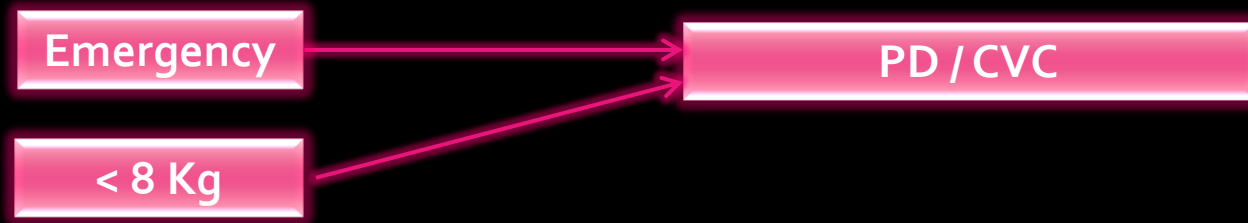


ACCESS CREATION IN CHILDREN

Pierre Bourquelot
Paris



One-Lumen Broviac Catheter



Two-Lumens Pediatric Catheters

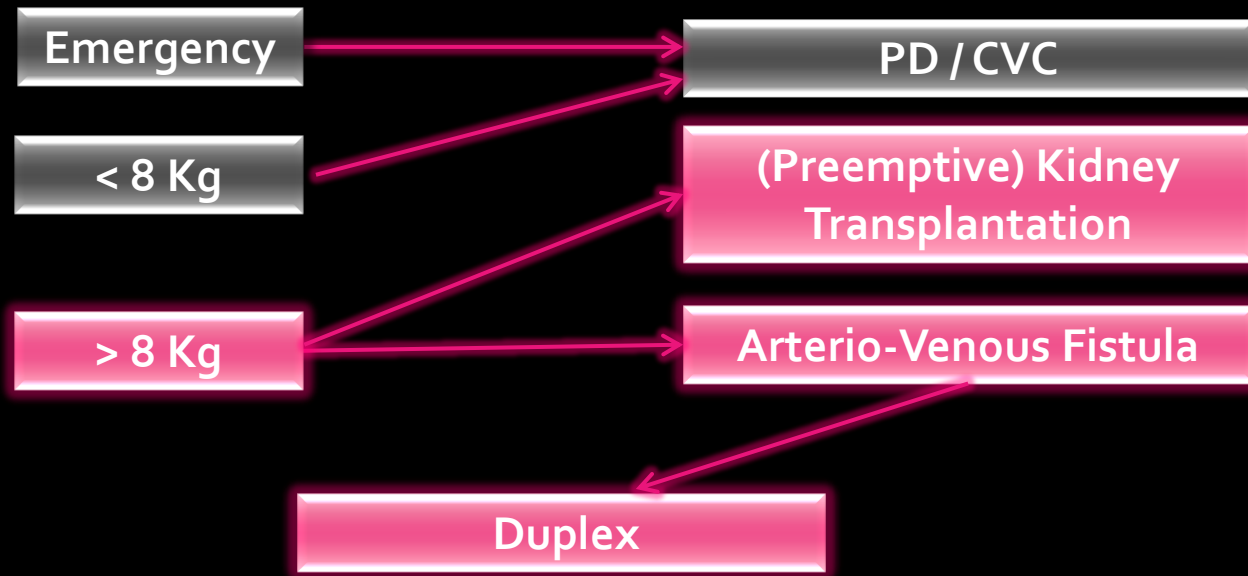
Quinton Permcath 12 Fr. 13 cm



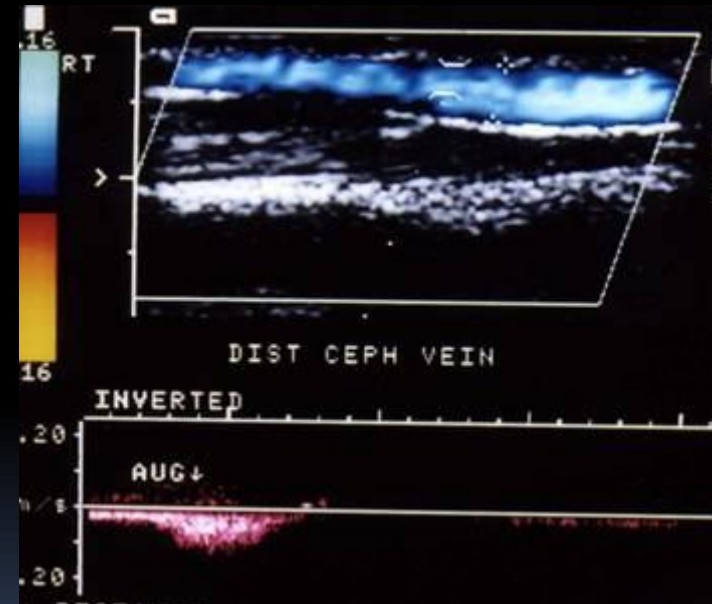
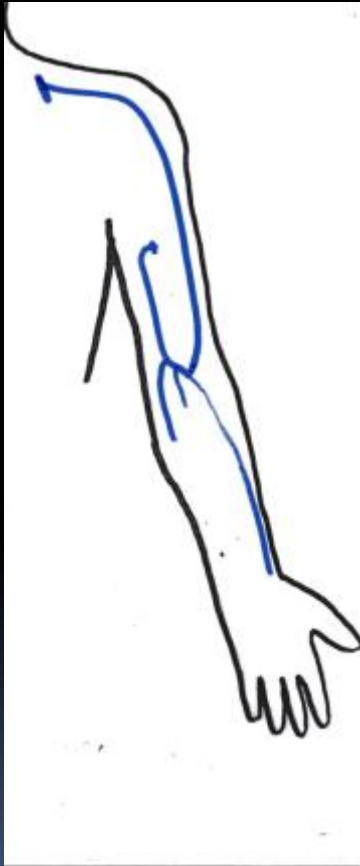
Kimal 8 Fr. 18/24 cm

