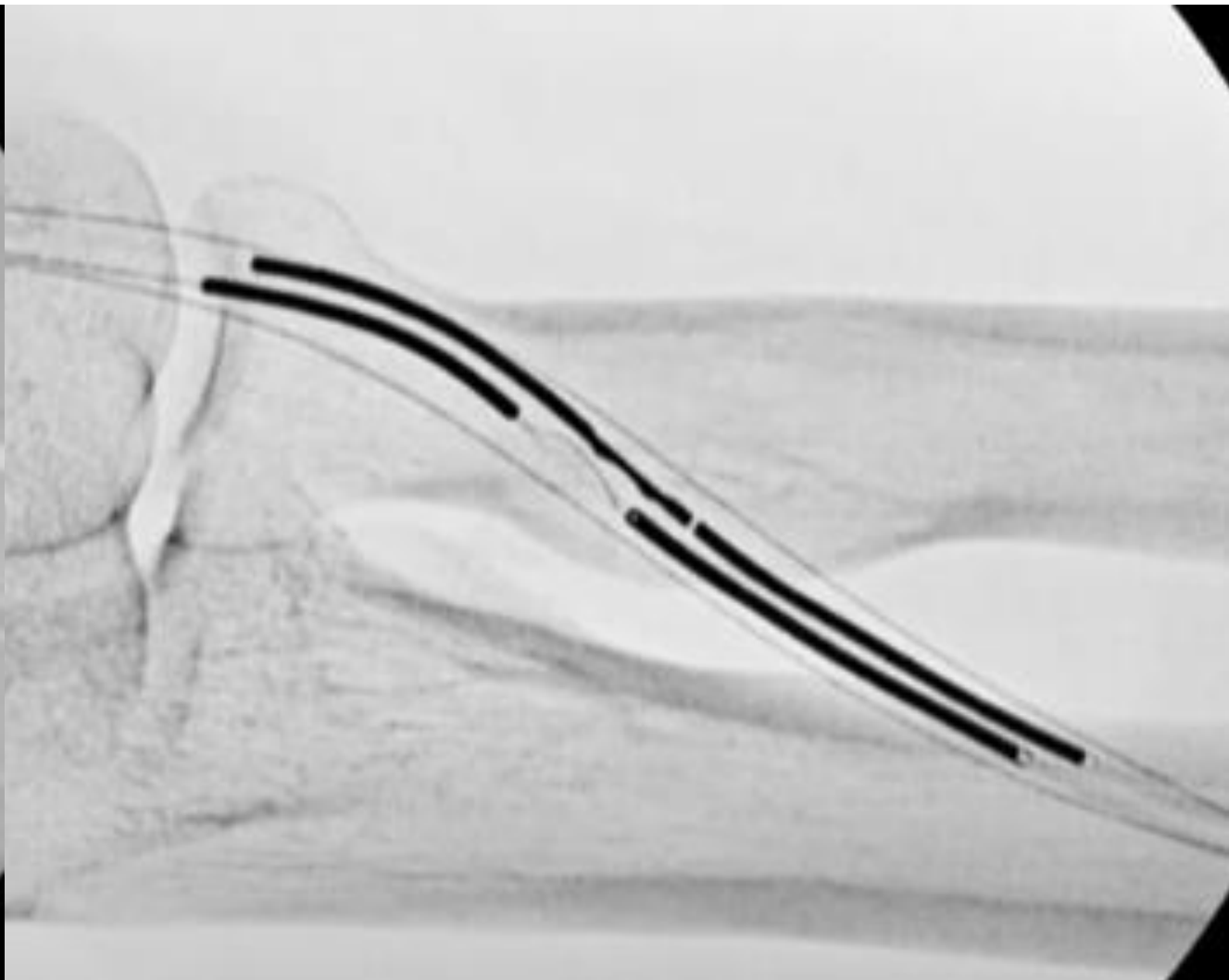
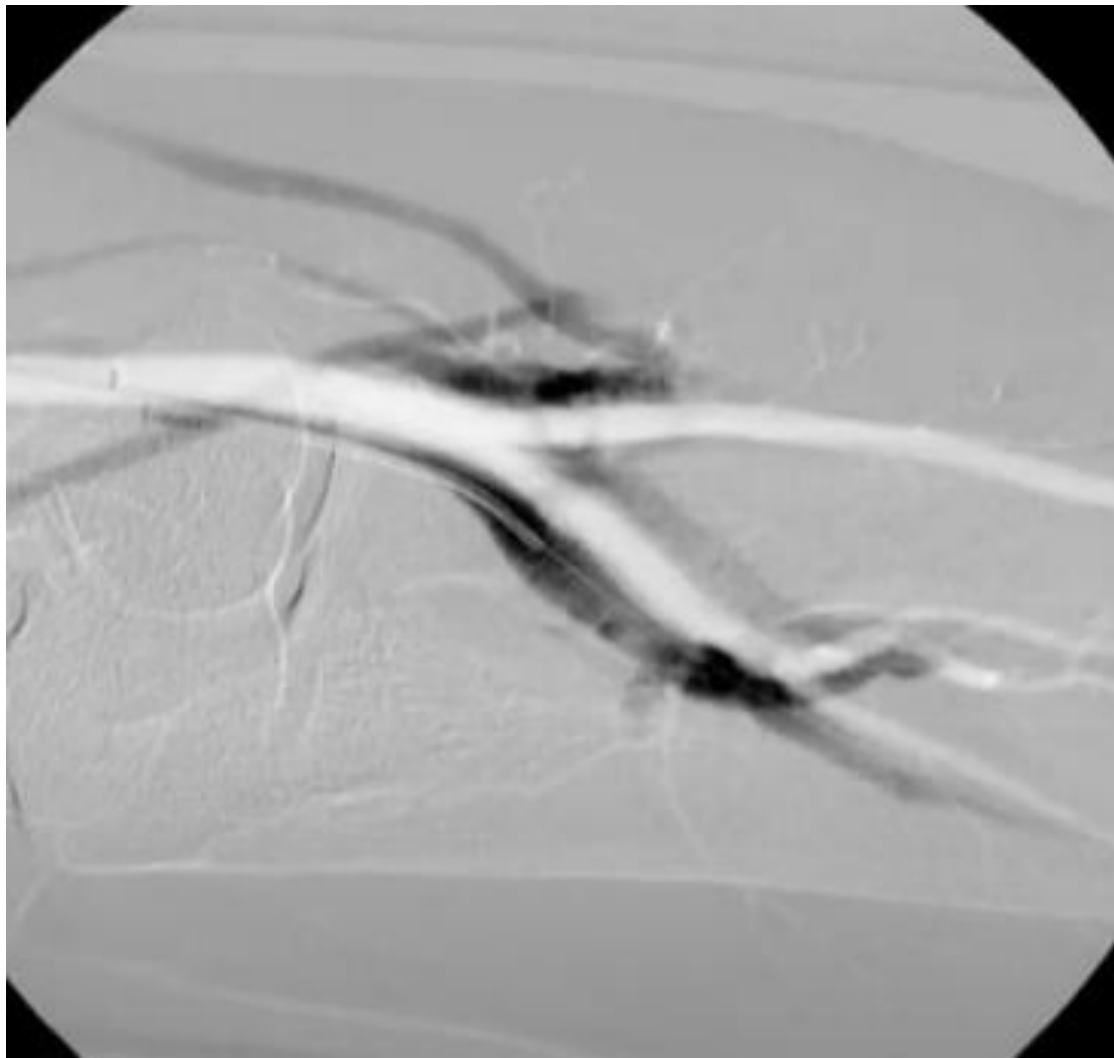
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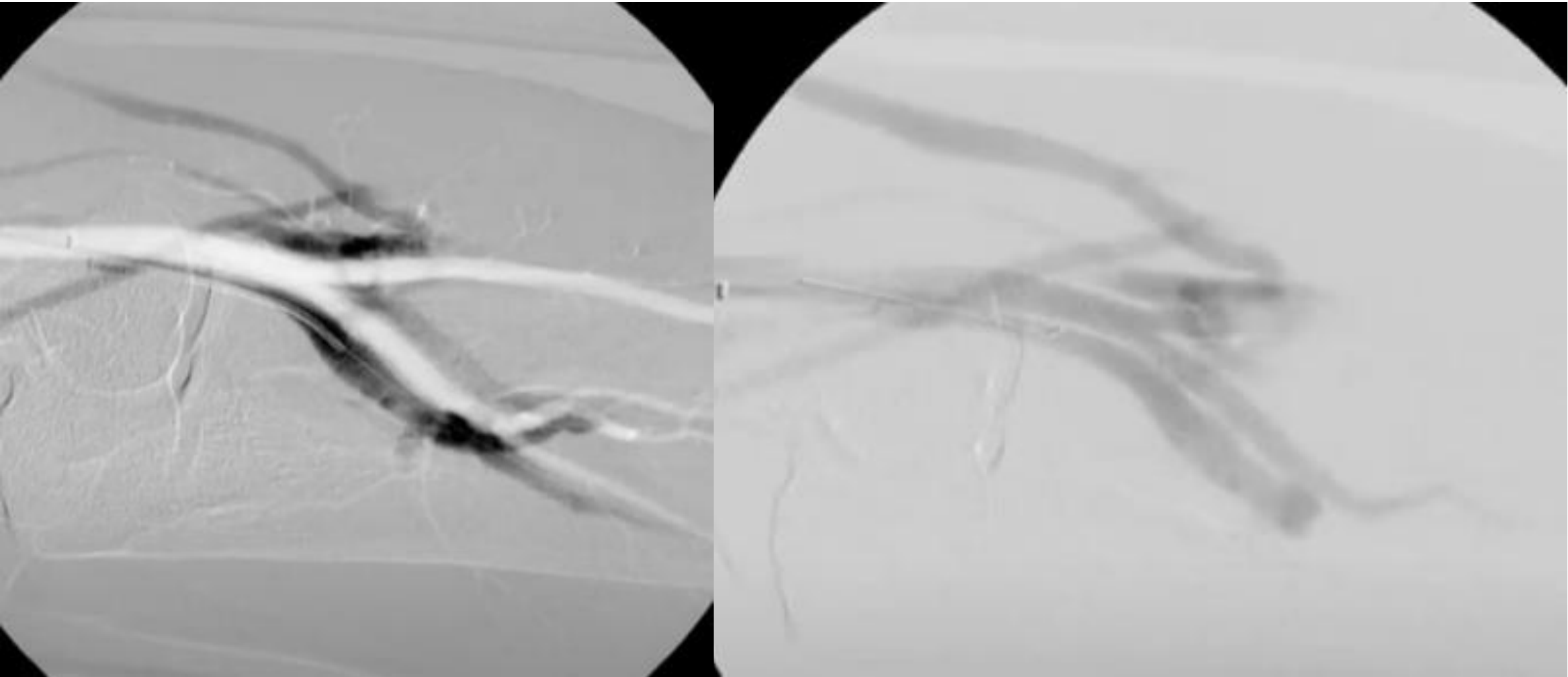






