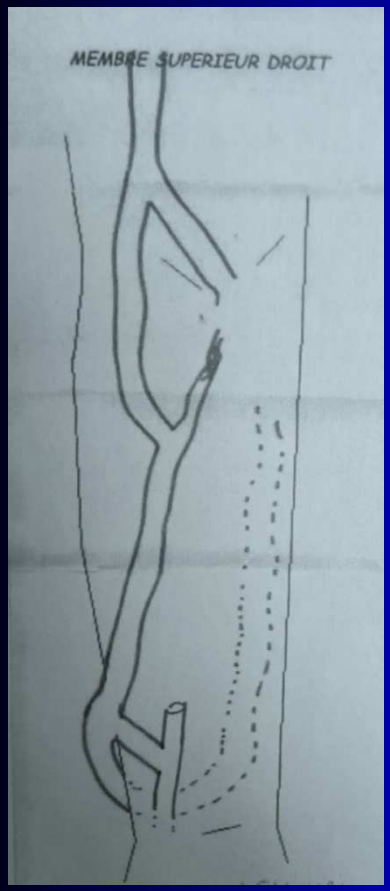
La ligature des collatérales dans le retard de maturation : une hérésie?



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Abords vasculaires pour hémodialyse .
27 ème Cours Congrès de la SFAV. 5-7 juin 2024 AJACCIO

Introduction

« Early AVF dysfunction is defined as the inability of the AVF to became suitable for hemodialysis therapy (maturation failure) or failure within 3 months of use »

Published success rates with aggressive management are greater than 90% of fistulae transformed to suitable access for dialysis

Introduction

Sténoses juxta ou post-anastomotiques +++

Sténoses de la veine de drainage (crosse céphalique) ++

Sténoses des veines centrales +/-

« Collatérales veineuses » ?

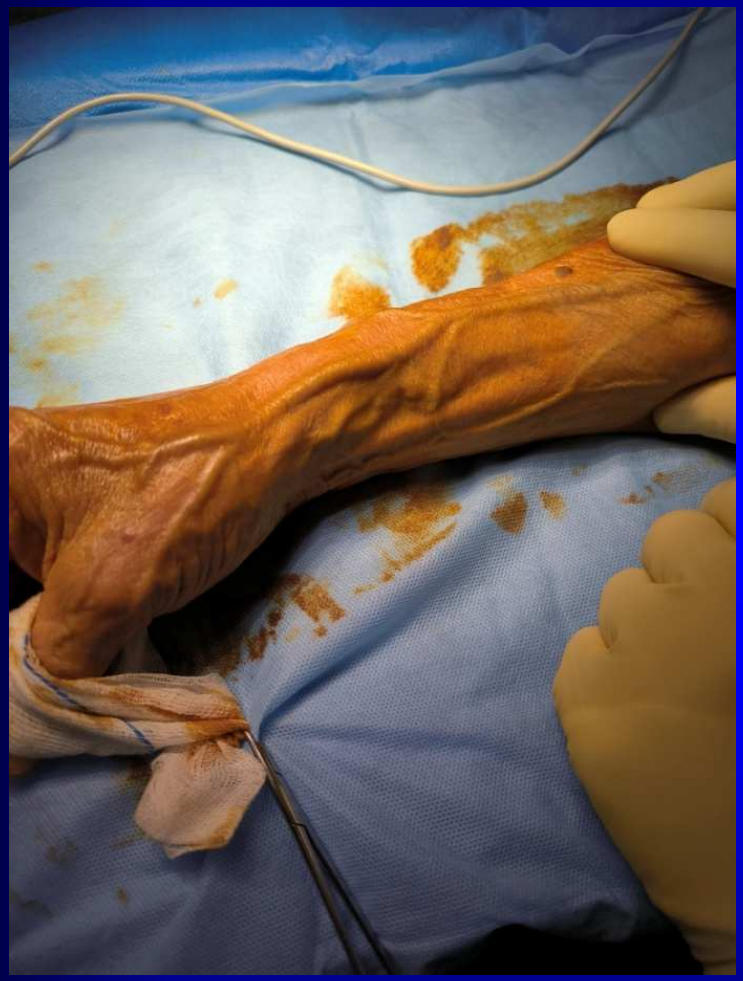
Sténoses artérielles proximales

Introduction

Définition :