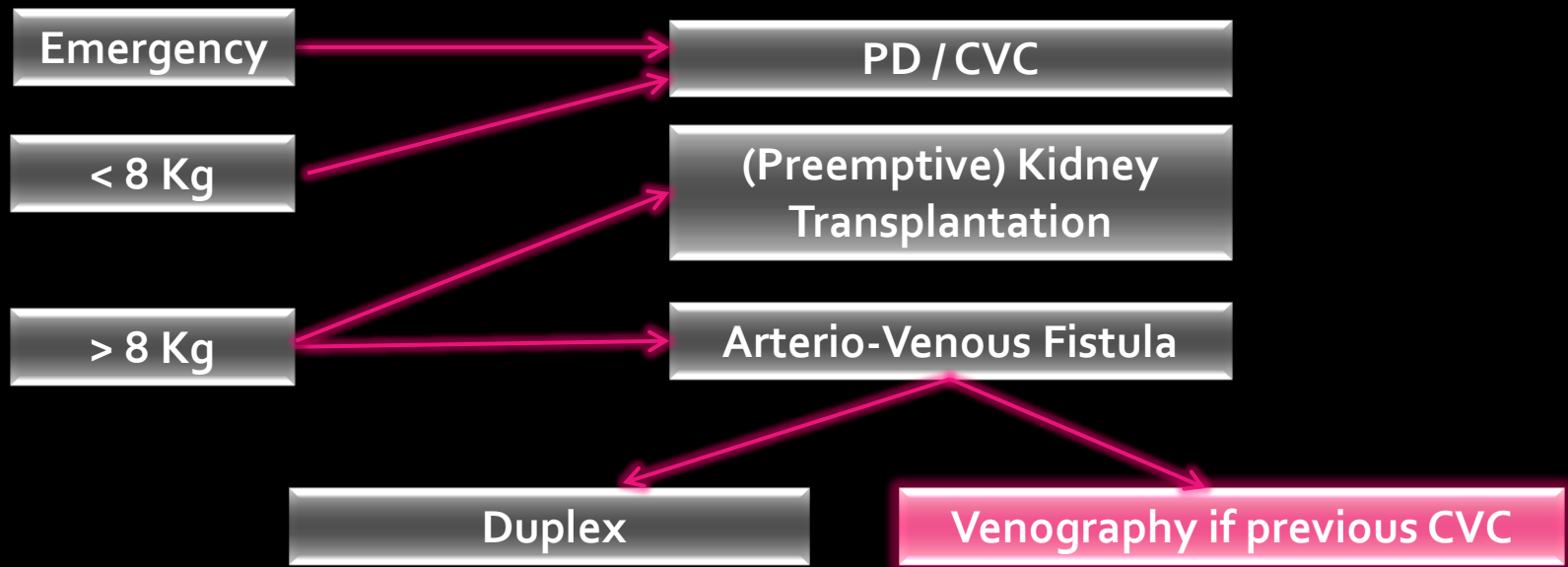


Percutaneous insertion - Duplex



Duplex

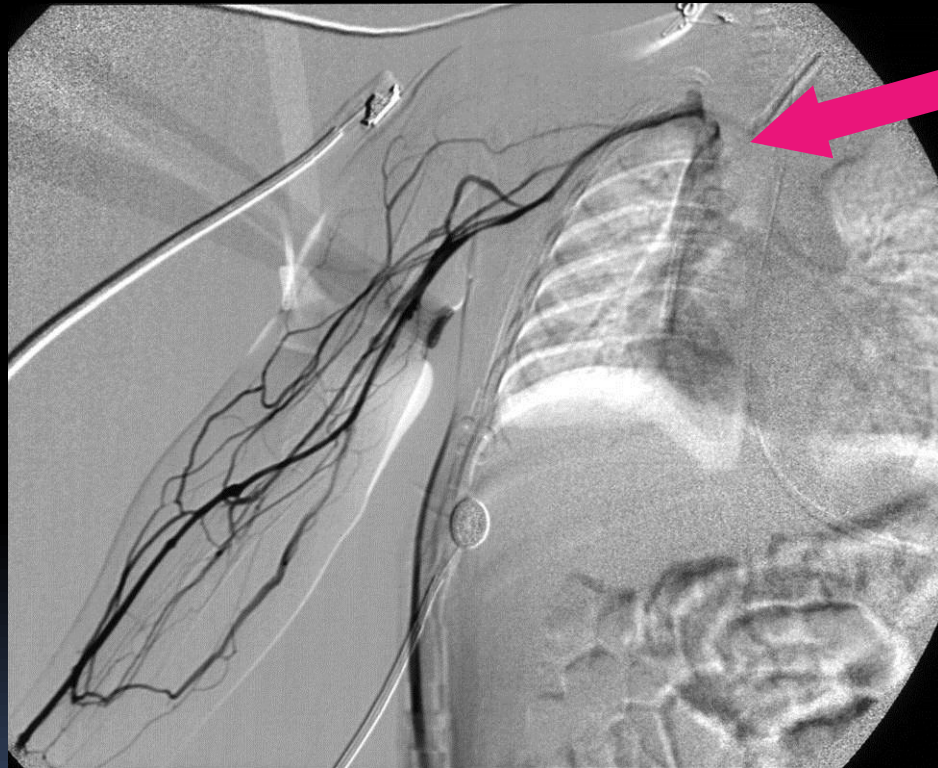




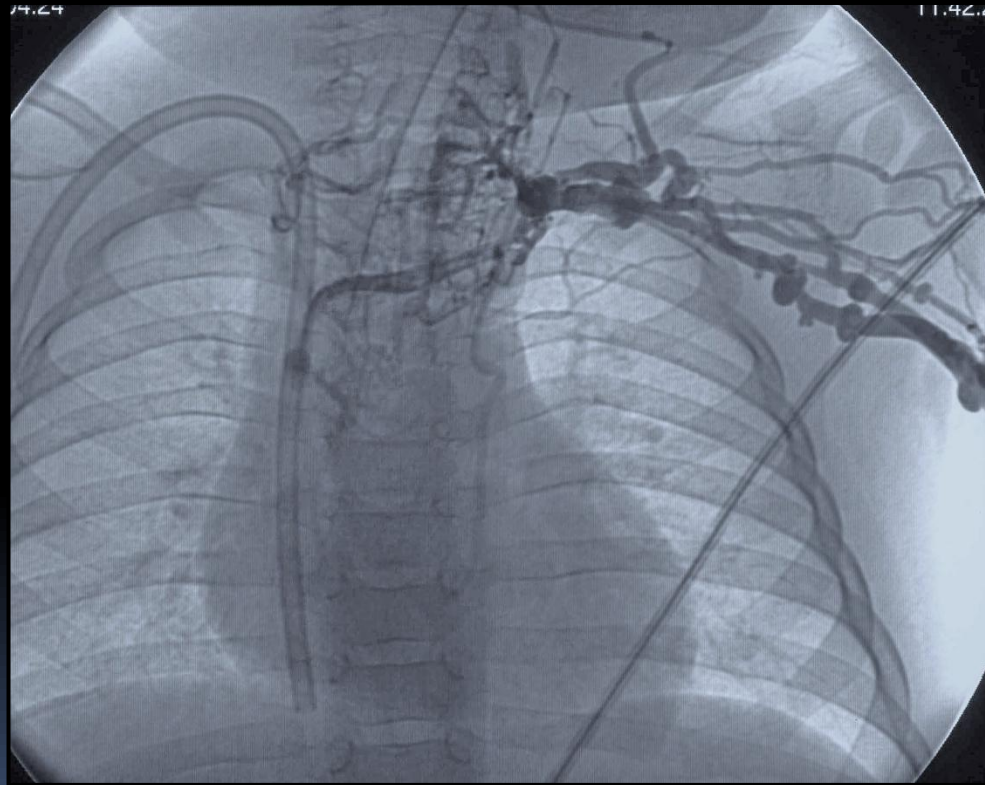
Normal Central Vein (8 kg)