Ref. **WavelinQ™ EndoAVF System case - Ulnar/Ulnar Creation**





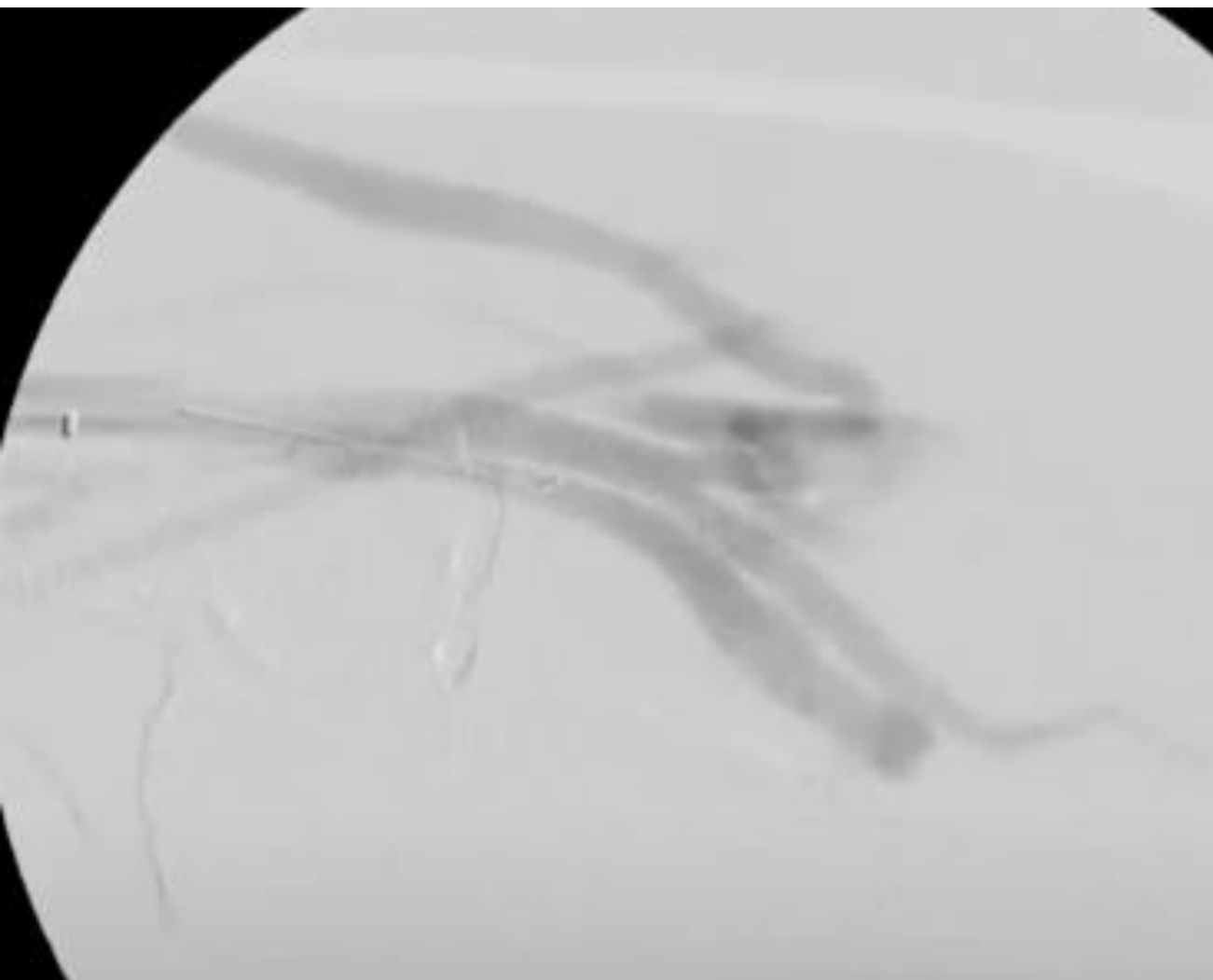
Ref. **WavelinQ™ EndoAVF System case - Ulnar/Ulnar Creation**

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Ref. **WavelinQ™ EndoAVF System case - Ulnar/Ulnar Creation**





Ref. **WavelinQ™ EndoAVF System case - Ulnar/Ulnar Creation**



# Early results of percutaneous arteriovenous fistula creation with the Ellipsys Vascular Access System

Alexandros Mallios, MD,<sup>a</sup> William C. Jennings, MD,<sup>b</sup> Benoit Boura, MD,<sup>a</sup> Alessandro Costanzo, MD,<sup>a</sup> Pierre Bourquelot, MD,<sup>c</sup> and Myriam Combes, MD, MBA,<sup>a</sup> *Paris, France; and Tulsa, Okla*

2018 JVS

- 2017.5~ 2017.10, 34 pts.
- 97% technical success (33/34)
- Patency: 94%
- Mean access flow (brachial artery): 946 mL/min
- Superficialization (n=1)



