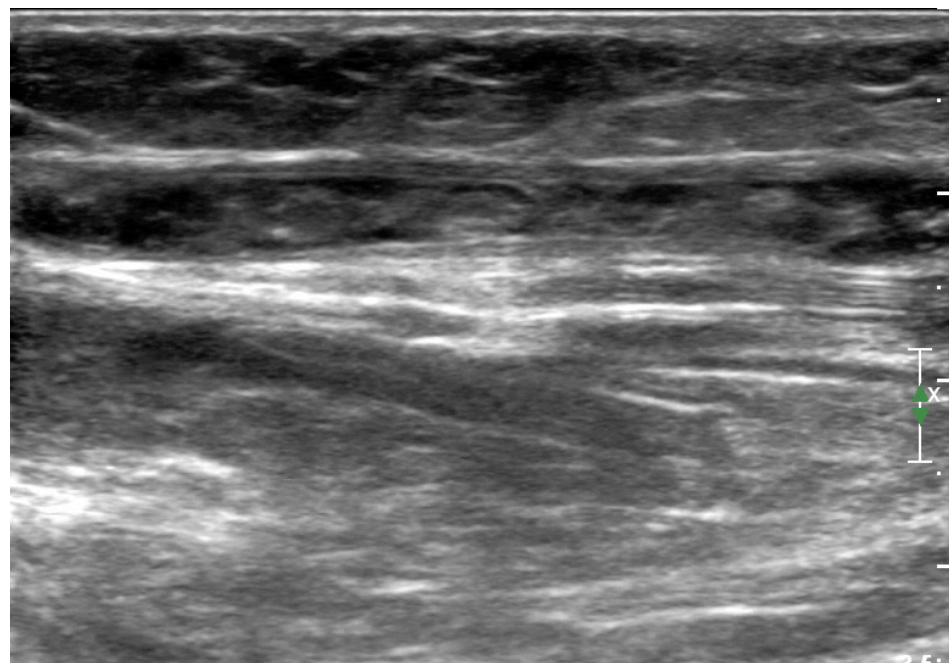
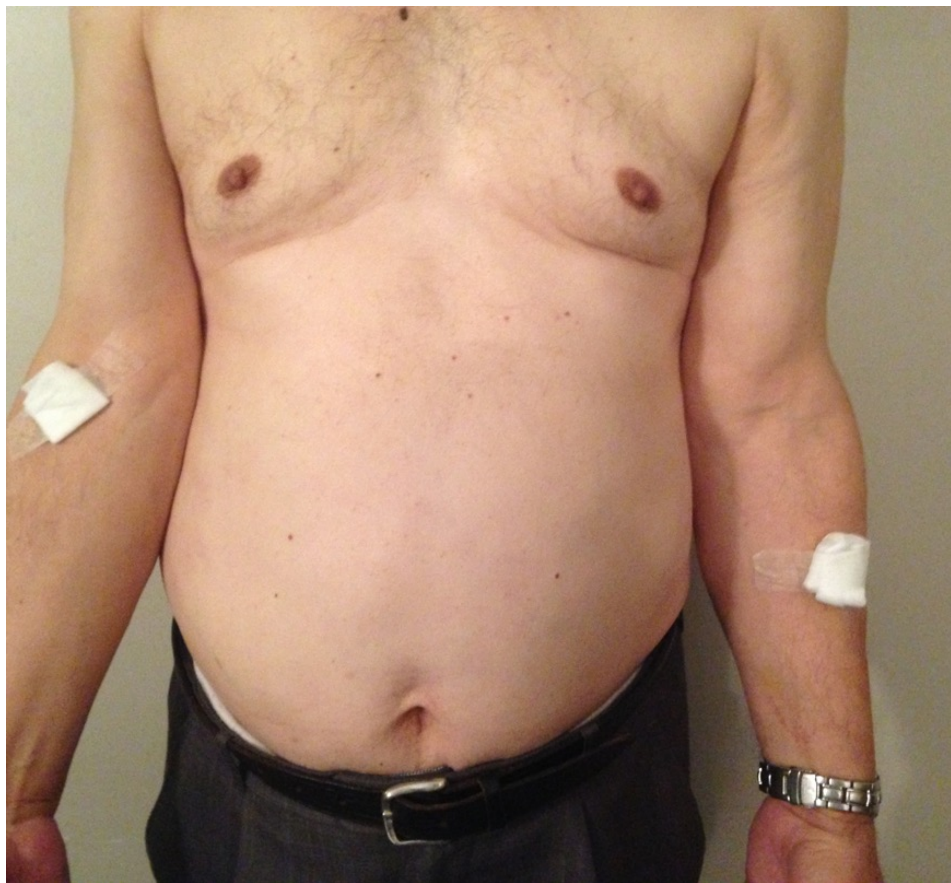