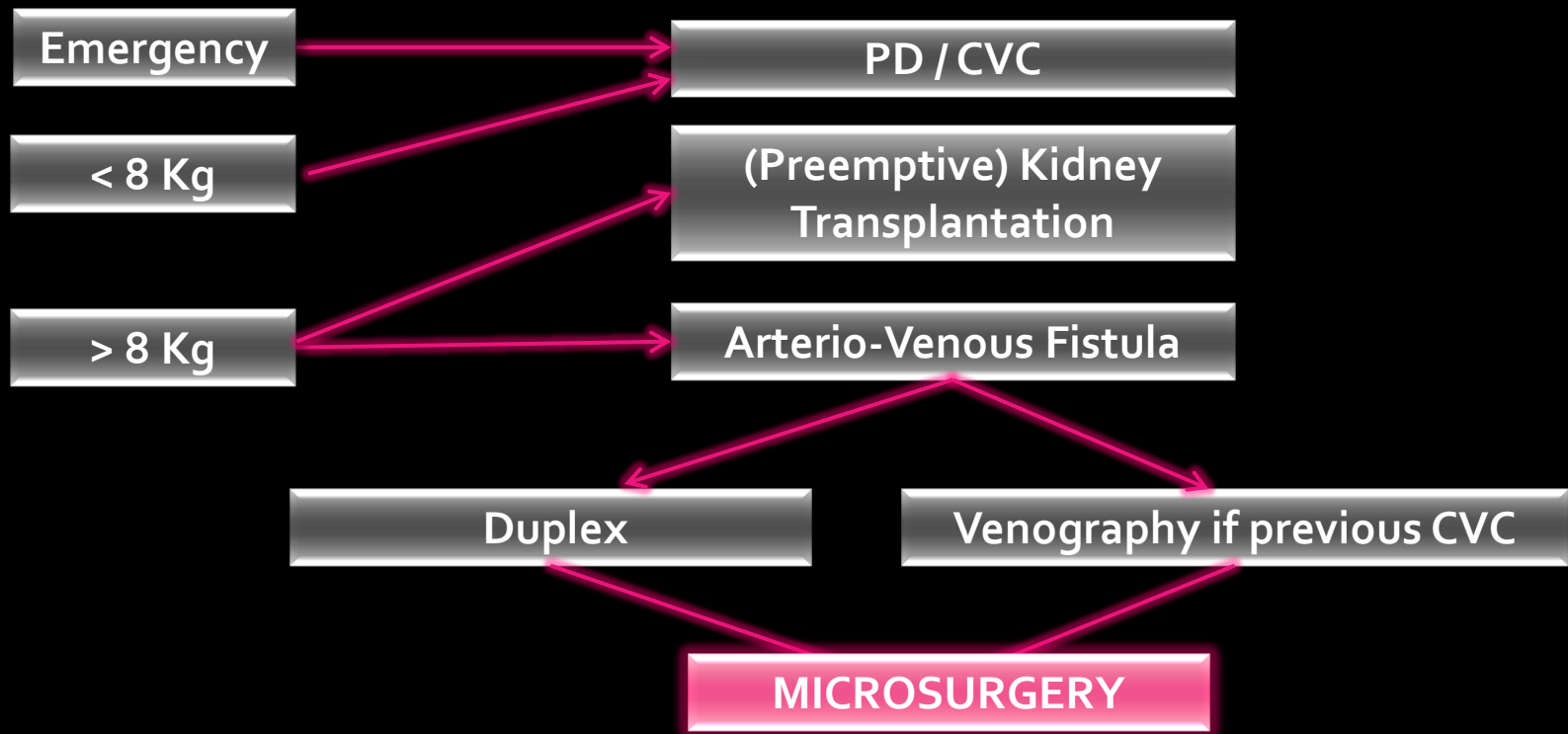


CVC + Central V. Stenosis (8 kg)



Bilateral ? Central V. Stenosis (8 Kg)

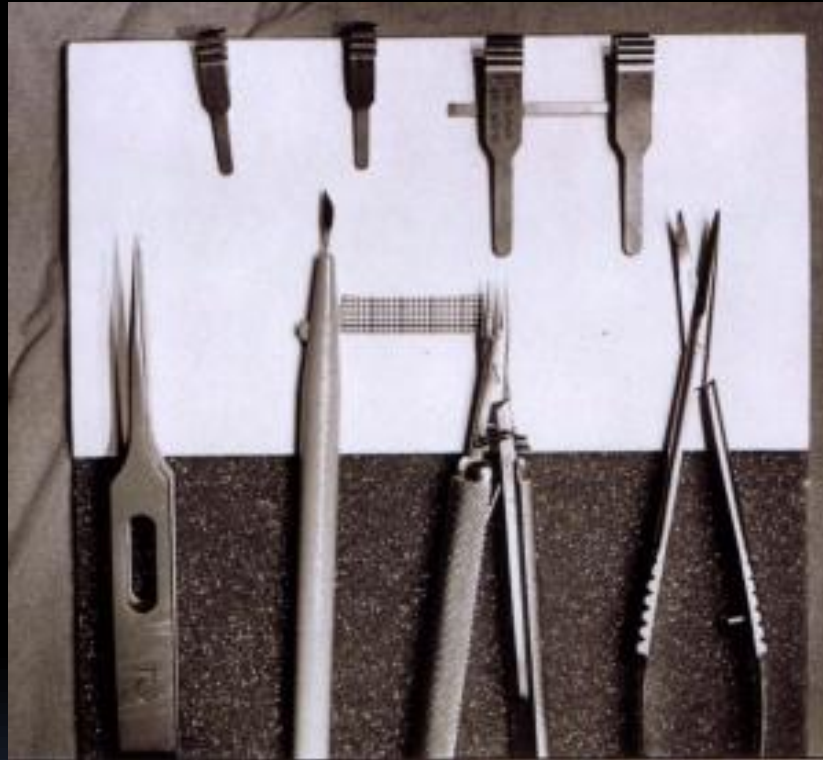




Surgical Microscope



Microsurgical Instruments

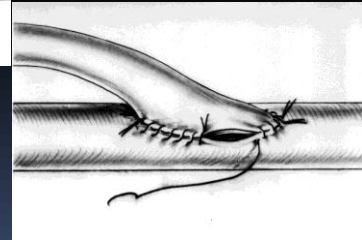
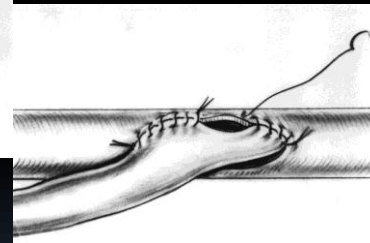
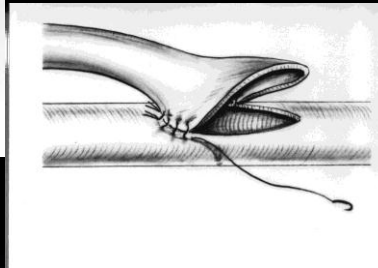
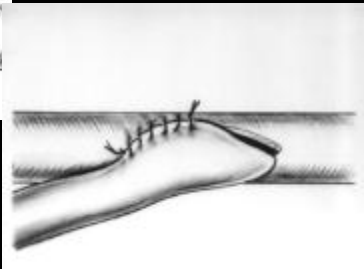
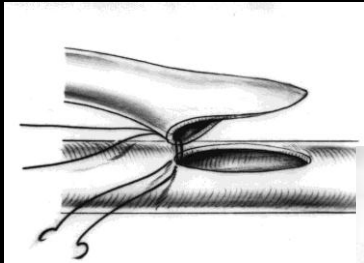