# Midterm results of percutaneous arteriovenous fistula creation with the Ellipsys Vascular Access System, technical recommendations, and an algorithm for maintenance

2020 JVS

Alexandros Mallios, MD,<sup>a</sup> Pierre Bourquelot, MD,<sup>b</sup> Gilbert Franco, MD,<sup>c</sup> Hadia Hebibi, MD,<sup>d</sup> Hortence Fonkoua, MD,<sup>a</sup> Mahmoud Allouache, MD,<sup>a</sup> Alessandro Costanzo, MD,<sup>a</sup> Romain de Blic, MD,<sup>a</sup> Ghazi Harika, MD,<sup>a</sup> Benoit Boura, MD,<sup>a</sup> and William C. Jennings, MD,<sup>e</sup> *Paris and Villejuif, France; and Tulsa, Okla*

- 2017.5~ 2019.7, 234 pts.
- 99% technical success (232/234)
- 1 year primary: 54%, primary assisted: 85%, 1 year secondary: 96%
- Mean access flow (brachial artery): 923 mL/min
- Early cannulation (<2weeks, 6%, n=14)
- Superficialization (11%, n=24)
- Surgical conversion(later, n=3)



# Long Term Results Of The Ellipsys Fistula

## SETTING AND PARTICIPANTS

Prospective, multi-center, single arm Study



107 Participants



Enrollment period: February 2015 – June 2016

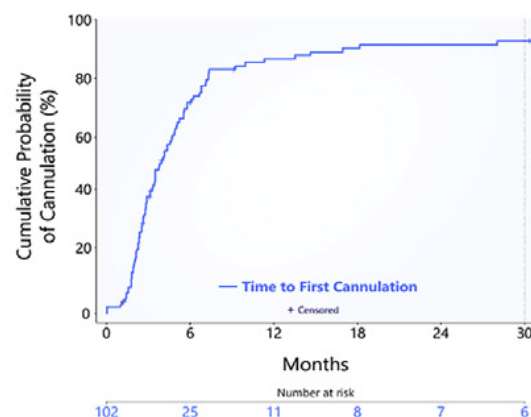


- 5 Outpatient Office-based labs
- 8 Investigators – 7 Interventional Nephrologists



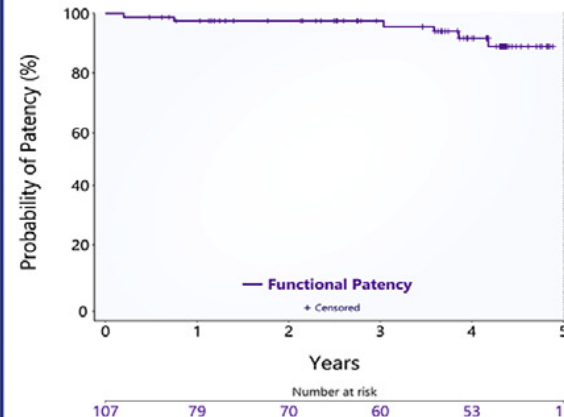
Technical Success 95%

## FISTULA USE, FUNCTIONAL, PRIMARY ASSISTED AND CUMMULATIVE PATENCY



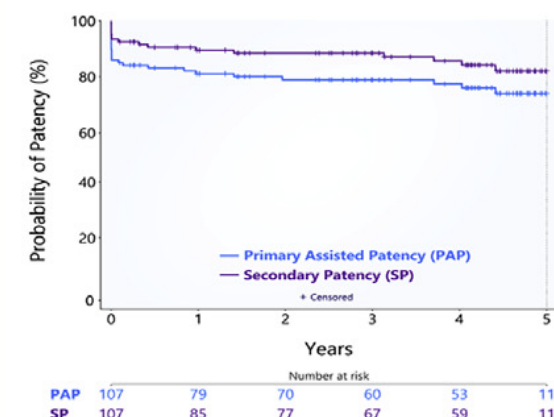
**92%**

Fistula Use through 5 Years



**91.8%**

Functional Patency through 5 Years



**82%**

Cumulative Patency through 5 Years

**CONCLUSION:** Long-term follow-up of percutaneous arteriovenous fistula with the Ellipsys vascular access system provided durable, effective dialysis, with low rates of access maintenance procedures, and without major complications.

*J Vasc Interv Radiol* 2022; 33:1143–1150  
<https://doi.org/10.1016/j.jvir.2022.05.016>



# Comparison of surgical versus percutaneously created arteriovenous hemodialysis fistulas

Ghazi Harika, MD,<sup>a</sup> Alexandros Mallios, MD,<sup>a</sup> Mahmoud Allouache, MD,<sup>a</sup> Alessandro Costanzo, MD,<sup>a</sup> Romain de Blic, MD,<sup>a</sup> Benoit Boura, MD,<sup>a</sup> and William C. Jennings, MD,<sup>b</sup> *Paris, France; and Tulsa, Okla*

2021 JVS

## Conclusions

- Fistulas created percutaneously with the Ellipsys system showed superior maturation rates and similar patency with s-AVFs created in an experienced high-volume vascular surgery practice.
- p-AVFs had a lower risk of wound healing issues, infection, and surgical revision. Larger, prospective, randomized multicenter studies are needed to confirm these findings

# Comparison of Surgical (s-AVF) Versus Percutaneously Created (p-AVF) Arteriovenous Hemodialysis Fistulas



Single-center retrospective review



107 Ellipsys device p-AVF patients vs. 107 s-AVF patients



p-AVF

65%

61%

90%

55%

6 Week Maturation  
 $P=0.01$

1 Yr Primary Patency  
 $P<0.01$

1 Yr Secondary Patency  
 $P=NS$

2 Yr Primary Patency  
 $P=0.48$

s-AVF

50%

86%

91%

52%

JVS

Journal of  
Vascular Surgery

Official Publication of the Society for Vascular Surgery

Harika et al. *J Vasc Surg* July 2021

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EndoAVF 2.0... ?