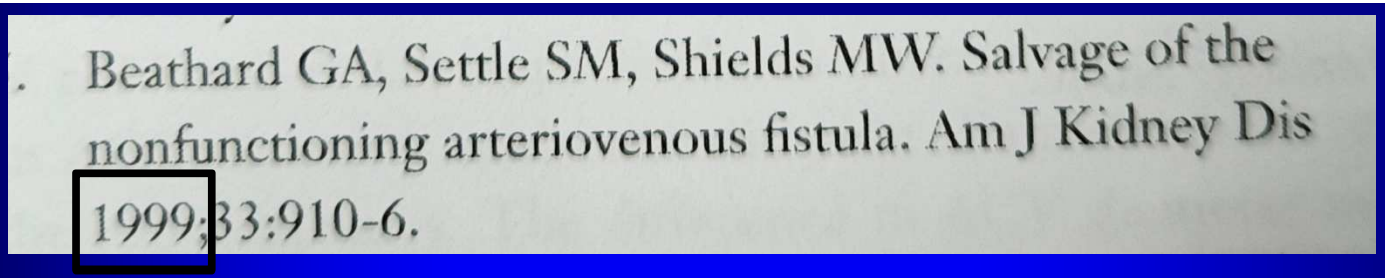
- **accessory veins**
- **accessory vein diameter**
- **large caliber accessory vein**
- **dominant accessory vein**
- **accessory cephalic vein RC-AVFs**

Introduction

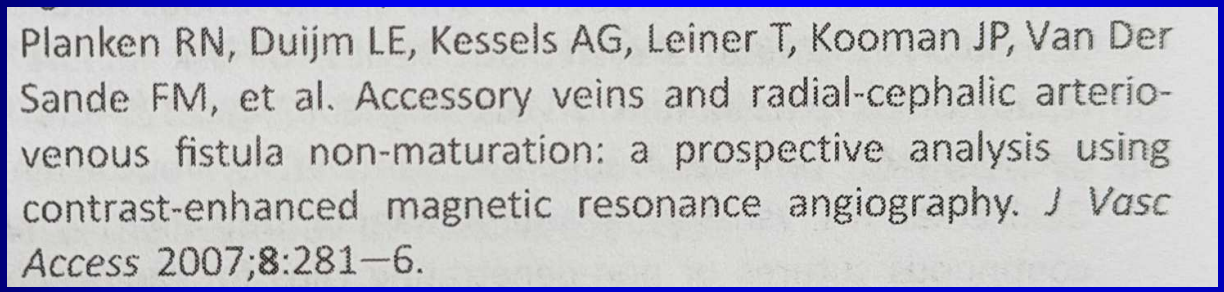


Peut-on prévoir quelle(s) collatérale (s) va (vont) être responsable(s) d'un retard de maturation ?

Discussion


. Beathard GA, Settle SM, Shields MW. Salvage of the nonfunctioning arteriovenous fistula. Am J Kidney Dis 1999;33:910-6.