+ Preventive haemostasis vs Arterial Spasm

Micro-Clamps & Microsutures



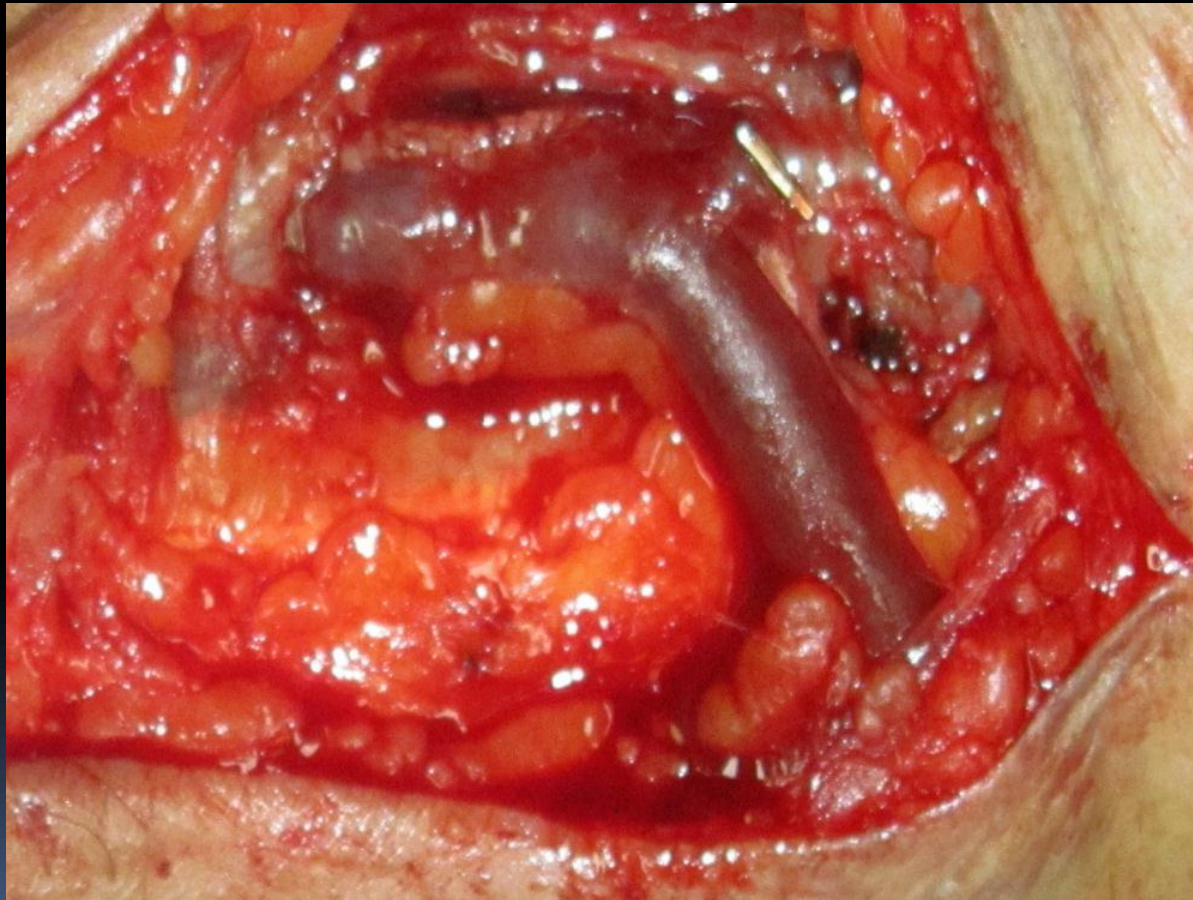
Side to End Anastomosis



Tourniquet

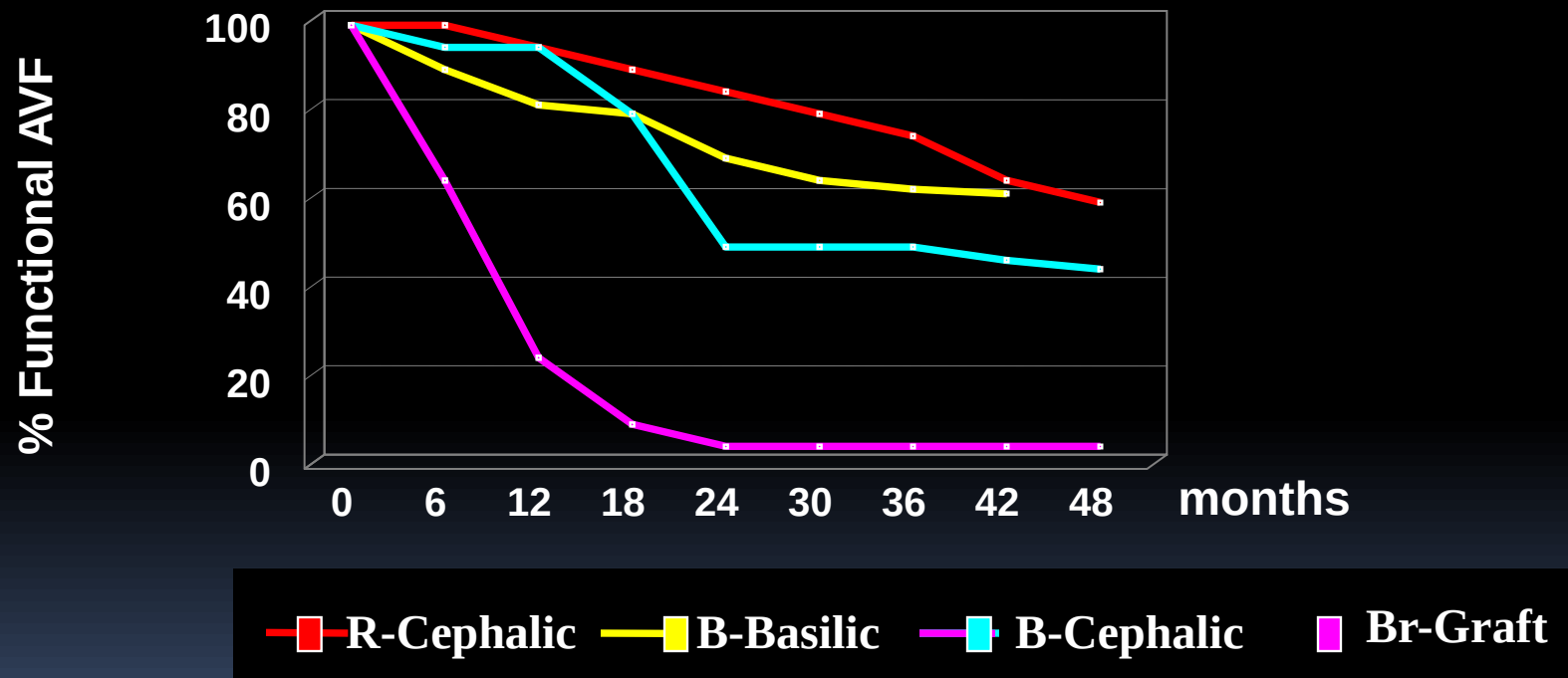


Release of Tourniquet



Bourquelot 1990

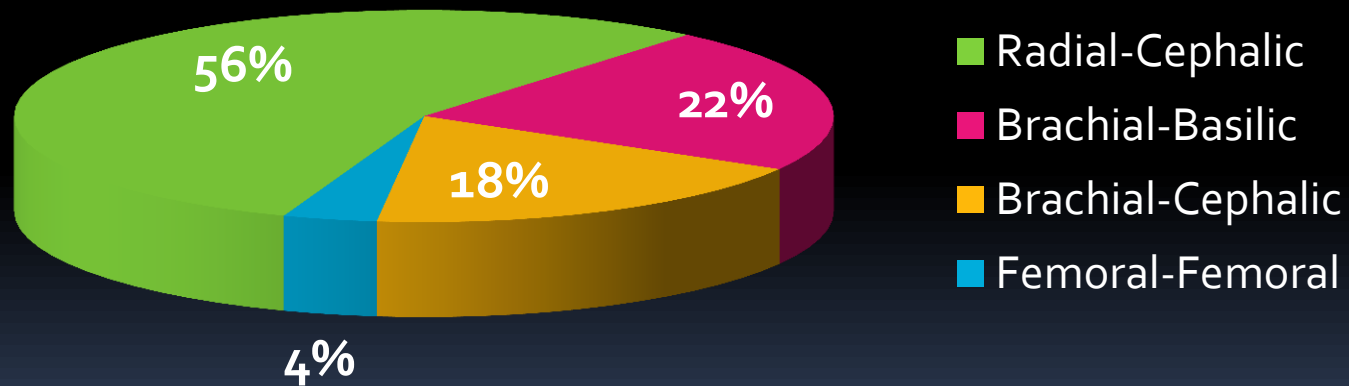
Microsurgery 434 AVF in 380 Children



Immediate patency : 96%

Bourquelot 2008

25 Children < 4 years



No graft

Microsurgery is mandatory for children AVF

	Lumsden	Sheth	Bourquelot	Sanabia	Bagolan
	USA		Europe		
Microsurgery	No	No	Yes	Yes	Yes
Publication	1994	2002	1990	1993	1998
N° accesses	61	52	434	86	112

Microsurgery is mandatory for children AVF

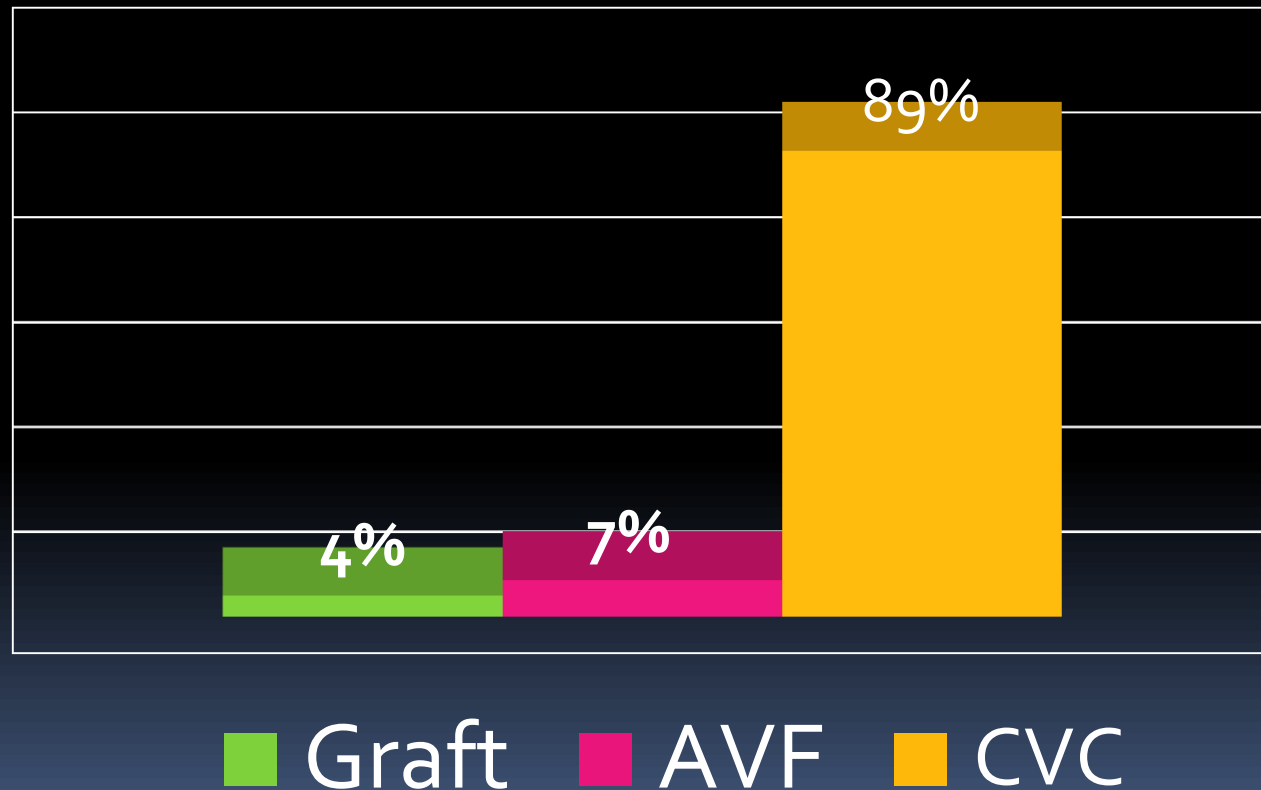
	Lumsden	Sheth	Bourquelot	Sanabia	Bagolan
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Graft vs AVF	76 %	54 %	7 %	14 %	0 %