Stent Tek

Once aligned, needle crosses  
between vessels

to End anastomosis is complete



**ESKD landscapes: current challenges in the kidney patient journey and quality of life related topics**

N. Inston

**Long-term experience and comparison of distal radiocephalic AVFs with and without the external support device: VasQ™**

R. Shahverdyan

**Long-term results of percutaneous AVFs:  
Are we ready to include it in the guidelines?**

M. Wasse

**The all new percutaneous AVF Device: Velocity**

D. Hentschel

**Long-Term experience with early-cannulations AVGs and HeRO™ Graft**

J. Gilbert

**The all new bioabsorbable arteriovenous graft: aXess**

M. Tozzi

# Generation taneous Fistula eation

**Vascular Access**

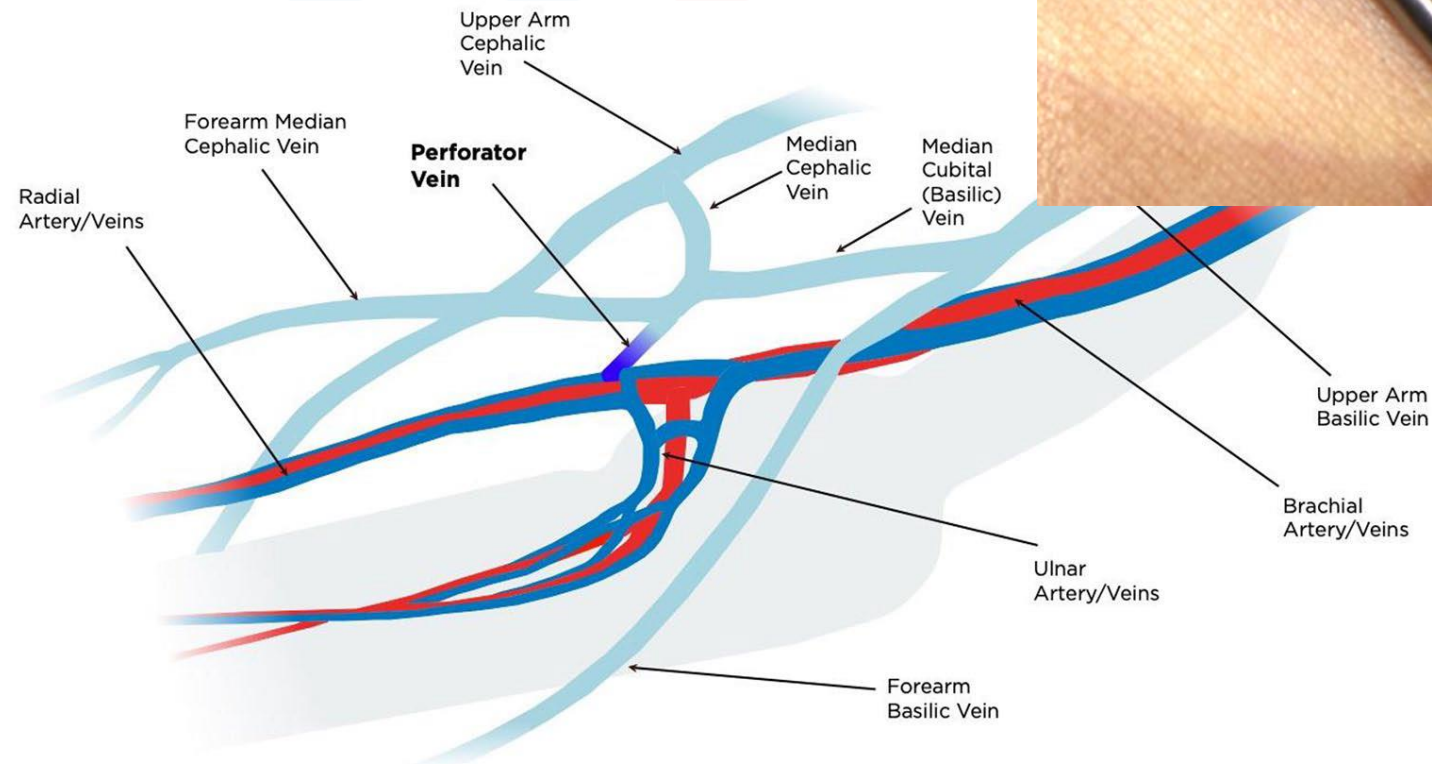
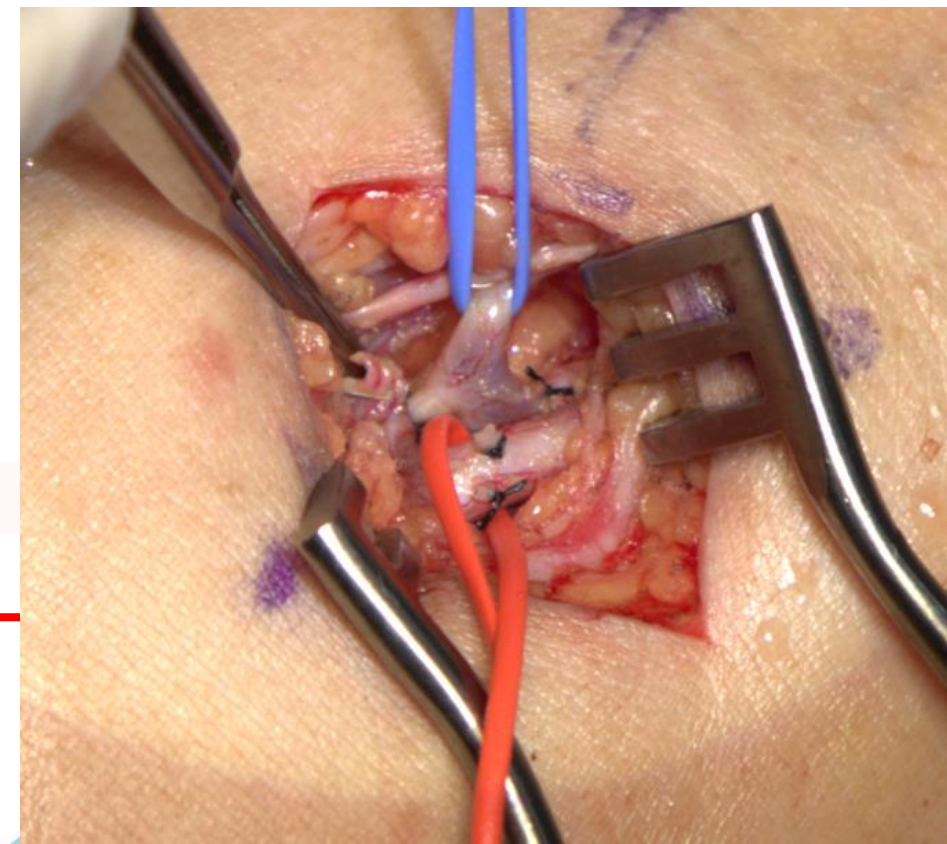
The Velocity™  
Arterio-Venous



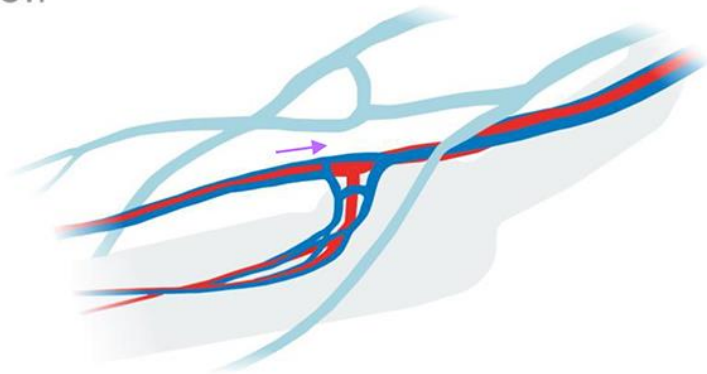
# Novel classification of proximal forearm perforator vein in the planning and creation of percutaneous and surgical Gracz-type arteriovenous fistulae

Robert Shahverdyan<sup>1</sup> , Klaus Konner<sup>2</sup>, Stephan Segerer<sup>3</sup>  
and Haimanot Wasse<sup>4</sup> 

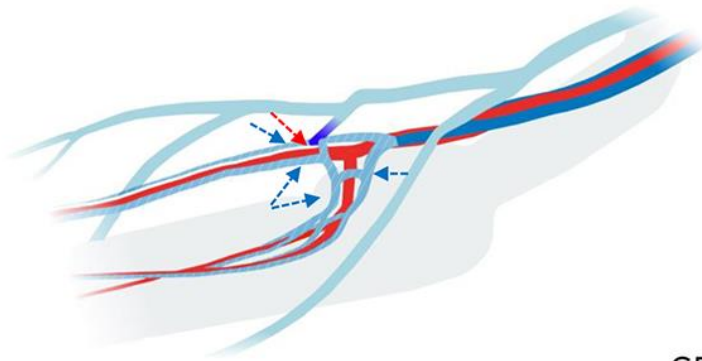
The Journal of Vascular Access  
2024, Vol. 25(3) 872–882  
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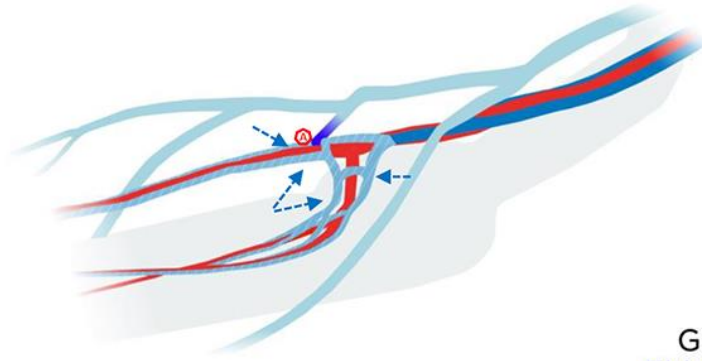