Passeport vasculaire de l'insuffisant rénal





Pourquoi?



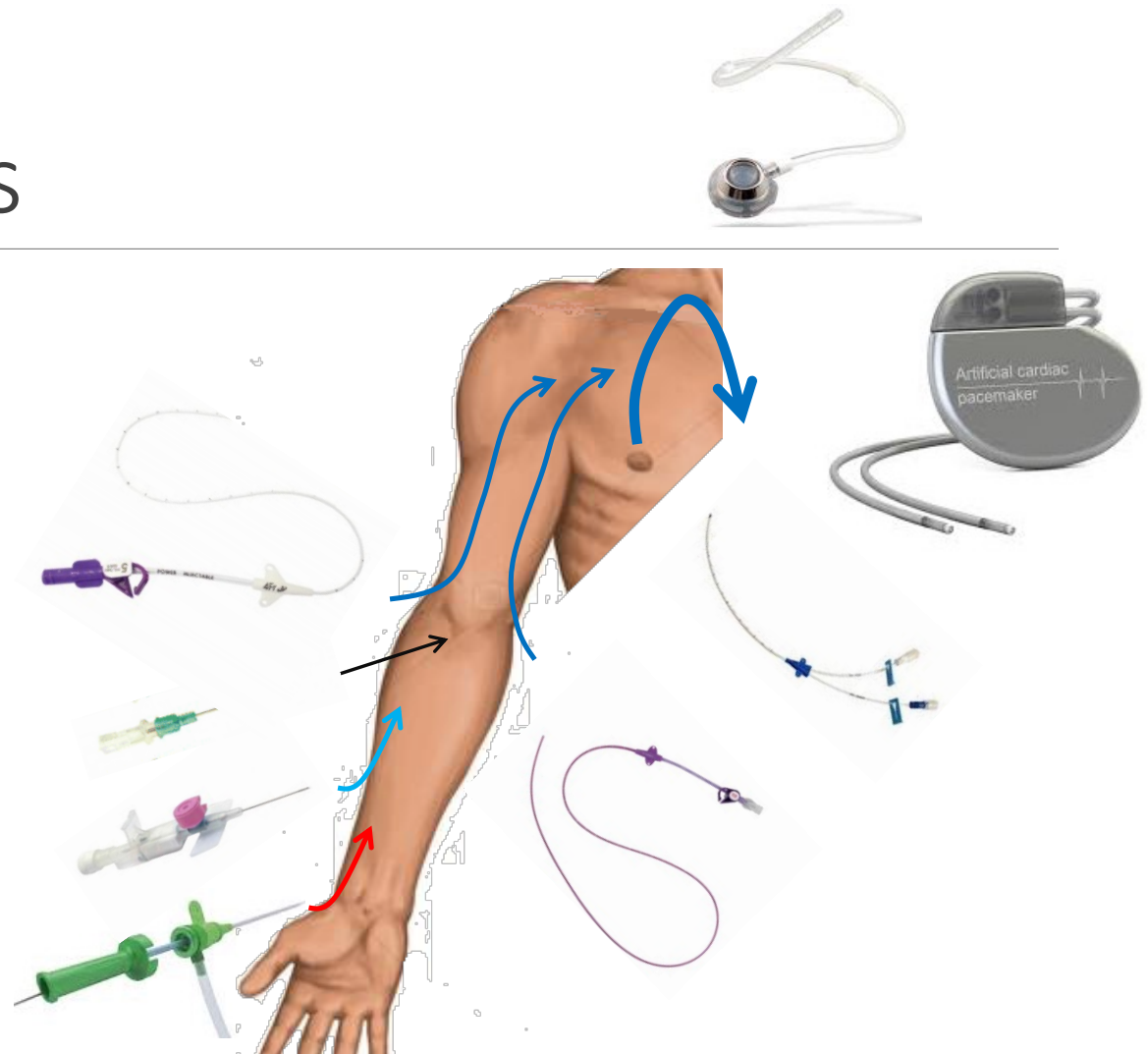
Accès vasculaires

Accès veineux:

- Prélèvements sanguins
- Voie veineuse périphérique
- Midline
- PICCline
- VVC
- Pacemaker
- Défibrillateurs
- Chambres implantables

Accès artériel:

- Coronarographie
- Angioplastie coronarienne
- Angioplastie périphérique



PICC Line: % thromboses

Etude prospective

