Percutaneous Arteriovenous Fistula Creation - Ellipsys

Alexandros Mallios MD
Vascular Surgeon
Paris – France
• No potential conflict of interest
• Department of Vascular Surgery
• Group of 4 vascular surgeons
• 2500 OR cases per year
• 50% - vascular access cases
• 400 AVF creations per year
This is what we do.....
This is what we don’t like:
Brachial Artery

Proximal Radial

Distal Radial (or Ulnar)
Proximal radial artery arteriovenous fistula for hemodialysis vascular access

William C. Jennings, MD, Alexandros Mallios, MD, Nasir Mushtaq, PhD, MBBS, MPH

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- 1400 patients
- Advantages of PRA inflow
- Faster and better maturation for patients not suitable for distal AVFs
- Lower complication rates than brachial based AVFs
The Best Possible Fistula..

The Least Possible Interventions
Ellipsys® Vascular Access System

- PRA – Inflow
- Superficial venous outflow
- Ultrasound guided
- *One-stage procedure*
Ellipsys® Vascular Access System

Venous Micropuncture

Radial Artery (RA) Puncture
Positioning of Ellipsys® Catheter
Pressure, Activation and Fusion
Creation of AVF
Four Days Post Ellipsys® Procedure
One Week Post Ellipsys® Procedure
Experience

- May 2017 – January 2018
- 60 patients
- 98% technical success
- 96% cumulative patency
- Mean access flow: 1025ml/min (brachial artery)
- Follow-up 128 days (12-258)
Experience

• No Serious Adverse Events
• One superficialization
• All AVFs used or usable at 4-6 weeks
• *Immediate 5x20mm PTA of the anastomosis and DCV*
• 18% patients required additional procedures
No Side Branch Ligation or Coiling
No Side Branch Ligation or Coiling

- Low pressure AVF
- Less risk for aneurysms / bleeding
- Less risk for thrombosis
- Less shear stress and risk for long-term stenosis
- Cannulation of both cephalic and basilic vein
- Avoidance of basilic vein superficialization (24% cannulation in “Y”)
Cephalic Vein Cannulation in the Arm
Cannulation in “Y” (possible in 36%)
Avoidance of Basilic Superficialization (24%)
Avoidance of Basilic Superficialization (24%)
Early Cannulation – Day 4
Early Cannulation – Day 1
Minimally Invasive...
Patient Perspective...
7 months post Creation...
Conclusion

pAVF Creation with Ellipsys®

• Minimally invasive one-stage AVF creation
• High safety profile
• Time efficient procedure (10-15 min)
• High patient satisfaction
Conclusion

*pAVF Creation with Ellipsys®*

- Excellent technical success and patency rates
- Less long-term complications and need for re-interventions
- New possibilities in terms of vessel cannulation and avoidance of superficialization
- Early Cannulation – avoidance of catheter for certain patients
Thank You For Your Attention
Save the Date!!!
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Alexandros Mallios MD
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Patient No 31
Mapping of DCV
Venous Micropuncture
Needle Positioning
Radial Artery (RA) Puncture
Confirming RA Access
Sheath Placement
Closure of the Device
Activation and Fusion
AVF flow in DCV

Pt 31
Anastomosis
Completed 17 minutes after scanning the patient!!!

Patient No 31 Demo Case
5x20 Balloon Positioned
Balloon Inflated
Improved AVF flow