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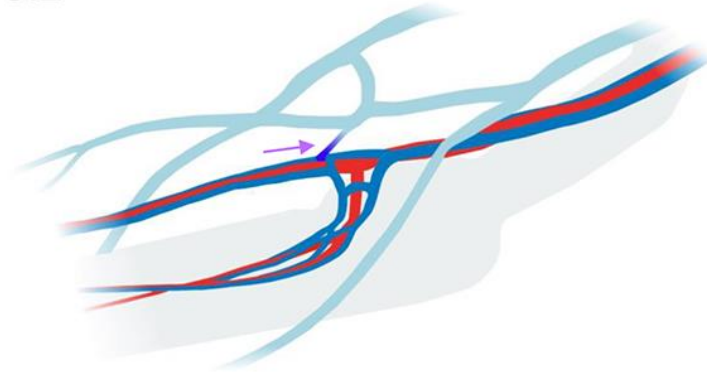


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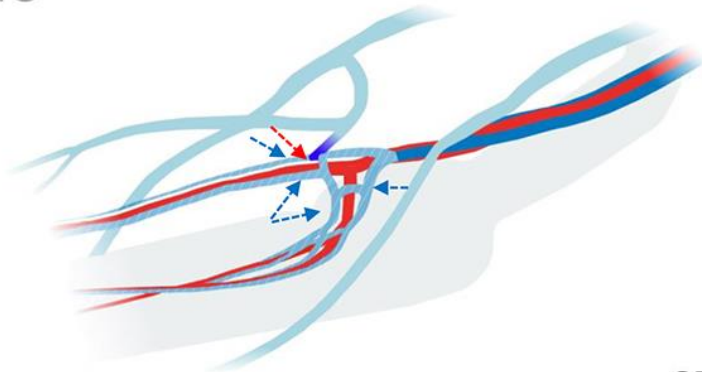
2B

GRACZ  
ELLIPSYS

0.2

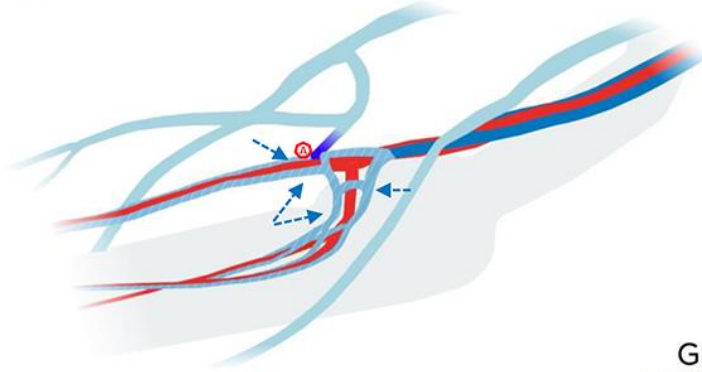


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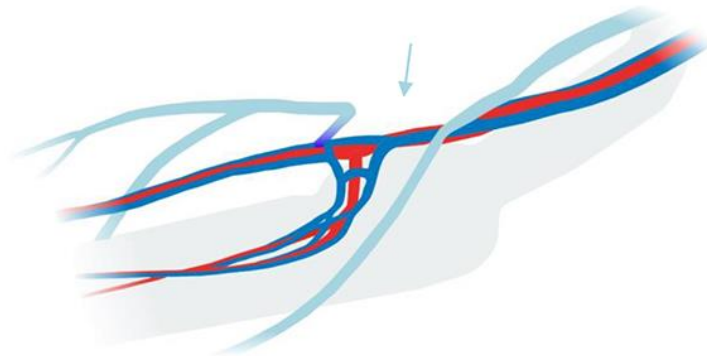


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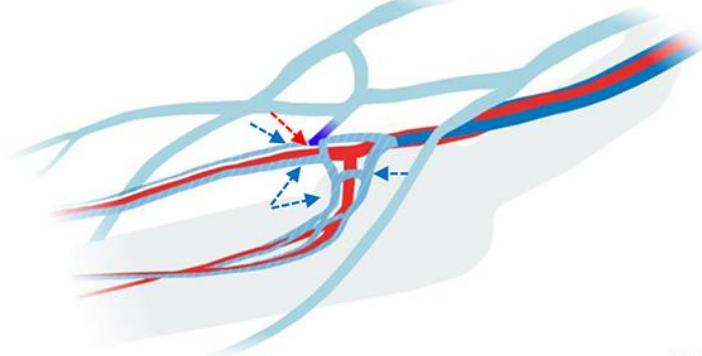
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ELLIPSYS

0.3

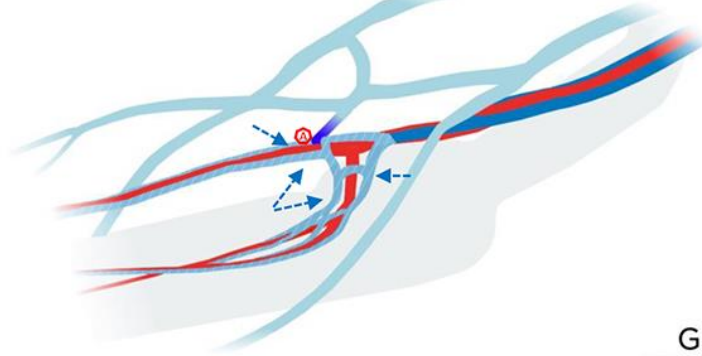


1D



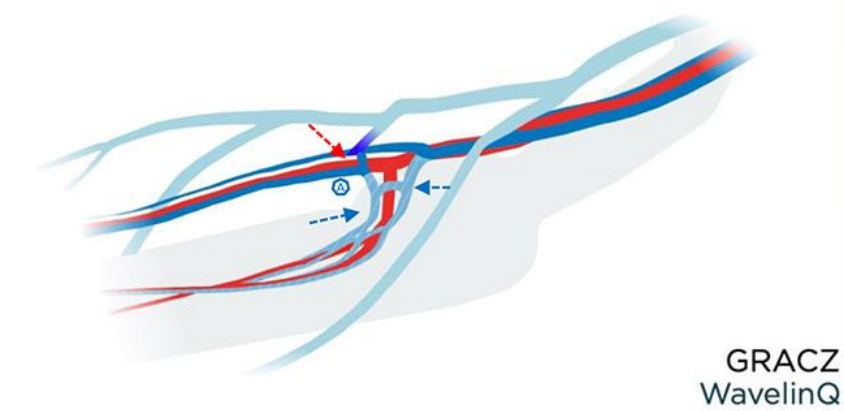
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2D

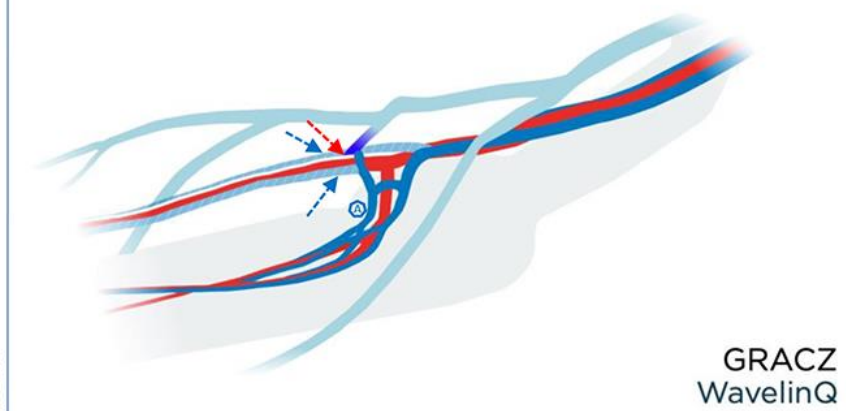
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ELLIPSYS