332 patient (18-90 ans)

ED systématique à l'ablation du cathéter ou à J28

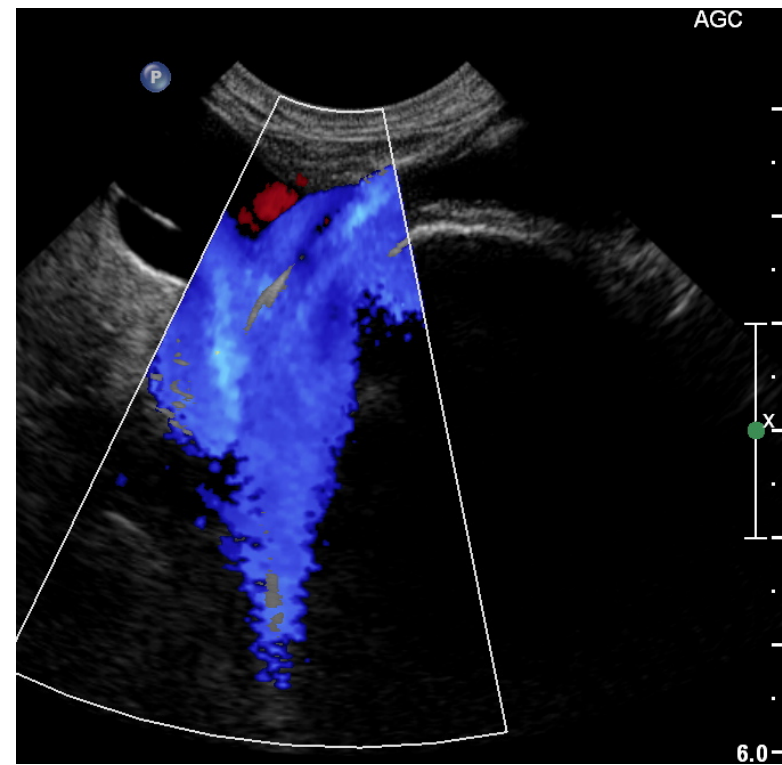
Catheter	Non tapered	Reverse tapered
Thromboses %	70.4	73.4
Thromboses complètes %	15.6	20.8
Thromboses symptomatiques %	4.3	3.6

Itkin M et al. Peripherally inserted central catheter thrombosis--reverse tapered versus nontapered catheters: a randomized controlled study. J Vasc Interv Radiol. 2014