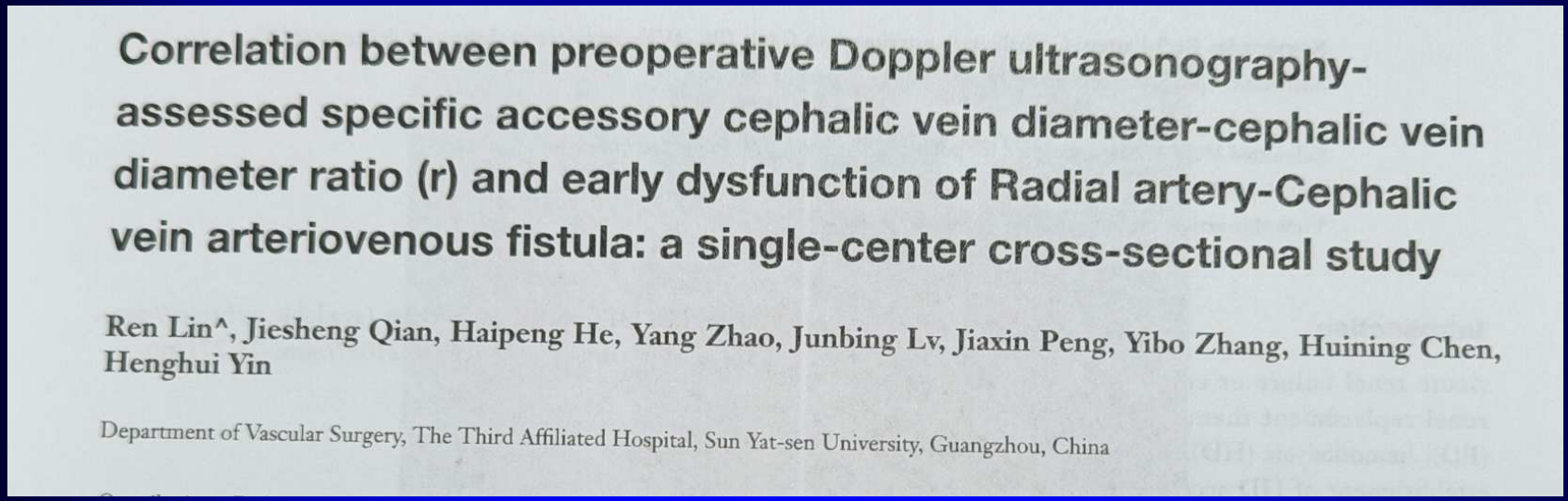
A group of 63 patients with non-maturated RC-AVFs (56) and BC-AVFs (7) had angiography with subsequent PTA (24) and accessory vein ligation (39)


Planken RN, Duijm LE, Kessels AG, Leiner T, Kooman JP, Van Der Sande FM, et al. Accessory veins and radial-cephalic arterio-venous fistula non-maturation: a prospective analysis using contrast-enhanced magnetic resonance angiography. *J Vasc Access* 2007;8:281–6.

Contrast enhanced magnetic resonance angiography : location and calibre of accessory veins was determined

Non-maturation : 10 RC-AVFs

Discussion



Correlation between preoperative Doppler ultrasonography-assessed specific accessory cephalic vein diameter-cephalic vein diameter ratio (r) and early dysfunction of Radial artery-Cephalic vein arteriovenous fistula: a single-center cross-sectional study