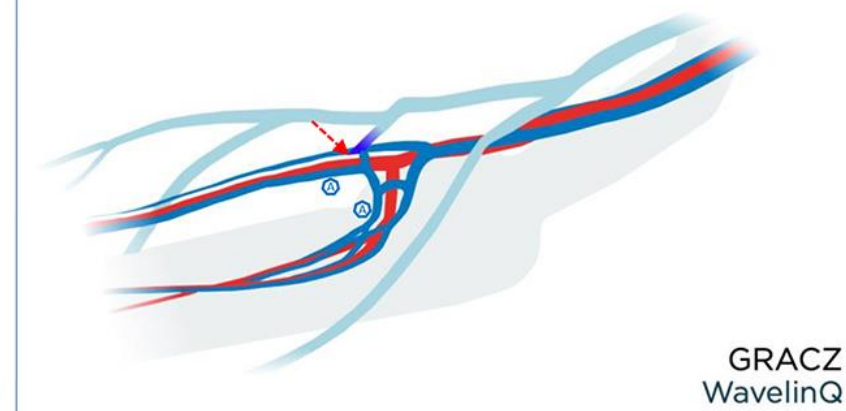
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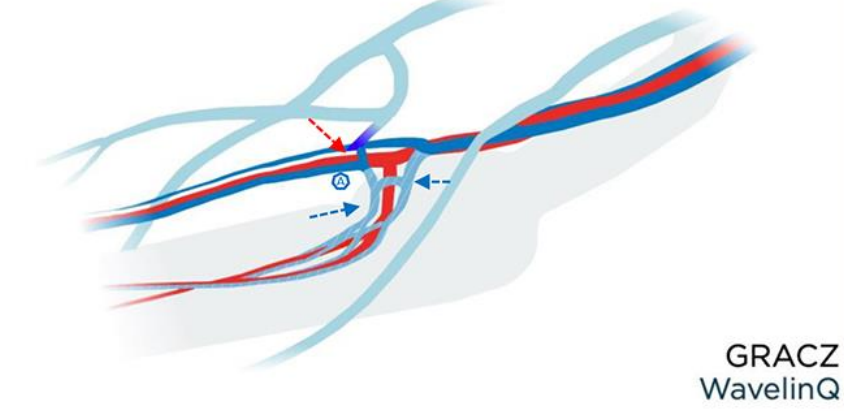
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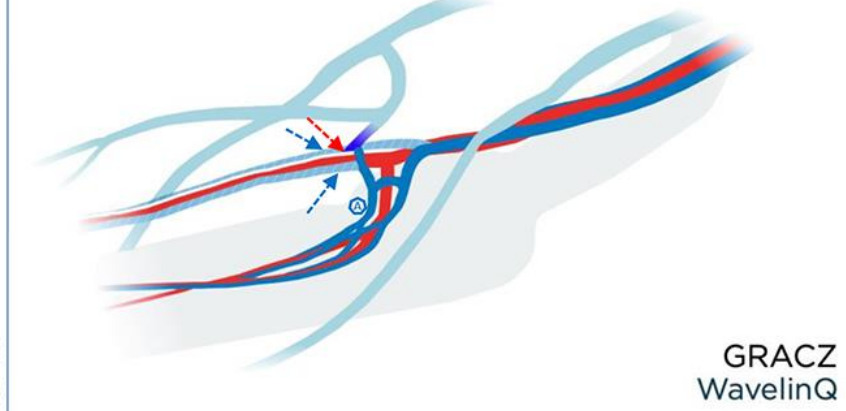
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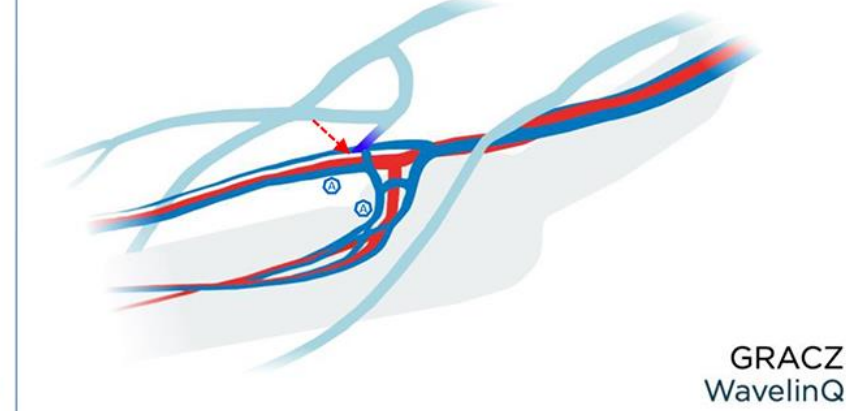
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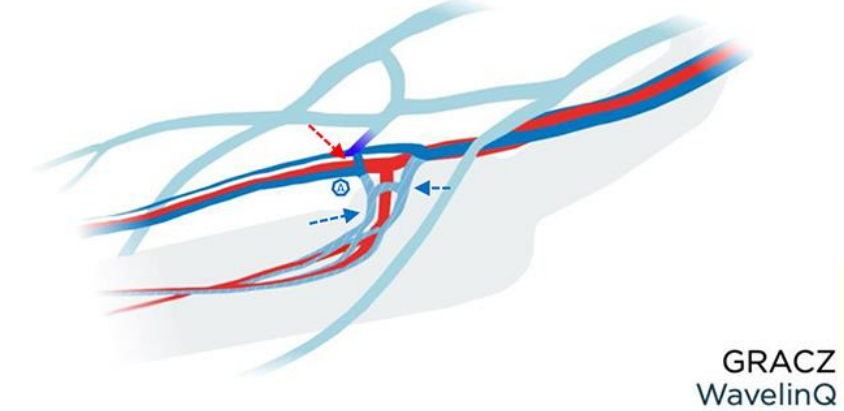
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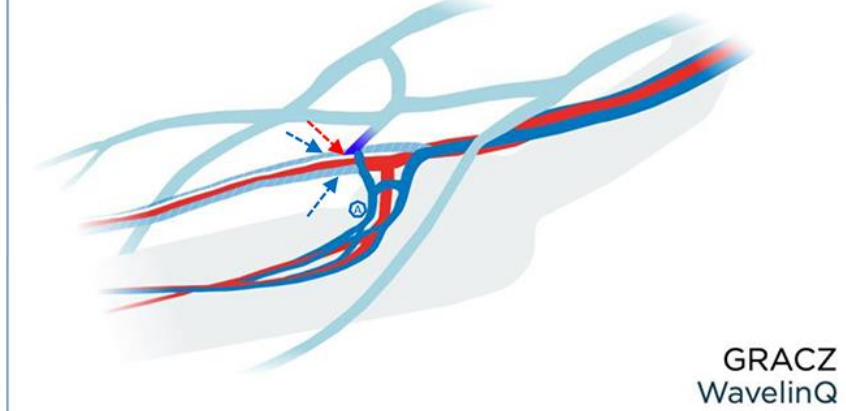
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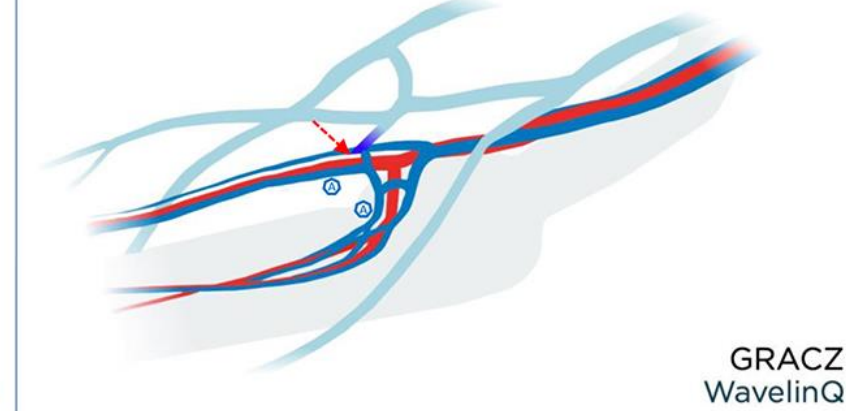
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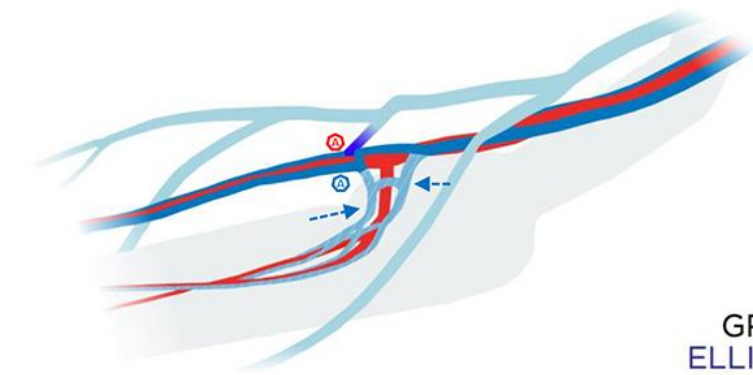
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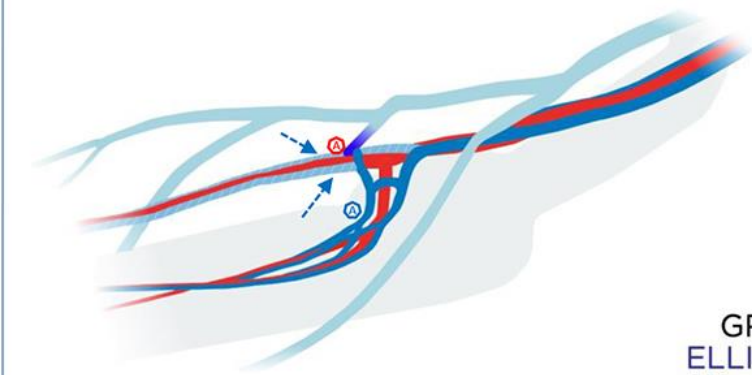
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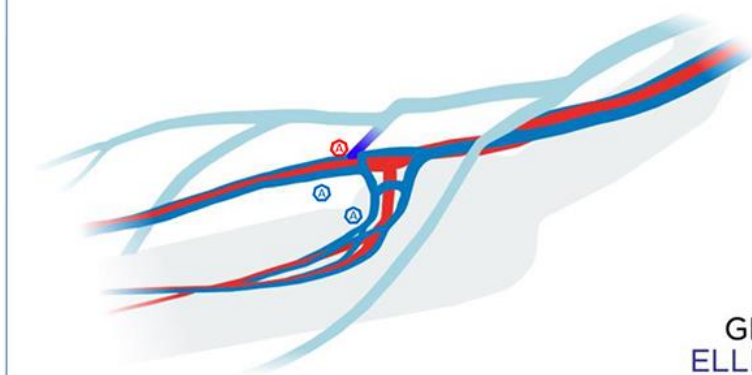
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GRACZ  
ELLIPSY  
WavelinQ