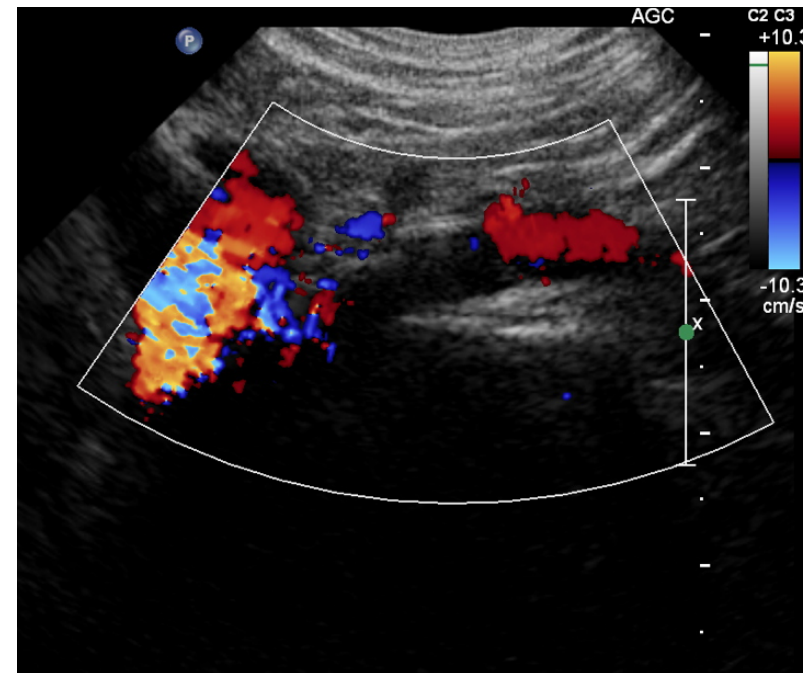
CATHÉTERS VEINEUX CENTRAUX



CATHÉTERS VEINEUX CENTRAUX

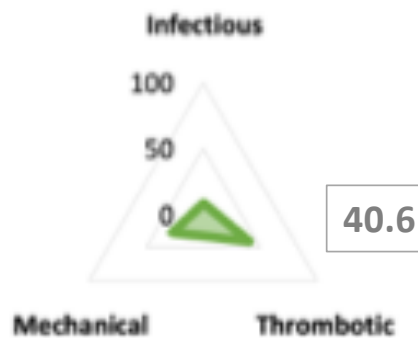


THROMBOSE DE LA V SUB CLAVIERE Dte

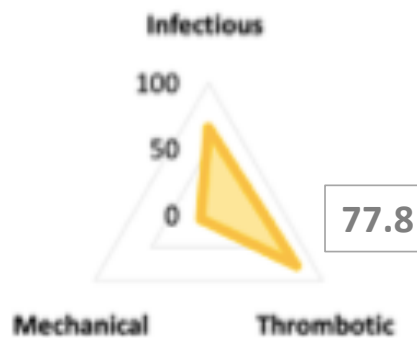


CATHETERS VEINEUX CENTRAUX

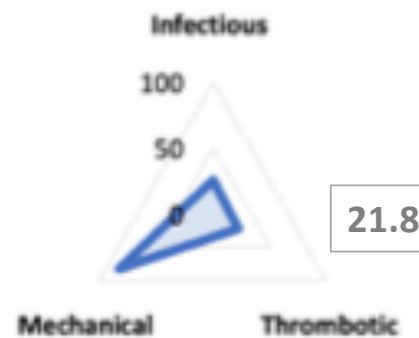
A Internal jugular



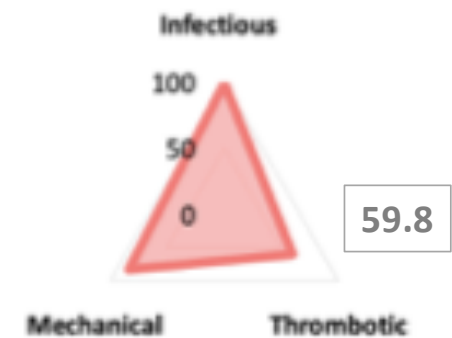
B Subclavian



C Femoral



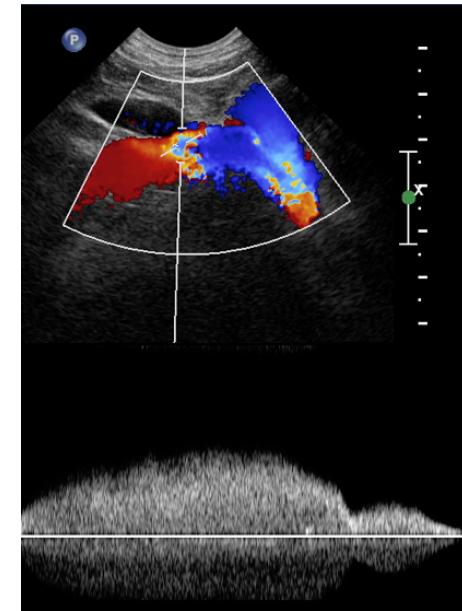
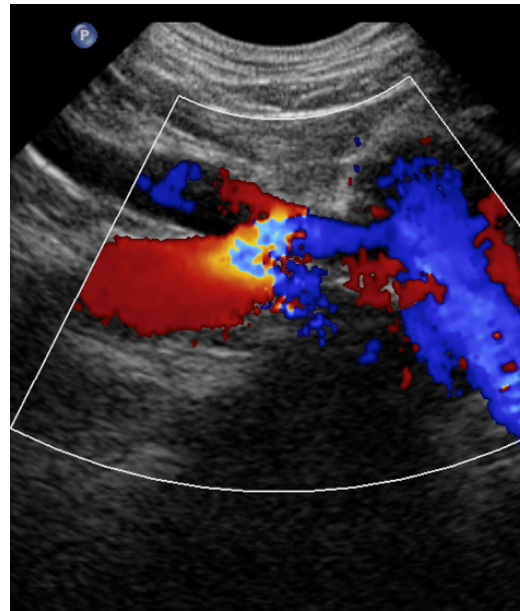
D PICC



SUCRA values

