

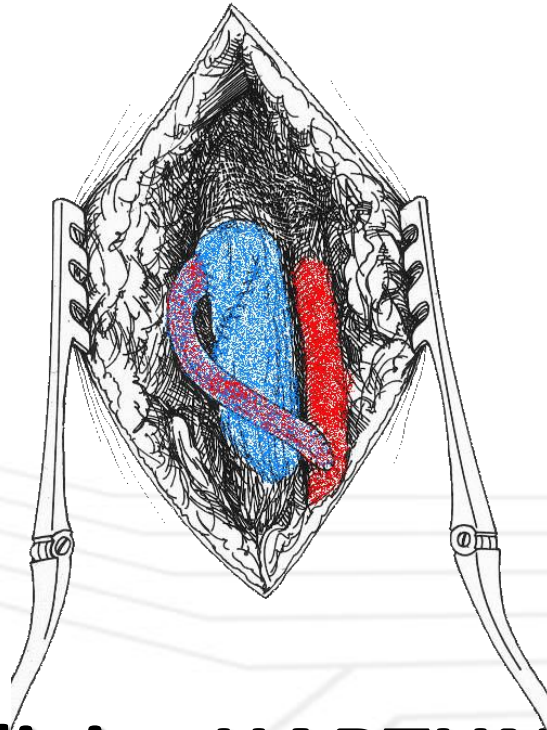
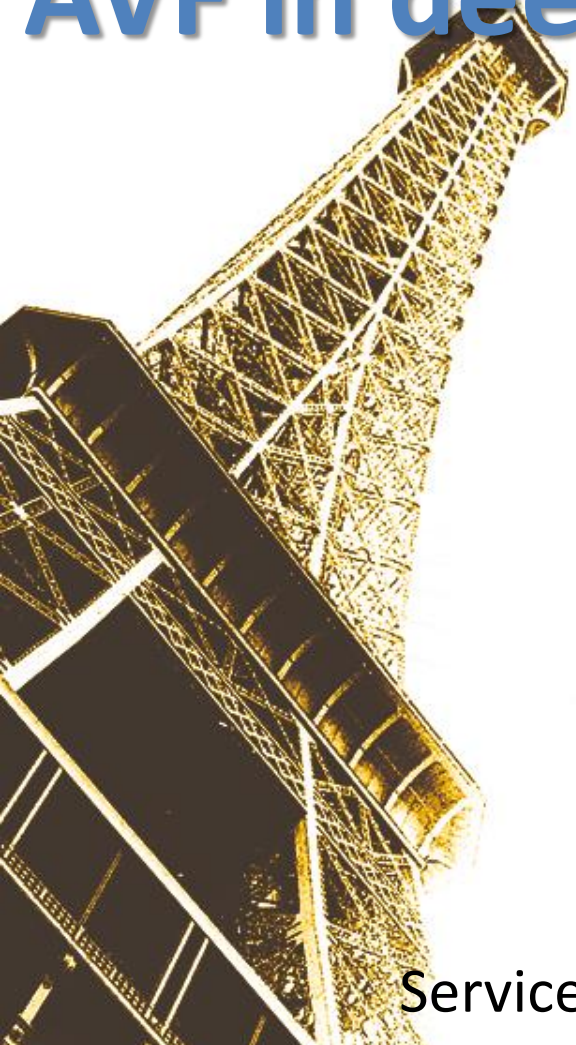
AVF in deep vein surgery

CONTROVERSES
ET ACTUALITÉS EN CHIRURGIE VASCULAIRE
CONTROVERSIES
& UPDATES
IN VASCULAR SURGERY



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Disclosure

Speaker name: **HARTUNG Olivier**

.....

- I have the following potential conflicts of interest to report:
- Consulting
- Employment in industry
- Shareholder in a healthcare company
- Owner of a healthcare company
- Other(s)
- I do not have any potential conflict of interest

AVF in deep vein surgery?



Introduction

- Kunlin : first description in 1953
- Used in surgical thrombectomy and bypass
- Stenting = first choice technique for femoro-iliac obstructive disease (Wittens EJVES 2015)

=> Is there still a place for AVF in venous reconstruction?

Why an AVF?