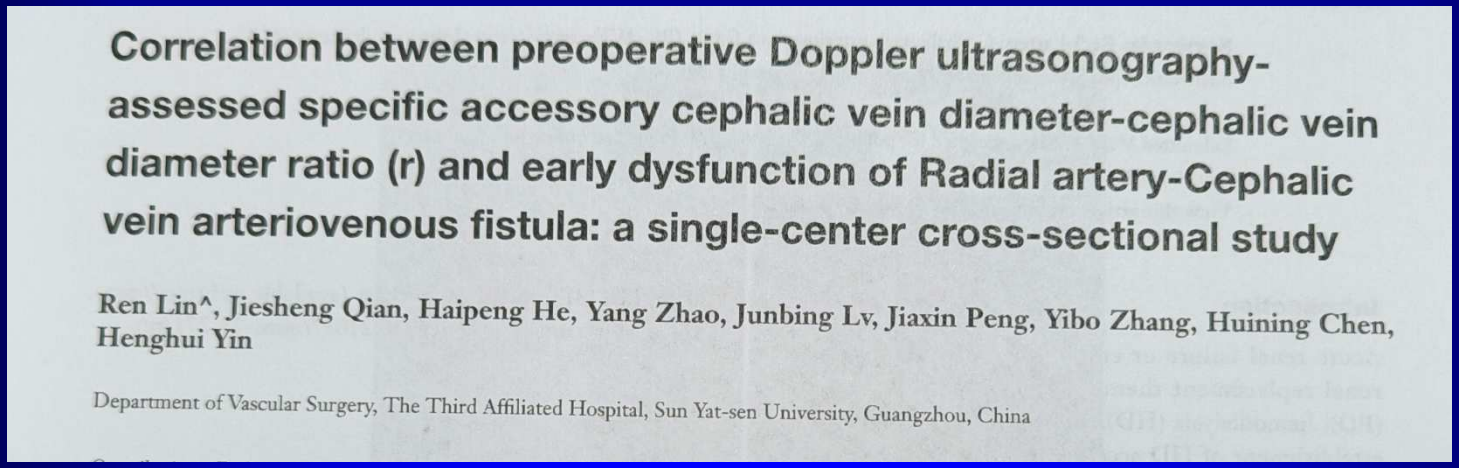
Ren Lin^, Jiesheng Qian, Haipeng He, Yang Zhao, Junbing Lv, Jiaxin Peng, Yibo Zhang, Huining Chen, Henghui Yin

Department of Vascular Surgery, The Third Affiliated Hospital, Sun Yat-sen University, Guangzhou, China

« Venous stenosis or the presence of an accessory cephalic vein are the two primary cause of early AVG dysfunction in the wrist

« However , a consensus has not been reached on the timing of accessory cephalic vein ligation »

Discussion



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Conclusions :

Preoperative DUS suggested a correlation between R $\geq$ 0.8 and early immaturity of RC-AVFs

Concurrent intraoperative accessory cephalic vein ligation should be carried out when preoperative R is $\geq$ 0.8 , as it may reduce the early dysfunction of RC-AVF

Discussion

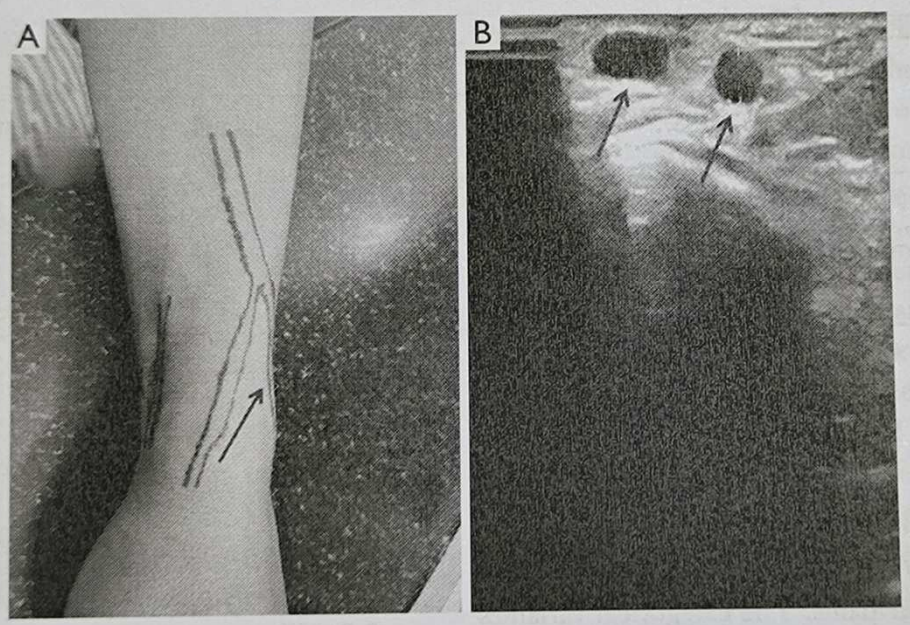


Figure 1 The relative position of the ACV and the cephalic vein on the body surface and Doppler ultrasonography. (A) The red arrow indicates the body surface where the ACV drains into the cephalic vein; (B) the red arrows indicate the position of the cephalic vein (left) and the ACV (right) on the Doppler ultrasonography. ACV, accessory cephalic vein.