Cowl CT et al. Complications and cost associated with parenteral nutrition delivered to hospitalized patients through either subclavian or peripherally-inserted central catheters. Clin Nutr. 2000

STENOSE DE LA VEINE SUB CLAVIERE Ghe



CATHÉTERS VEINEUX CENTRAUX



PACEMAKER



PACEMAKER

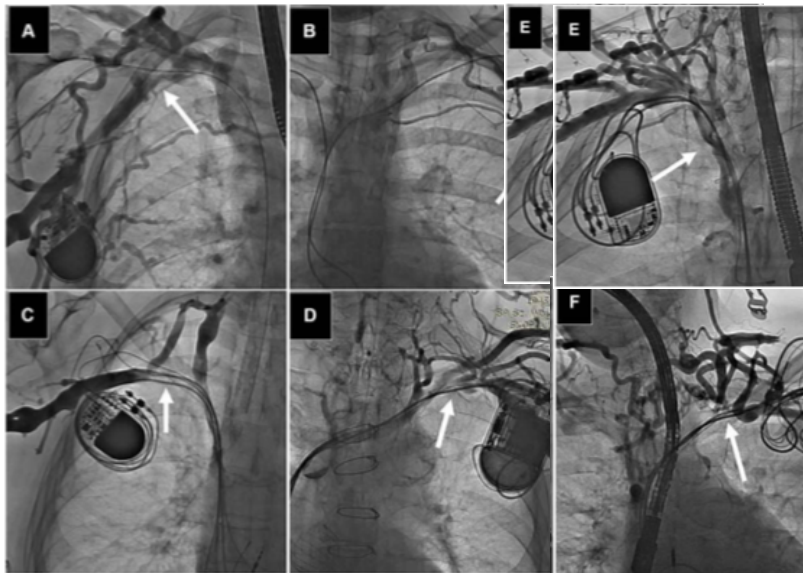


Table 2 Preliminary Evaluation of Venous Obstruction in the 3002 Patients

Severity of Obstruction		
No stenosis	510	16.99%
Mild narrowing	598	19.92%
Moderate narrowing	621	20.69%
Severe narrowing	598	19.92%
Total occlusion	675	22.49%
Evaluated	3002	100.0%