Advantages

- **Increase patency**
 - High flow in the veins/grafts/stents
 - Endothelium healing
 - Fight against obstruction
 - Decrease consequences of hematoma/lymphocela

Drawbacks

- Increase bleeding risk
- Restenosis
- Edema until closure
- Need to be closed

Increased patency

- **Surgical thrombectomy**

- 11% early rethrombosis vs 21-37% (Eklof 1997)

- **Bypass**

(C Table 1 Venous Thrombectomy with Arteriovenous Fistula: Long-Term Iliac Vein Patency

First Author, Year	n	Follow-Up (mos)	Patent Iliac Vein (%)
Plate, 1984 ¹²	31	6	76
Piquet, 1985 ¹⁵	57	39	80
Einarsson, 1986 ¹⁶	58	10	61
Vollmar, 1986 ¹⁷	93	53	82
Juhan, 1999 ¹⁸	150	102	84
Torngren, 1988 ¹⁹	54	19	54
Rasmussen, 1990 ²⁰	24	20	88
Eklof, 1996 ²¹	77	48	75
Neglen, 1991 ²²	34	24	88
Meissner, 1996 ²³	27	12	89
Pillny, 2003 ²⁴	97	70	90
Hartung, 2008 ²⁵	29	63	86
Holper, 2010 ²⁶	25	68	84
Total	756	55 (mean)	80 (mean)

- **Endophlebectomy**

- 5 with

FAV : 3

- 9 with

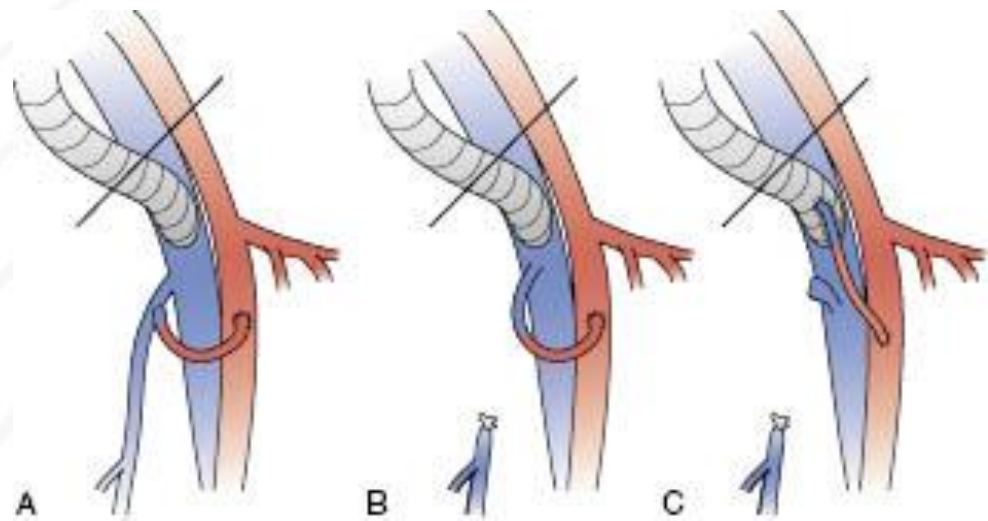
months

osis => ST +

osis at 3

Technical TIPS

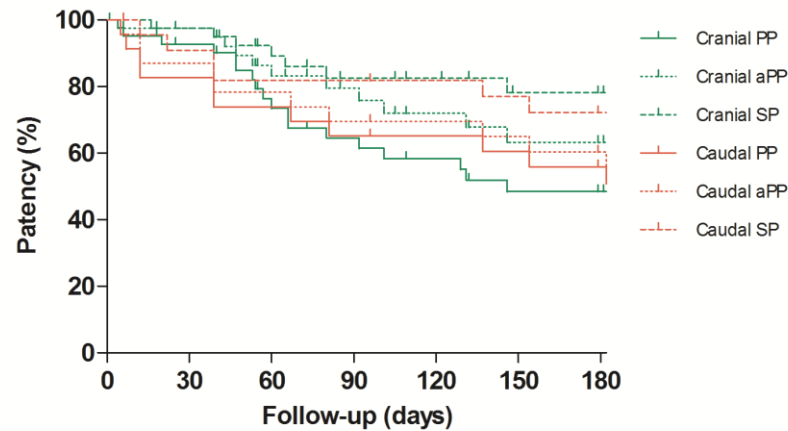
- Material : GSV, AASV or PTFE
- Location : from the SFA to the CFV or graft
- Diameter : ratio AVF/graft 0,375 (Menawatt JVS 1996)
- Straight or loop?
- Cranial or distal?