Quelle (s) collatérale(s) faut-il lier?

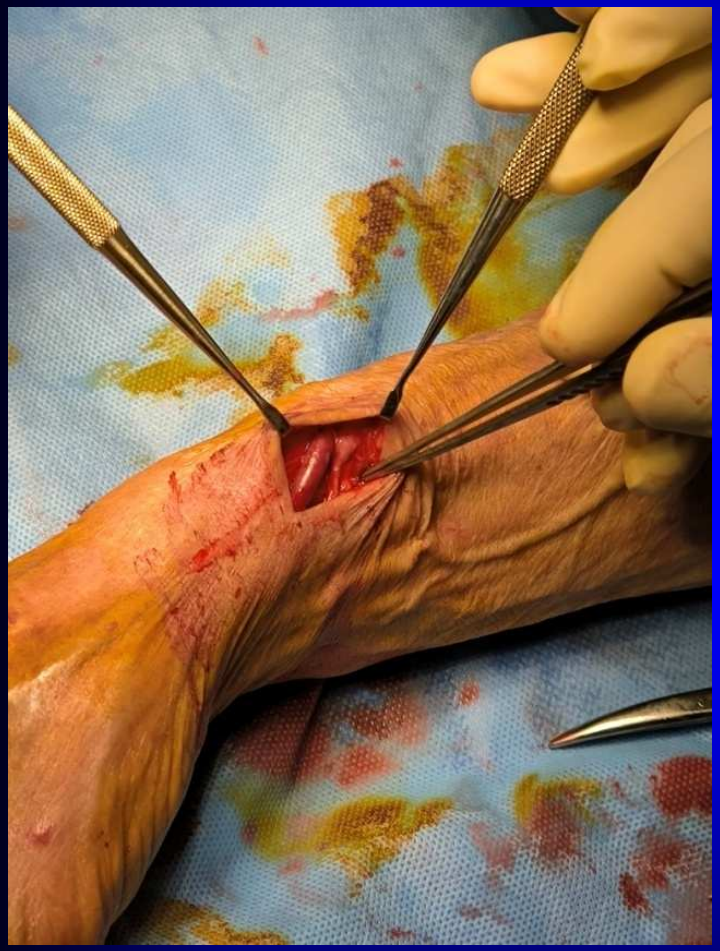
Discussion

Planken RN, Duijm LE, Kessels AG, Leiner T, Kooman JP, Van Der Sande FM, et al. Accessory veins and radial-cephalic arterio-venous fistula non-maturation: a prospective analysis using contrast-enhanced magnetic resonance angiography. *J Vasc Access* 2007;8:281–6.

The presence of large caliber accessory veins was the only significant predictor of non-maturation(p=.01)

Pre-operative detected accessory veins with a diameter > 70% of the cephalic vein diameter had a sensitivity, specificity, PPV, PPN, of 80%, 100%, 100% et 91% for prediction of AVF non-maturation

Quelle (s) collatérale(s) faut-il lier?



Discussion

Engstrom BI, Grimm LJ, Ronald J, Smith TP, Kim CY. Accessory veins in nonmaturing autogenous arteriovenous fistulae: analysis of anatomic features and impact on fistula maturation. *Semin Dial* 2015;28:E30–4.