Czajkowski M et al. Severity and Extent of Lead-Related Venous Obstruction in More Than 3000 Patients Undergoing Transvenous Lead Extraction. Vasc Health Risk Manag. 2022

PACEMAKER

145 patients

Surveillance clinique et ED

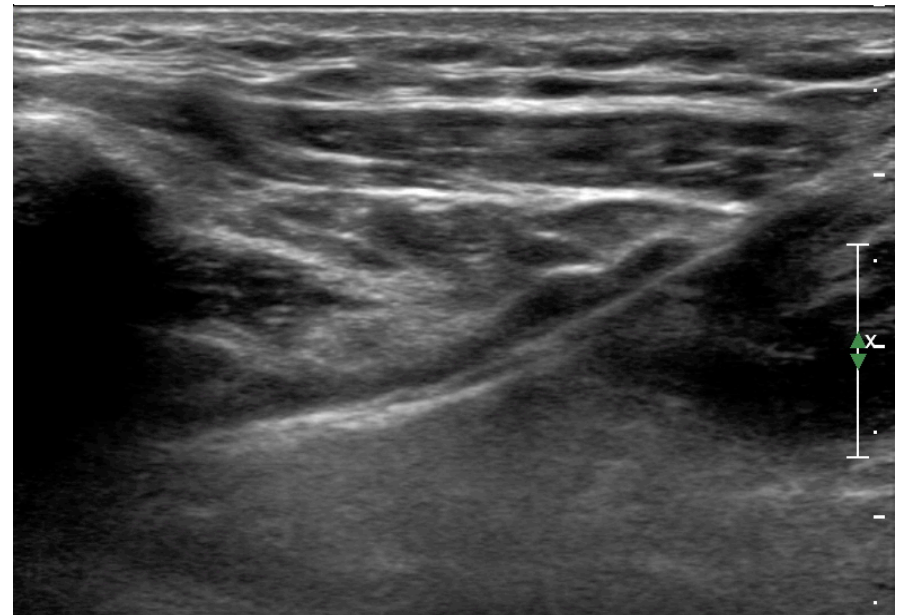
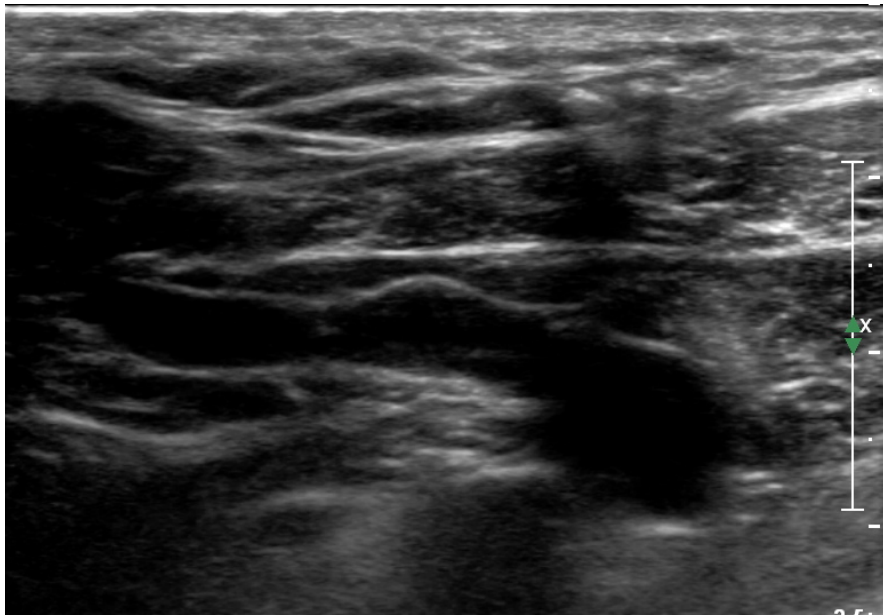
- J0
- M3
- M6
- M12