Microsurgery is mandatory for children AVF

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N° accesses	61	52	434	86	112
Graft vs AVF	76 %	54 %	7 %	14 %	0 %
Non-matured AVF	30 %	33 %	10 %	10 %	5 %

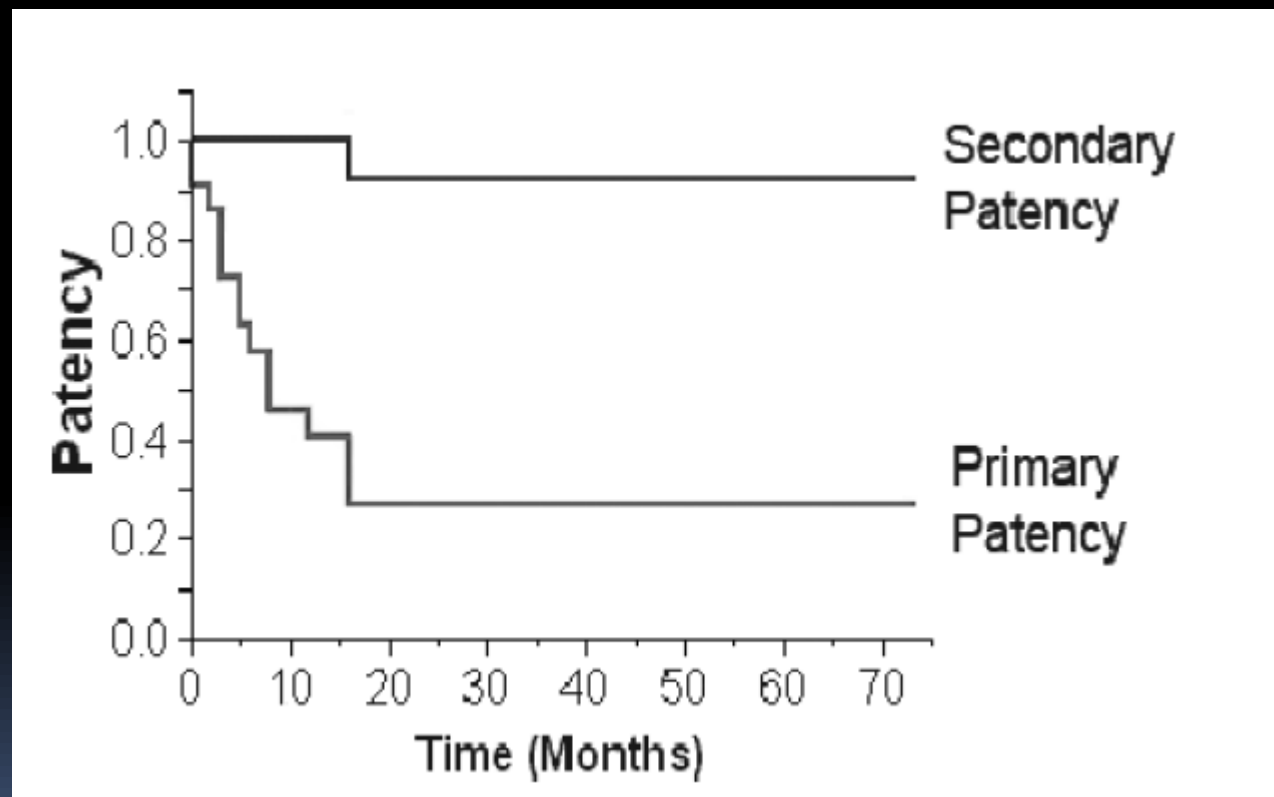
International Pediatric Fistula First Initiative: A Call to Action

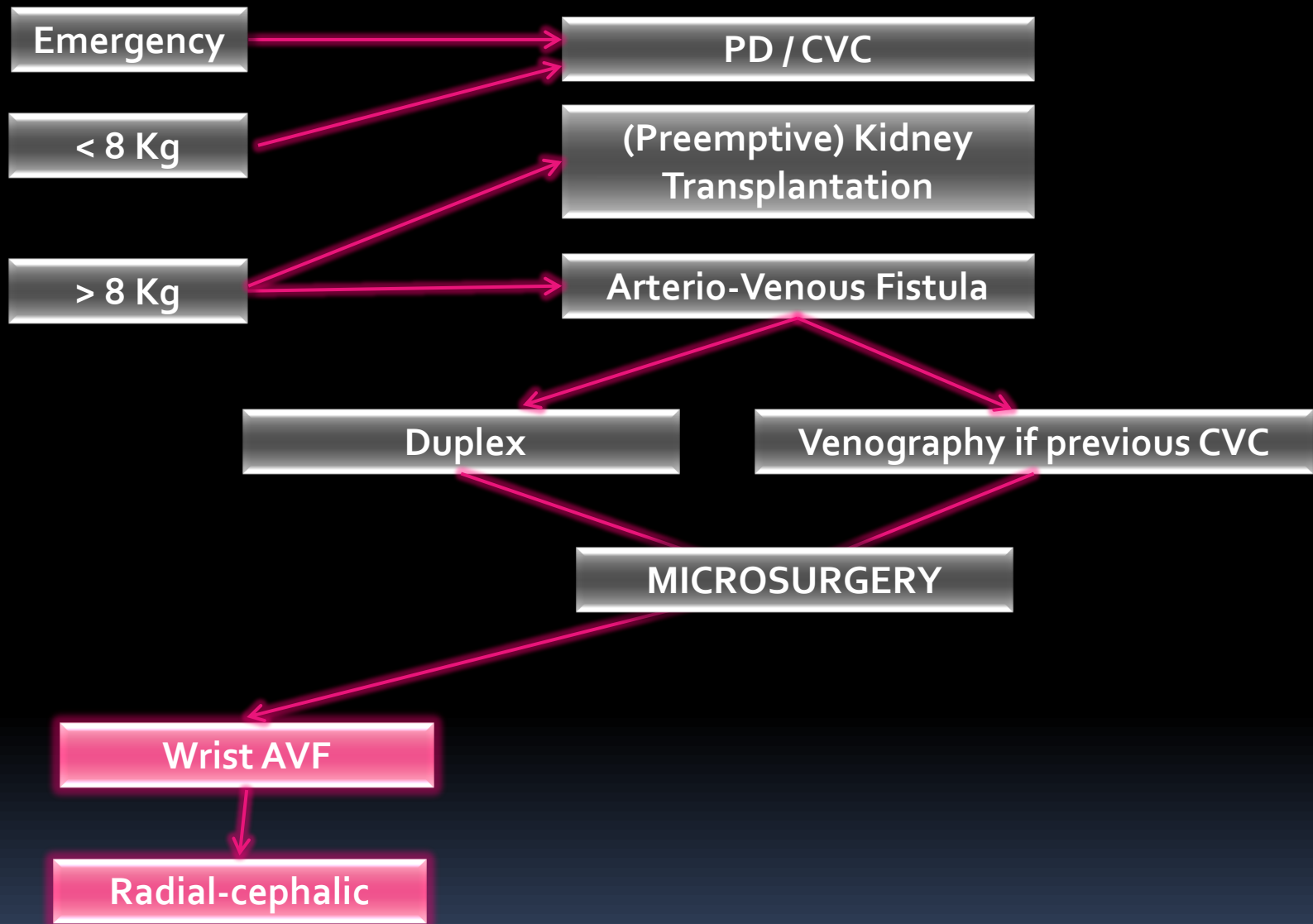
Chand and Valentini, Am J Kidney Dis 2008