Fistulogram of 145 patients with non-maturing AVFs

49 (34%) : stenosis without any accessory veins

76 (52%) : stenosis with one or more accessory veins

20 (14%) : accessory vein without concurrent stenosis

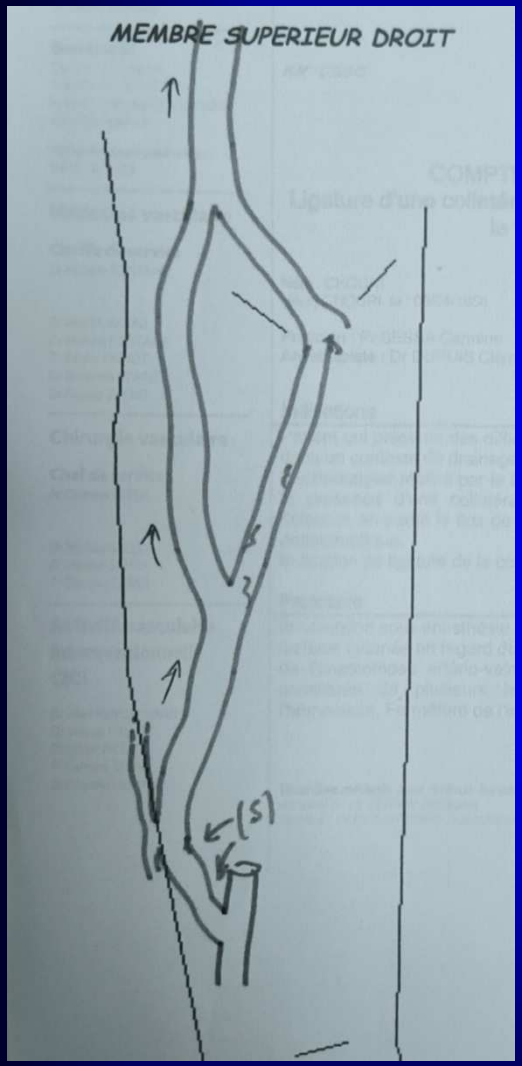
Discussion

Engstrom BI, Grimm LJ, Ronald J, Smith TP, Kim CY. Accessory veins in nonmaturing autogenous arteriovenous fistulae: analysis of anatomic features and impact on fistula maturation. *Semin Dial* 2015;28:E30–4.

Accessory vein size was not correlated with maturation rates

The majority of non-maturation fistulae with accessory veins had a coexisting stenosis