Thrombose:	23% (n=34)
◦ Symptomatique:	2% (n=3)
◦ Asymptomatique:	21%. (n=21)



van Rooden CJ, Molhoek SG, Rosendaal FR, Schalij MJ, Meinders AE, Huisman MV. Incidence and risk factors of early venous thrombosis associated with permanent pacemaker leads. J Cardiovasc Electrophysiol. 2004

PACE MAKER



VOIES VEINEUSES PERIPHERIQUES



Distribution des thromboses des Mb Sup

Table 3

Topographic distribution of upper extremity vein thrombosis.

Topography of UE-VT	n = 1315	100%
Deep	748	56,9%
Proximal	614	46,7%
Internal jugular vein	171	13,0%
Innominate vein	135	10,7%
Subclavian vein	162	12,3%
Axillary vein	146	11,1%
Distal	134	10,2%
Humeral vein	127	9,7%
Ulnar vein	2	0,2%
Radial vein	5	0,4%

Superficial	567	43,1%
Brachial	337	25,6%
Cephalic brachial vein	117	8,9%
Basilic brachial vein	220	16,7%
Antebrachial and hands	230	17,5%
Cephalic antebrachial vein	160	12,2%
Basilic antebrachial vein	54	4,1%
Dorsal veins of the hands	16	1,2%

UE-VT = upper extremity vein thrombosis.

Ploton G et al. A STROBE cohort study of 755 deep and superficial upper-extremity vein thrombosis. Medicine (Baltimore). 2020