Chand D. 2009

22 AVF in 33 children





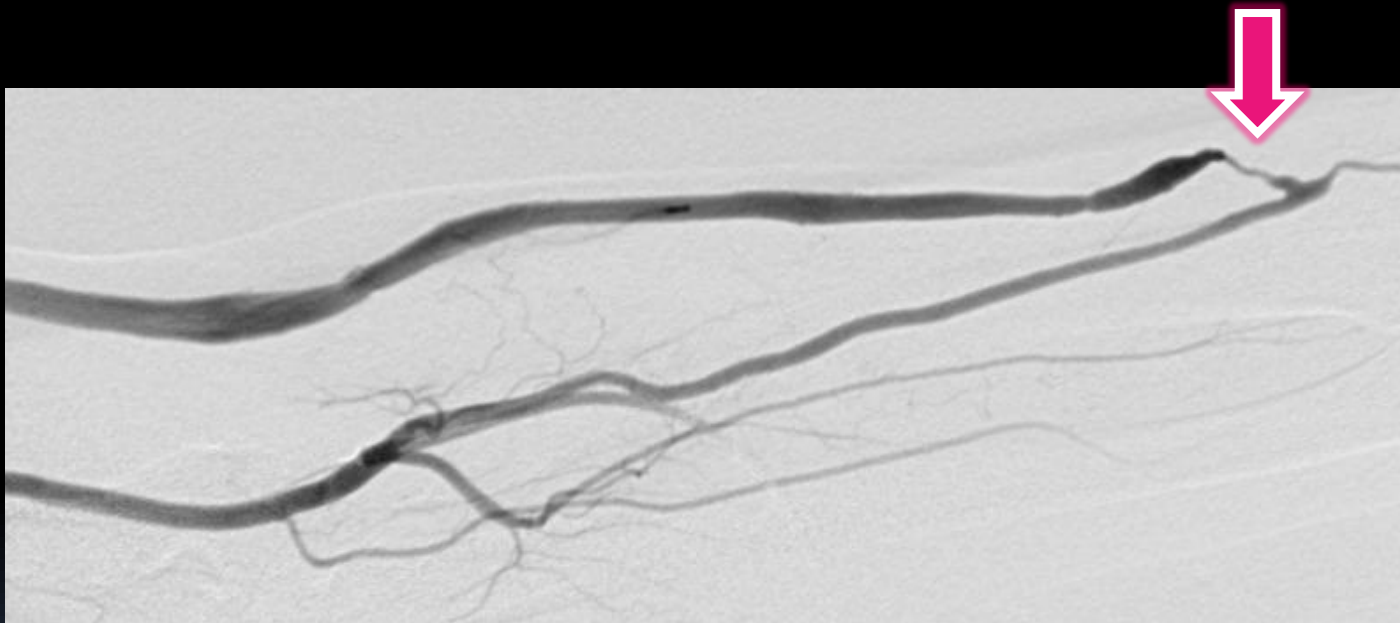
Radial-Cephalic AVF (8 kg)



- Hyperoxaluria
- PD at 1 year
- **Radial Cephalic AVF at 14 months (8 kg)**
- Hemodialysis at 2 years
- Kidney & Liver Transplantation at 3.5 years.