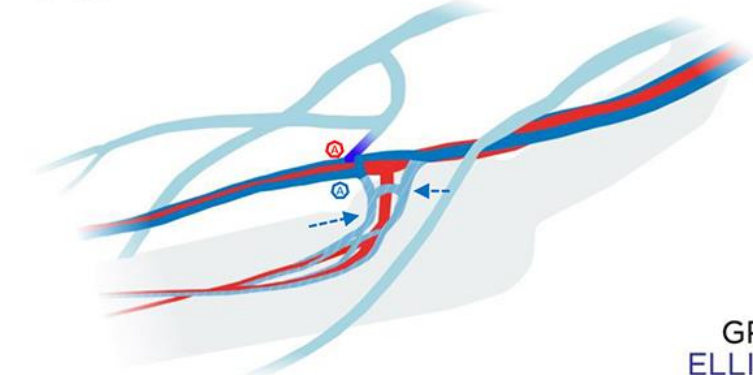
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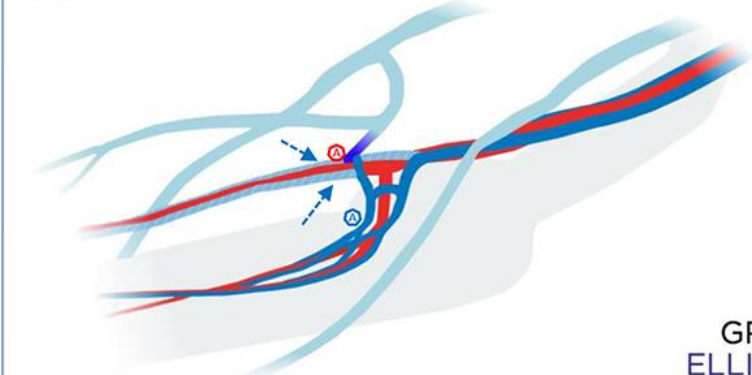
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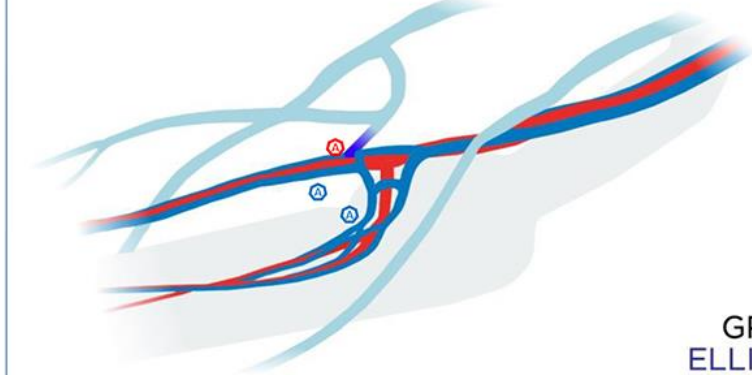
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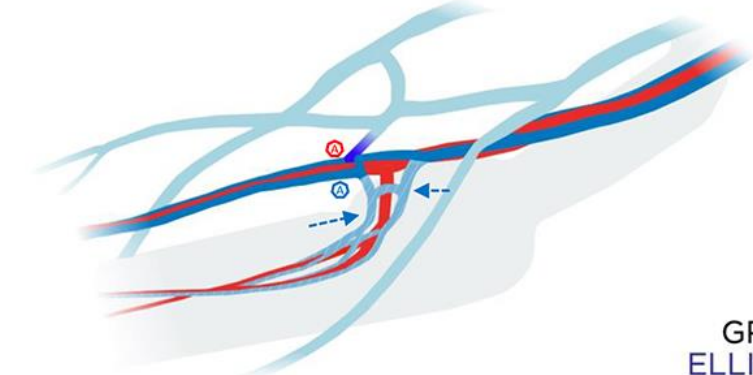
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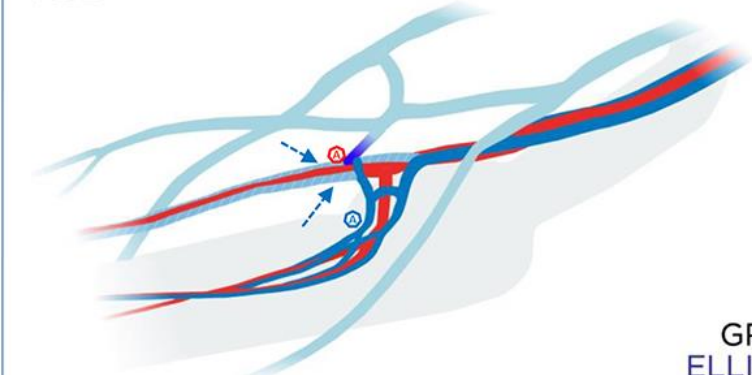