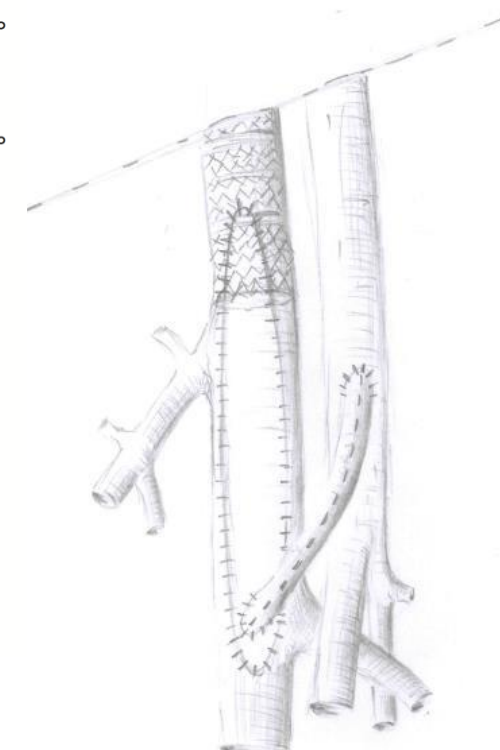
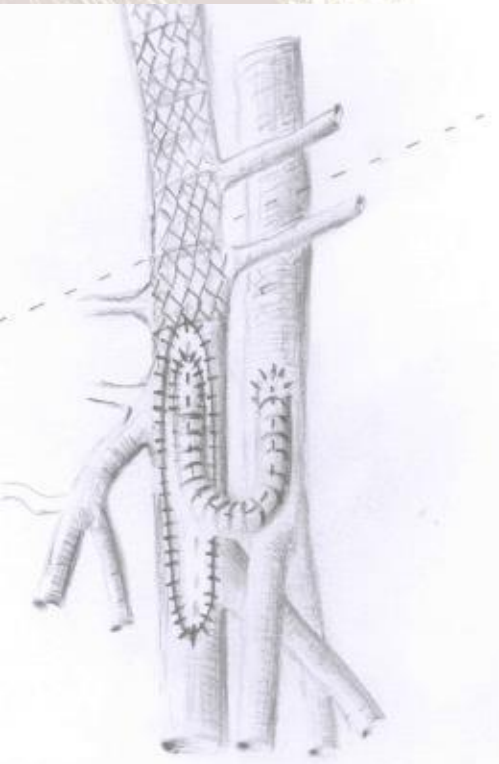
AVF geometry in endophlebectomy

Kurstjens, Phlebology 2015

- 42 cranial and 23 distal

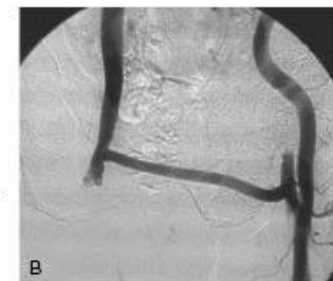
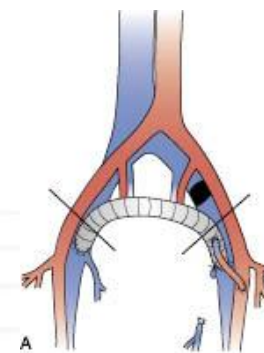


	0	30	60	90	120	150	180
Number at risk							
Cranial PP	42	37	26	22	19	15	14
Cranial aPP	42	37	27	22	18	15	14
Cranial SP	42	39	30	24	22	18	17
Caudal PP	23	21	19	16	15	14	12
Caudal aPP	23	22	20	17	16	15	13
Caudal SP	23	21	20	20	18	17	15



AVF closure : date

- **Surgical thrombectomy** : 6 weeks
- **Bypass** :
 - Vein : 6 weeks
 - PTFE : 6 months
- **Endophlebectomy**
 - Without stent : 6 weeks
 - With stent : ?