Non-maturation

Juxta-anastomosis stenosis



Re-anastomosis

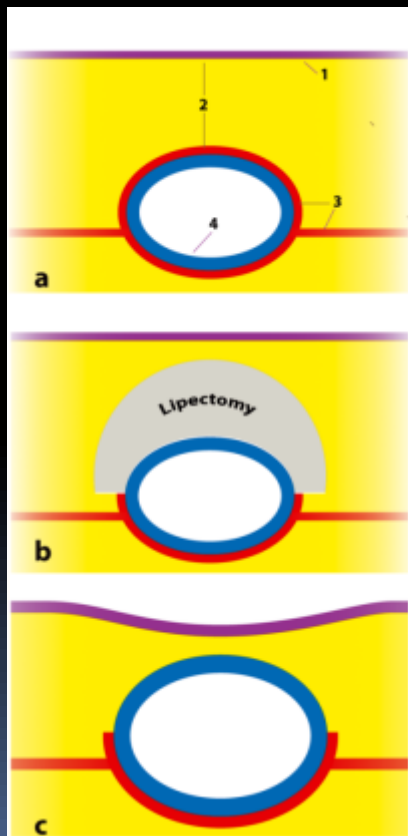
Flow reduction may be necessary



Lipectomy may be necessary

P Bourquelot et al. J Vasc Surg 2009

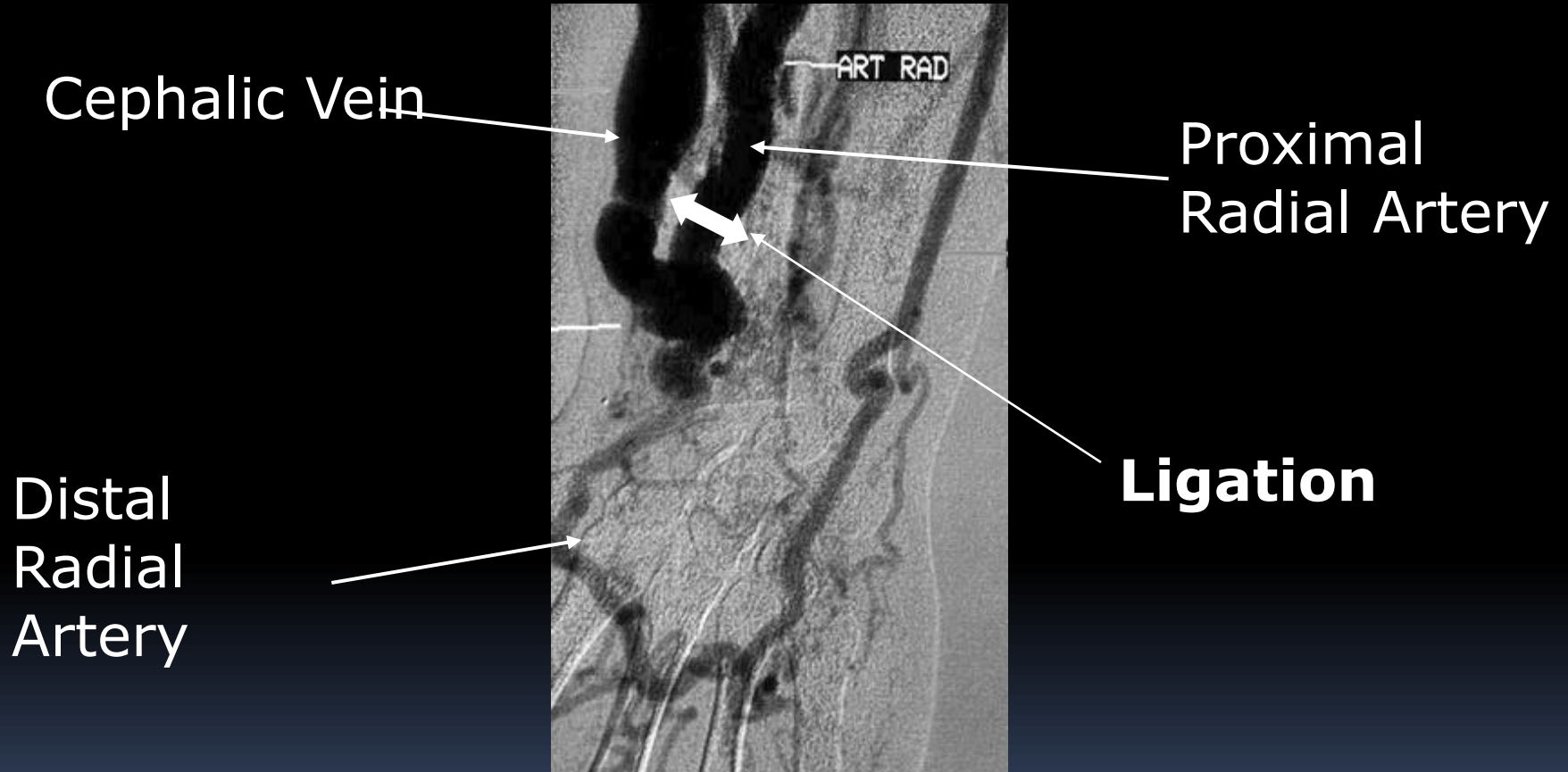
Operating diagram



9 years old child



Flow reduction: Proximal Radial Artery Ligation

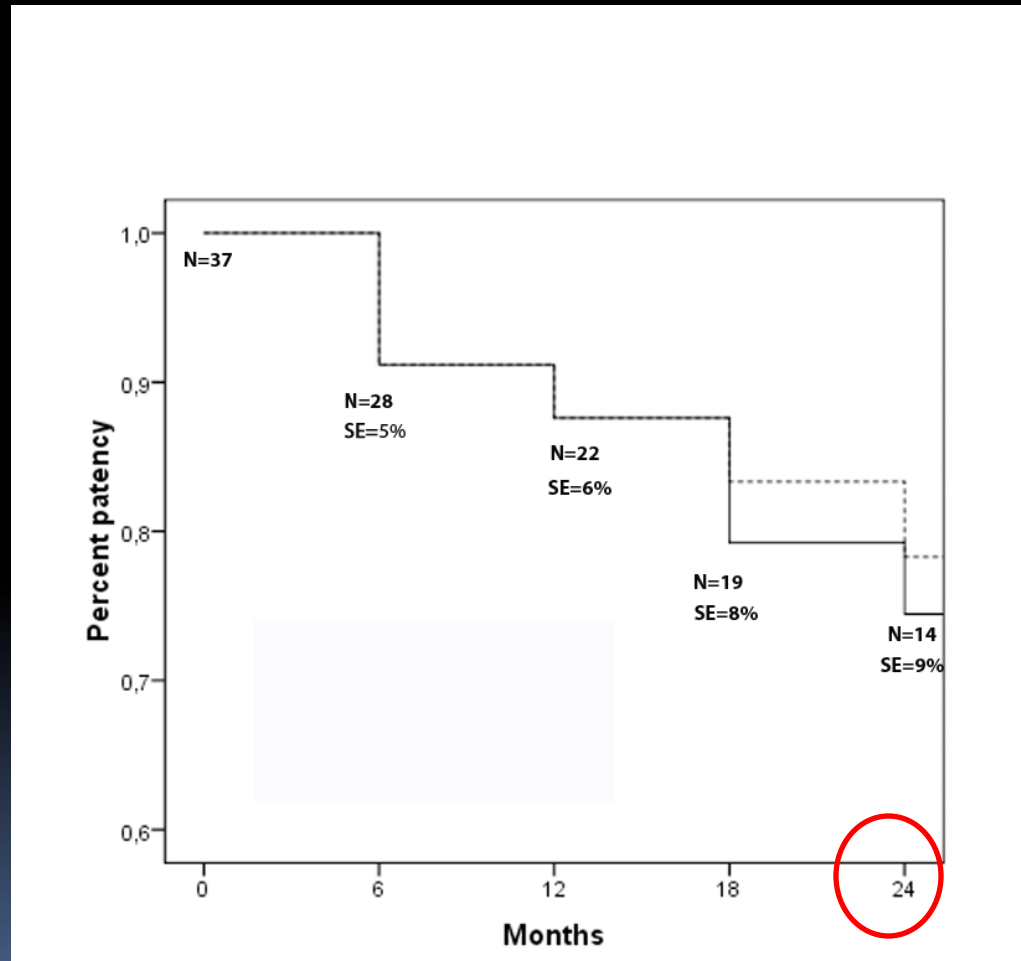


Proximal Radial Artery Ligation

P.Bourquelot et al. Eur J Vasc Endovasc Surg 2010

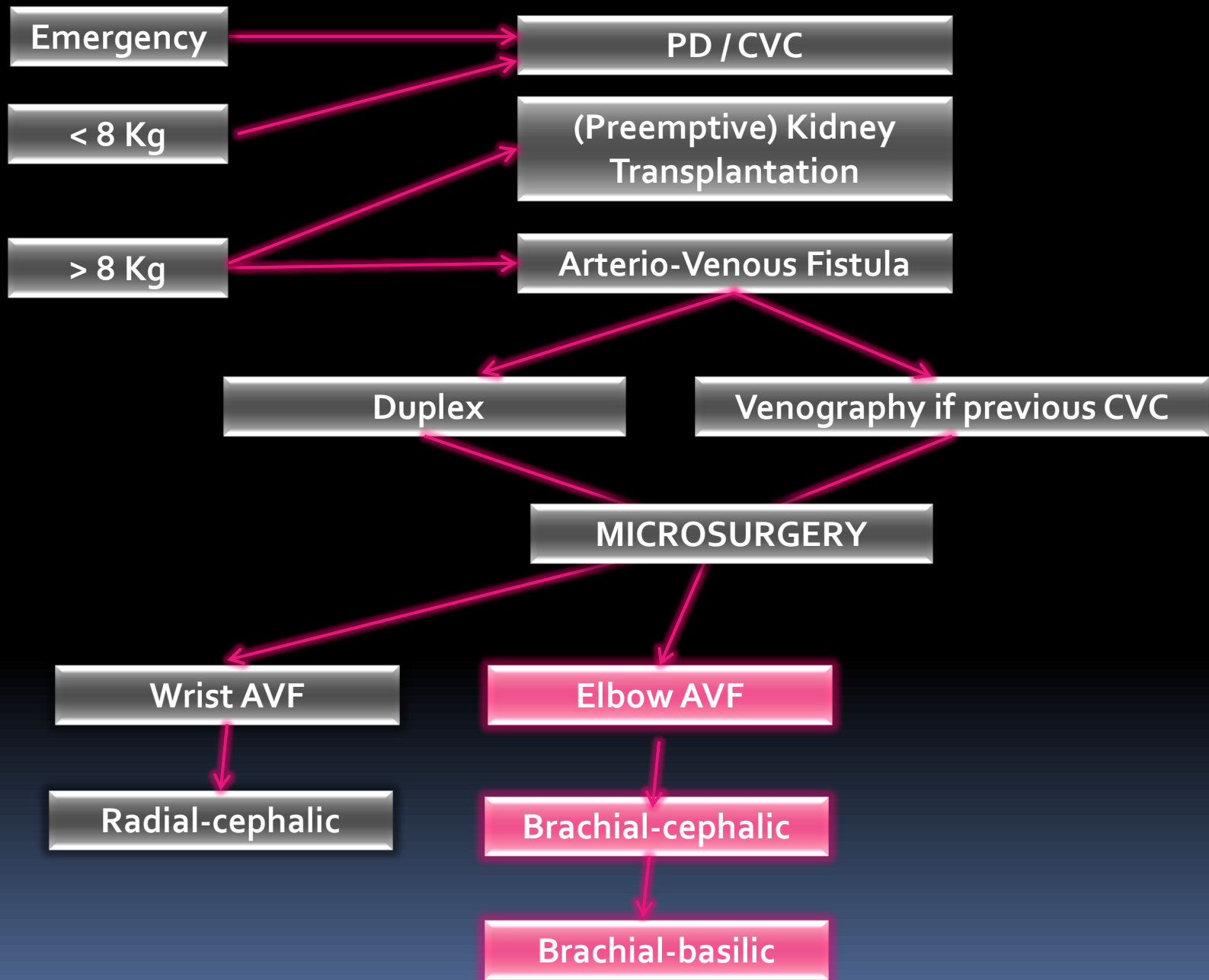
	7 Children	27 Adults
Flow	2.451 mL/min per 1.73 m ²	1.883 mL/min per 1.73 m ²
Reduction rates	50 % ± 11	53 % ± 16