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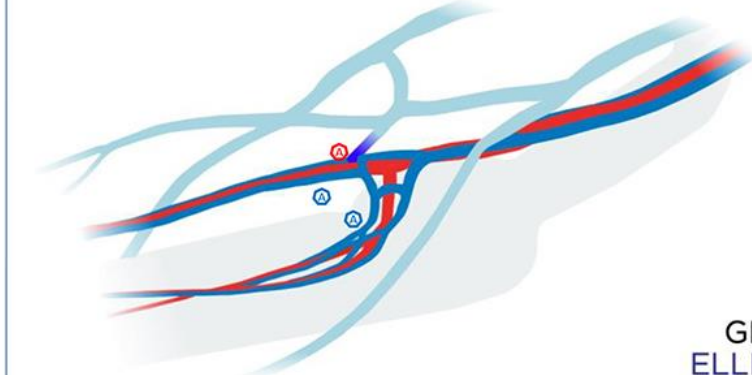
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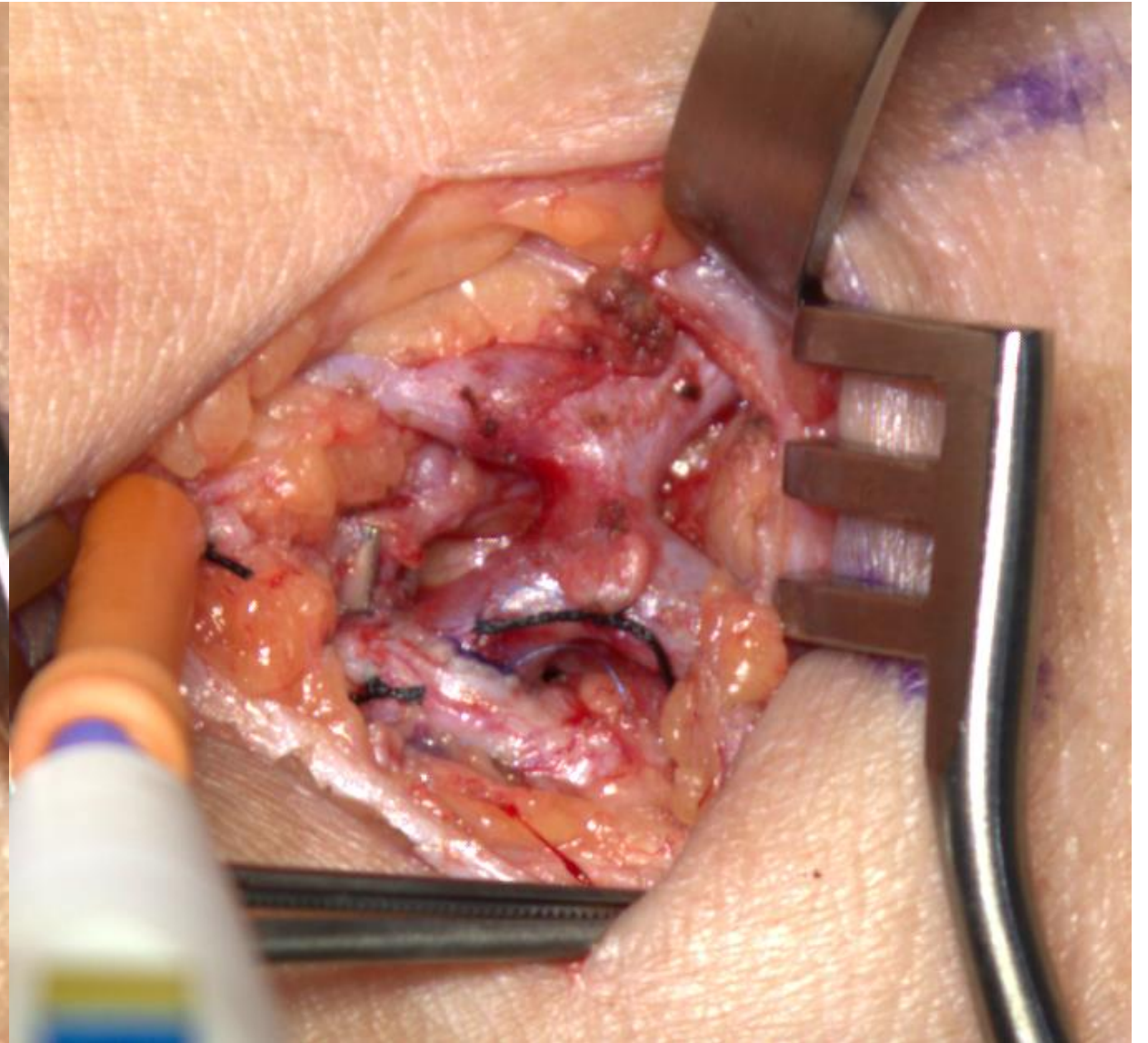
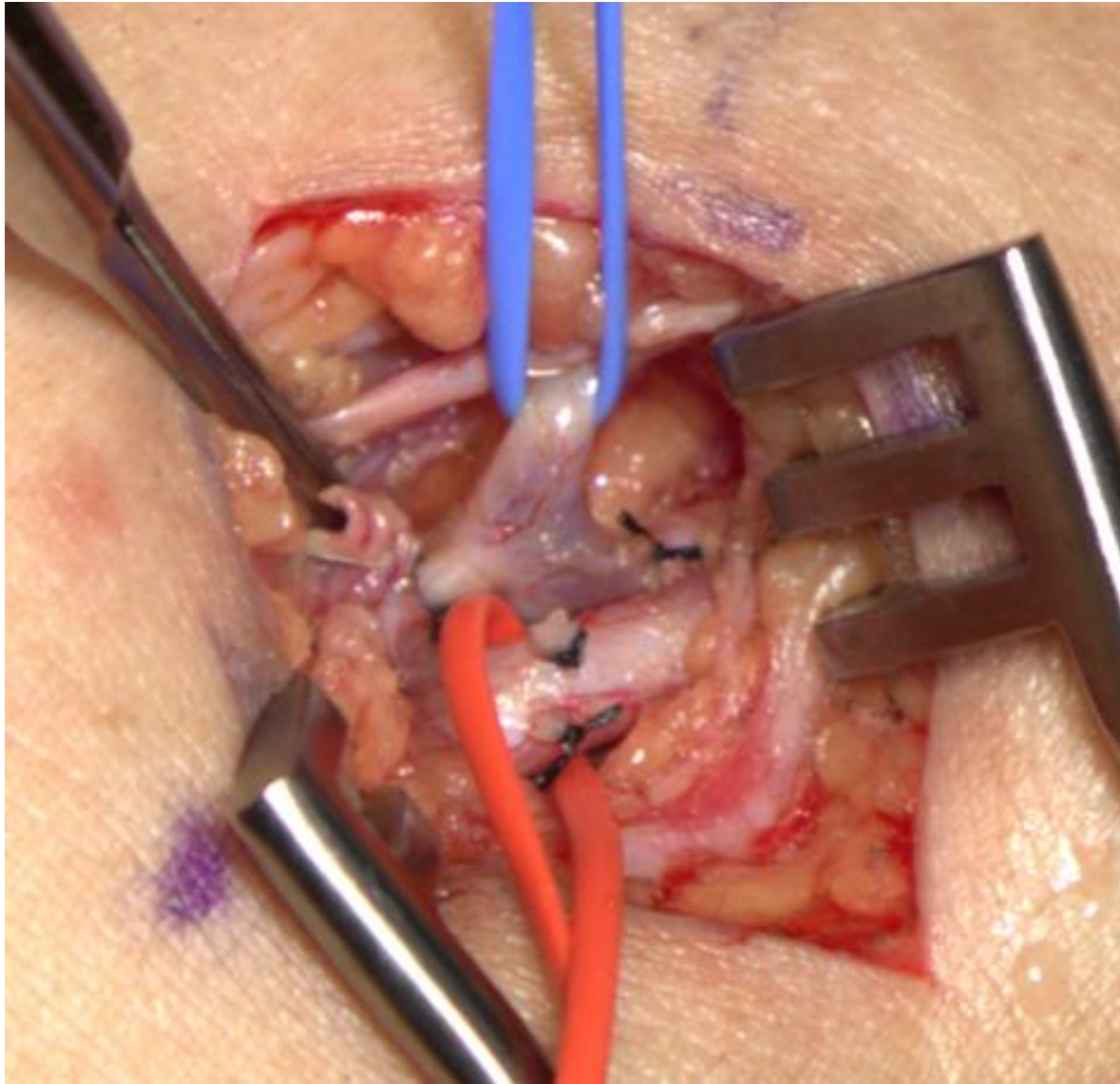
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4RUD

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Thank you