Discussion


MEMBRE SUPERIEUR DROIT
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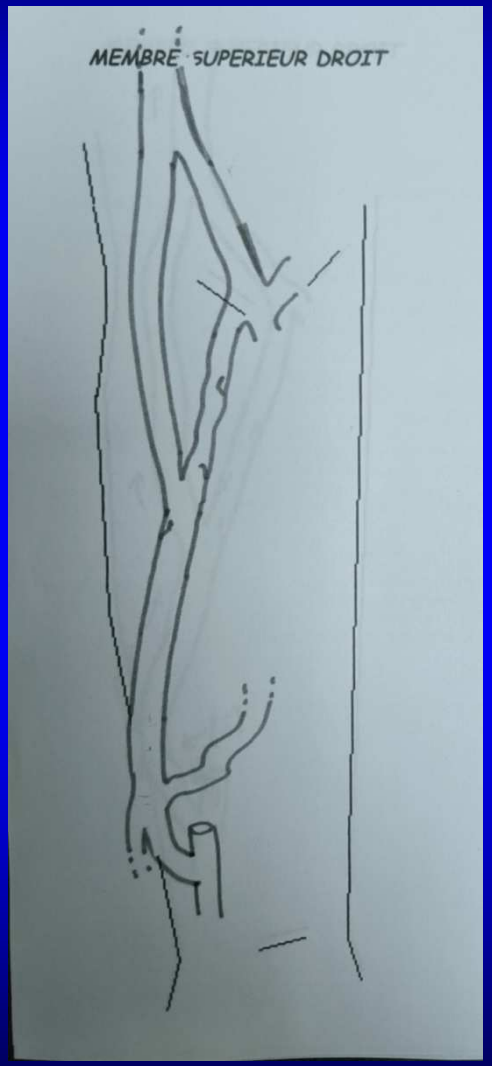
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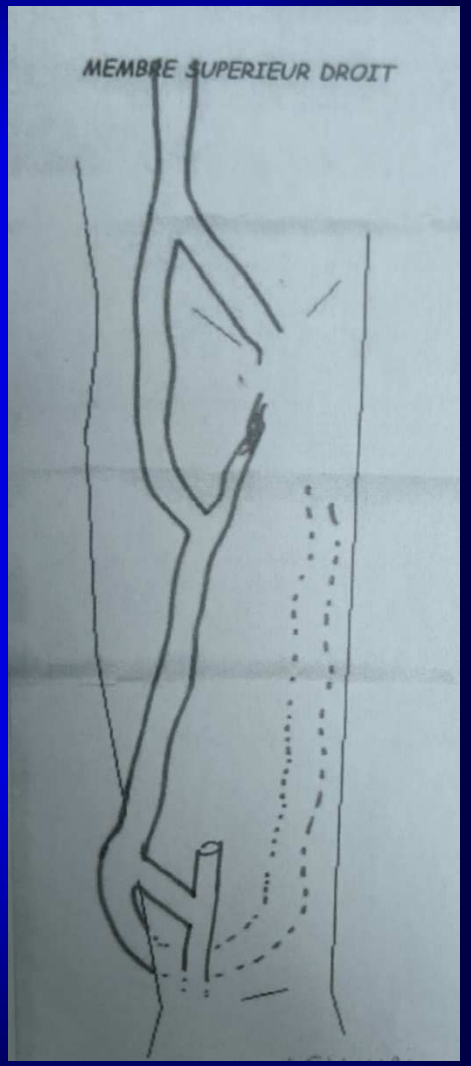
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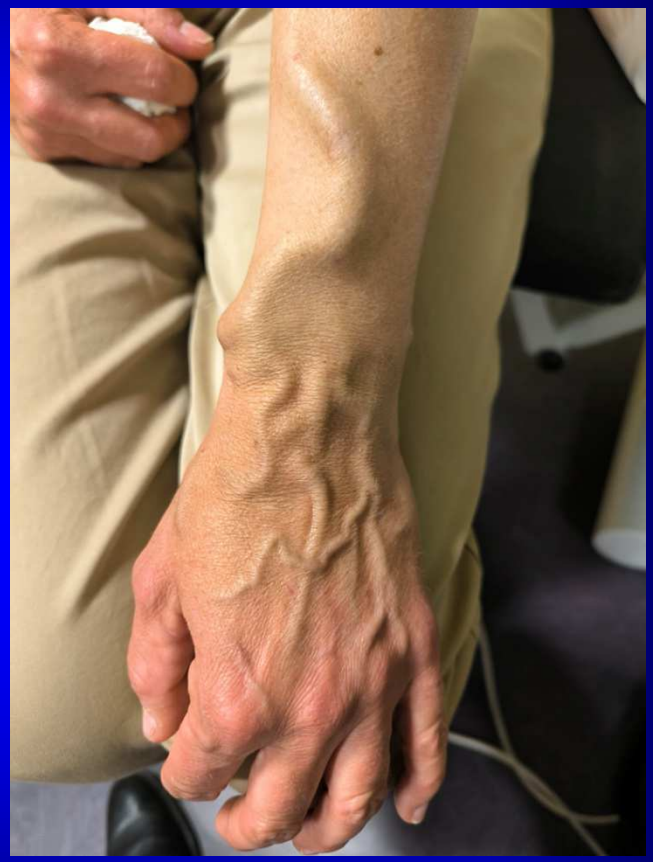

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Table 1. Results of endovascular techniques to enhance AVF maturation.