AVF closure : technique

Surgical

- **Invasive in recently operated groin under GA**
 - Risk of bleeding, wound complications...
- Need to stop oral anticoagulation
- Immediate closure (rethrombosis)
- Length of stay

Endovascular

- **Percutaneous, ambulatory procedure under LA**
 - Controlateral arterial approach
 - Amplatzer
- Without stopping oral anticoagulation
- Progressive closure (hours)

AVF closure with Amplatzer

SAN

ID: Anonymous

O

Study 1

08/02/2011

09:23:45

1 IMA 19 FRM 1

ARCADIS



AVF closure with Amplatzer

SAN
ID: Anonymous
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Study 1
08/02/2011
09:50:04
1 IMA 20 FRM 1

ARCADIS



Soustraction en radioscopie
Vascular/lower limb/Femoro-Poplitée
SINGLE PLANE

W: 1692
C: 3336

AVF closure with Amplatzer

SAN
ID: Anonymous
O
Study 1
08/02/2011
09:51:46
1 IMA 24 FRM 1

ARCADIS



Soustraction en radioscopie
Vascular/lower limb/Femoro-Poplitée
SINGLE PLANE

W: 1797
C: 3303

AVF closure with Amplatzer

SAN
ID: Anonymous
O
Study 1
08/02/2011
09:52:36
1 IMA 29 FRM 1

ARCADIS



Soustraction en radioscopie
Vascular/lower limb/Femoro-Poplitée
SINGLE PLANE

W: 2460
C: 3510

Results of AVF closure 1995-2015

	N	Complications	Median LOS
Surgical	35	1 septic rupture 1 SFA bypass 1 abscess	6 days (4-7)
Endovascular	24	1 reembolization 1 conversion	1 day (1-7)

Indications

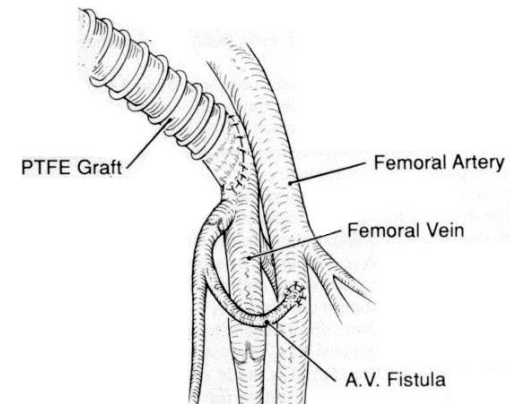
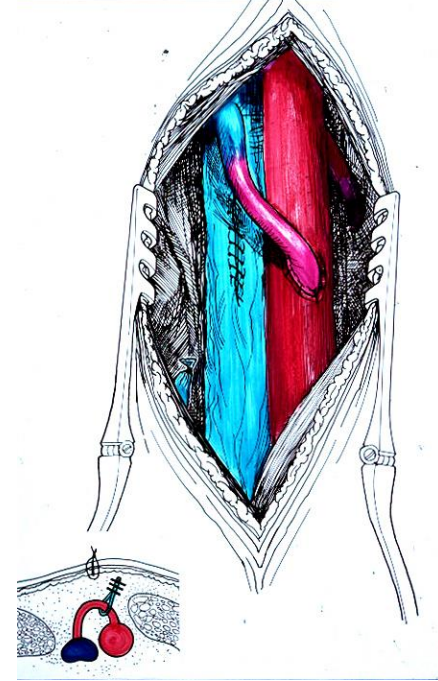
- All deep vein disease



or obstructive

Indications

- **Surgical venous thrombectomy**
- Deep vein open surgery for chronic obstructive disease
 - **Endophlebectomy +/- stenting**
 - Bypass



Conclusion

- **AVF is an important tool** while performing open surgery for obstructive femoro-iliac obstructive disease
 - Geometry?
 - Date of closure?
- Others recent adjuncts are important too
 - **Stents**
 - **Intermittent pneumatic compression**