Proximal Radial Artery Ligation Patency rates



78%

74%



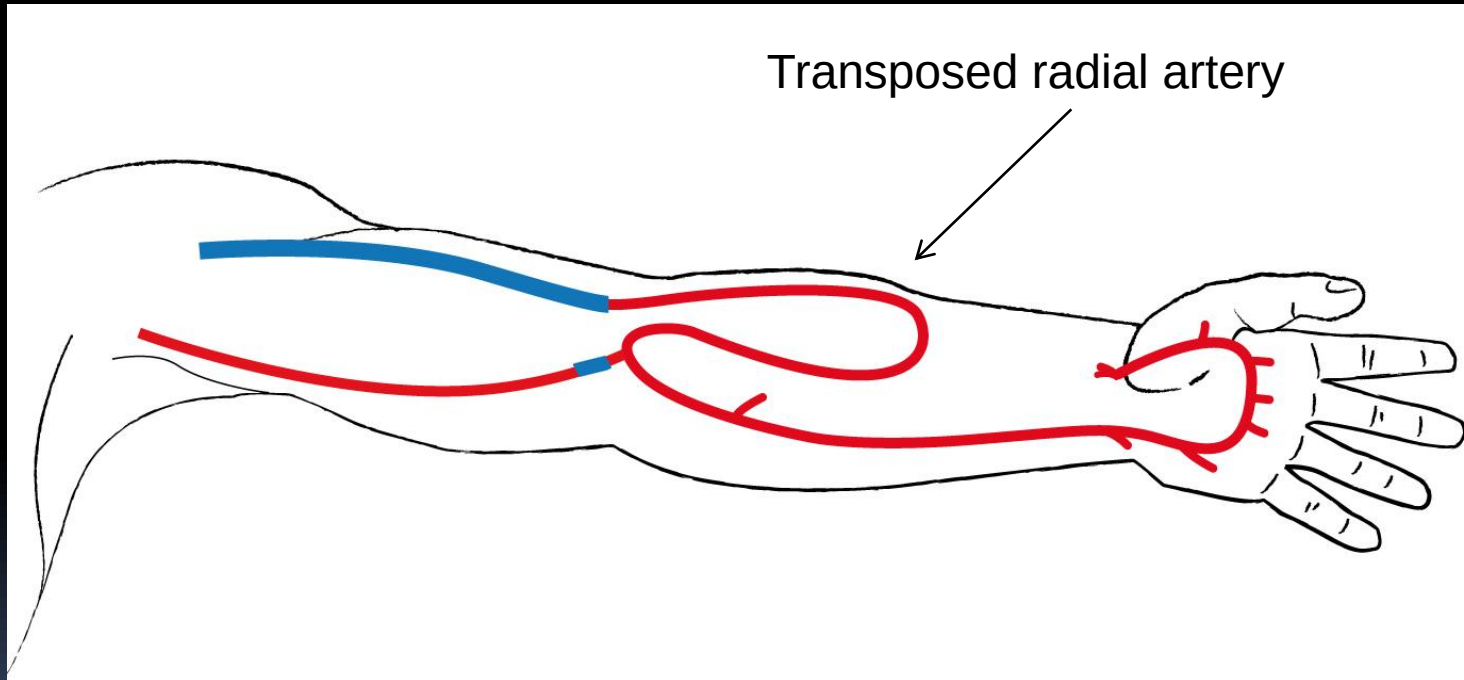
Brachial-Basilic AVF (8 kg)



- PD at 8 months
- CVC at 9 months
- Kidney T. at 2.5 years
- **Brachial-Basilic AVF**
 - created at 12 months
 - first used at 18 months
 - ligated at 3 years

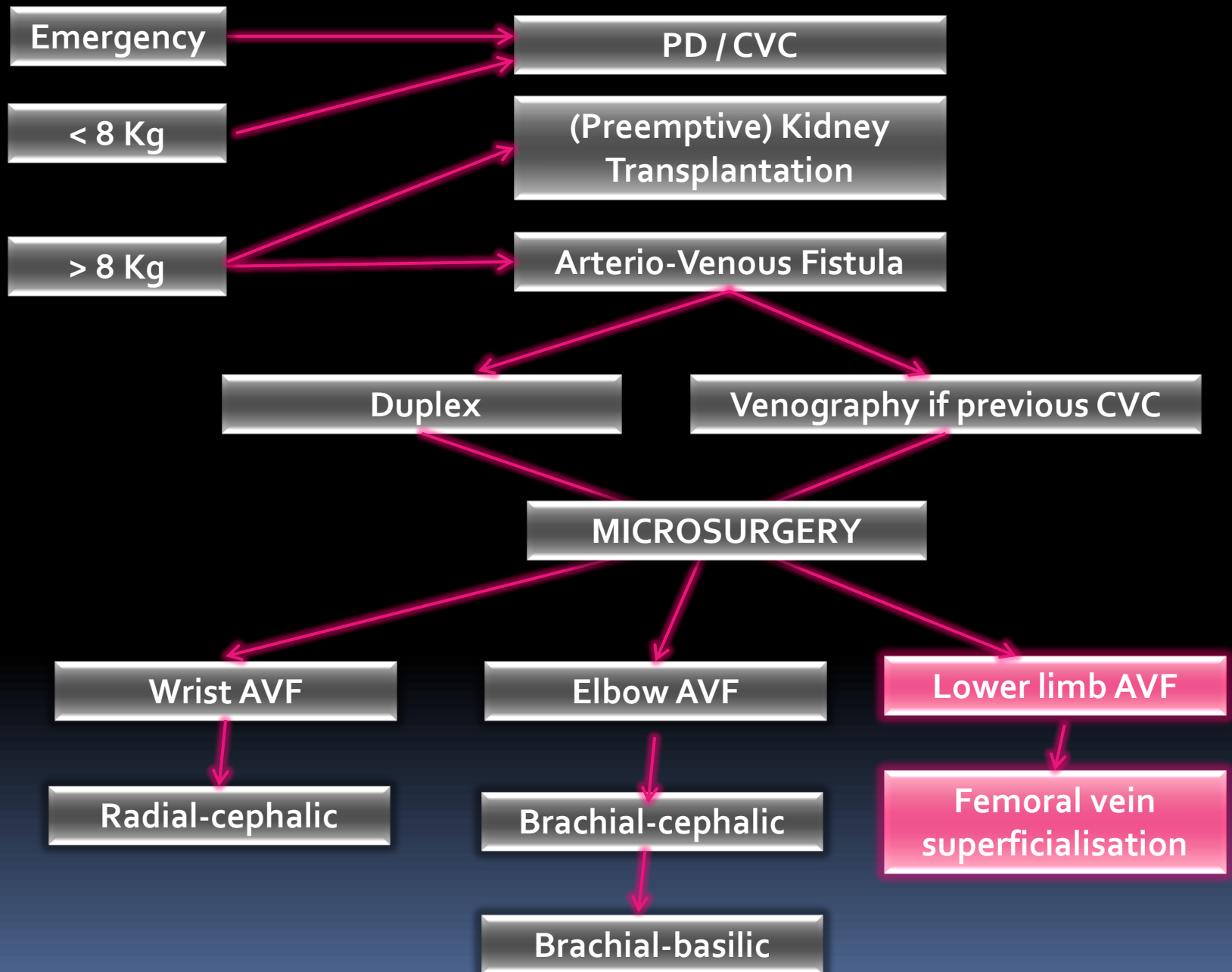
Transposition of the Radial Artery

P.Bourquelot et al. J Vasc Surg 2009



Transposition of the Radial Artery

	47 patients
Mean preop.flow	2.012 ± 312 mL/min per 1.73 m^2
Men reduction rate	$66\% \pm 14$



Femoral Vein Transposition



← 8 years old

7 years later →





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