Author	No. of patients	Target lesion/Technique	Clinical success %	1 year primary patency %	1 year secondary patency %
Beathard et al. 1999[29]	63	VO/AVO	82	–	75
Turmel-Rodrigues et al. 2001[30]	69	JAS/VO	97	39	79
Beathard et al. 2003[31]	100	JAS/VO/AVO	92	–	68
Tordoir et al. 2003[32]	12	JAS/VO	43	–	–
Shin et al. 2005[33]	19	JAS	74	61	82
Falk 2006[34]	65	JAS/VO	74	64	68
Song et al. 2006[35]	22	JAS/VO	95	28	85
Asif et al. 2006[36]	41	JAS	93	46	94
Nassar et al. 2006[37]	119	JAS/VO/AVO	83	62	94
Barone et al. 2007[38]	43	AI/JAS/VO	85	–	–
Clark et al. 2007[39]	101	JAS/VO	88	34	72
Singh et al. 2008[40]	32	JAS/VO/AVO	78	–	–
Ascher et al. 2009[53]	27	BAM	89	–	–
Hong et al. 2009[41]	8	JAS	87	56	87
McLafferty et al. 2009[42]	23	VO	93	–	–
Raynaud et al. 2009[49]	25	AI	91	83	86
Turmel-Rodrigues et al. 2009[10]	74	AI	98	65	96
Natario et al. 2010[43]	30	JAS	97	37	96
Miller et al. 2011[44]	140	VO/AVO	79	38	69
Gallagher et al. 2012[54]	45	BAM	83	–	–
Han et al. 2013[45]	141	JAS/VO	96	72	83
DerDerian et al. 2013[55]	30	BAM	55	–	–
Ahmed et al. 2014[58]	42	AVO	76	–	–
Park et al. 2015[46]	24	VO	96	59	–
Jeon et al. 2016[47]	59	JAS/VO	95	71	–
Rizvi et al. 2017[56]	54	BAM	56	–	–
Park et al. 2017[48]	84	JAS/VO/AVO	94	–	94
Bavare et al. 2017[59]	12	VO/stent graft	100	65	72

JAS = juxta-anastomotic stenosis; AI = arterial inflow; VO = venous outflow; AVO = accessory vein obliteration; BAM = balloon assisted maturation.

28 publications de 1999 à 2017

5 occlusions de veines collatérales associées à un autre geste

1 occlusion isolée

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Table 2. Results of surgical techniques to enhance AVF maturation.

Author	No. of patients	Technique	Clinical success %	1 year primary patency %	1 year secondary patency %
Beathard et al. 1999[29]	39	AVL	82	—	75
Faiyaz et al. 2002[64]	17	AVL	88	—	—
Planken et al. 2007[65]	10	AVL	89	—	—
Mallik et al. 2011[63]	50	PNA	72	72	87
Long et al. 2011[61]	21	PNA	90	71	95
Bharat et al. 2012[19]	54	SLOT	83	—	—
Lee et al. 2013[60]	31	PNA/AVL	87	—	86
Mufty et al. 2015[62]	31	PNA/AVL	94	68	85
Nikam et al. 2015[23]	41	Optiflow	76	78 (3 mts)	—
Sadaghianloo et al. 2016[21]	53	RADAR	92	93 (6 mts)	100 (6 mts)
Chemla et al. 2016[24]	20	Laminate	74	79 (6 mts)	
Darcy et al. 2017[20]	342	SLOT	86	43	82

PNA = proximal neo-anastomosis; AVL = accessory vein ligation; SLOT = straight line onlay technique; RADAR = radial artery deviation and reimplantation; Optiflow = internal anastomotic device; Laminate = external anastomotic device.

Discussion

Luc Turmel-Rodrigues. Mechanical enhancement of AVF maturation J Vasc Access 2014

« Our opinion is that there is no or only the very rare indication for ligation or embolization of collaterals »»

Conclusions

Rôle des collatérales reste incertain et pas très bien défini

Collatérales des FAV radiocéphaliques

Volumineuses collatérales ? R> 0.8 ou un diamètre > 70%

Très souvent une sténose associée

TT des collatérales le plus souvent associé à un autre geste endovasculaire ou chirurgical simultané ou différé