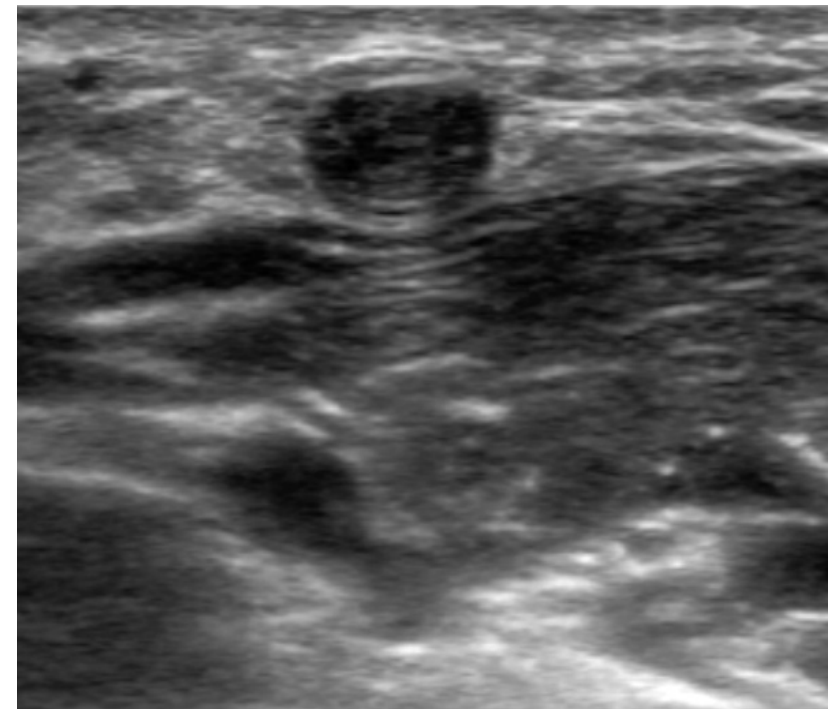
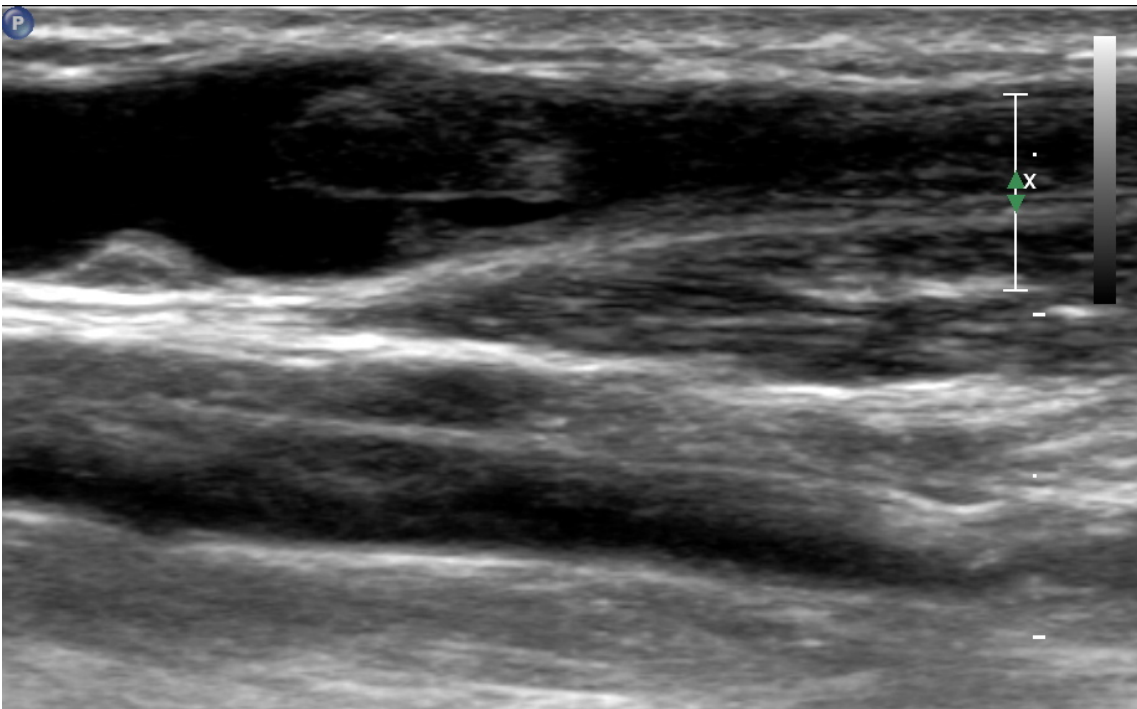
Evolution des thromboses des Mb Sup

Table 1. Characteristics of UEVT depending on their proximal or distal topography.

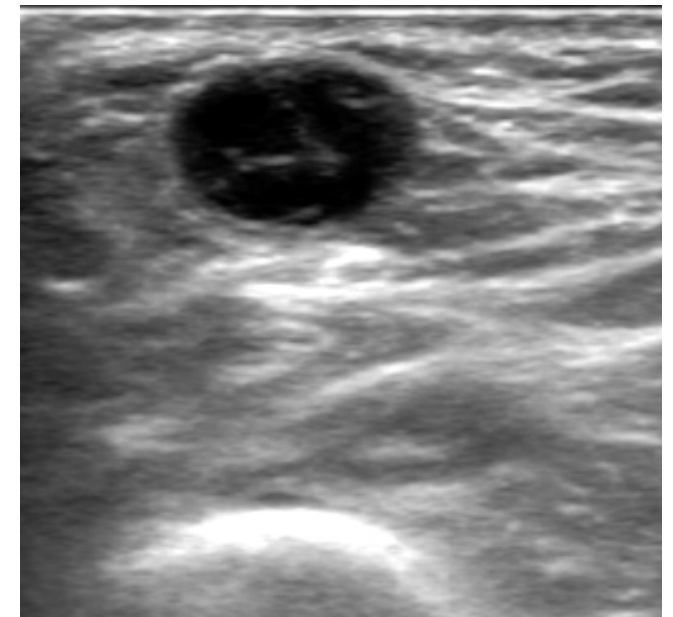
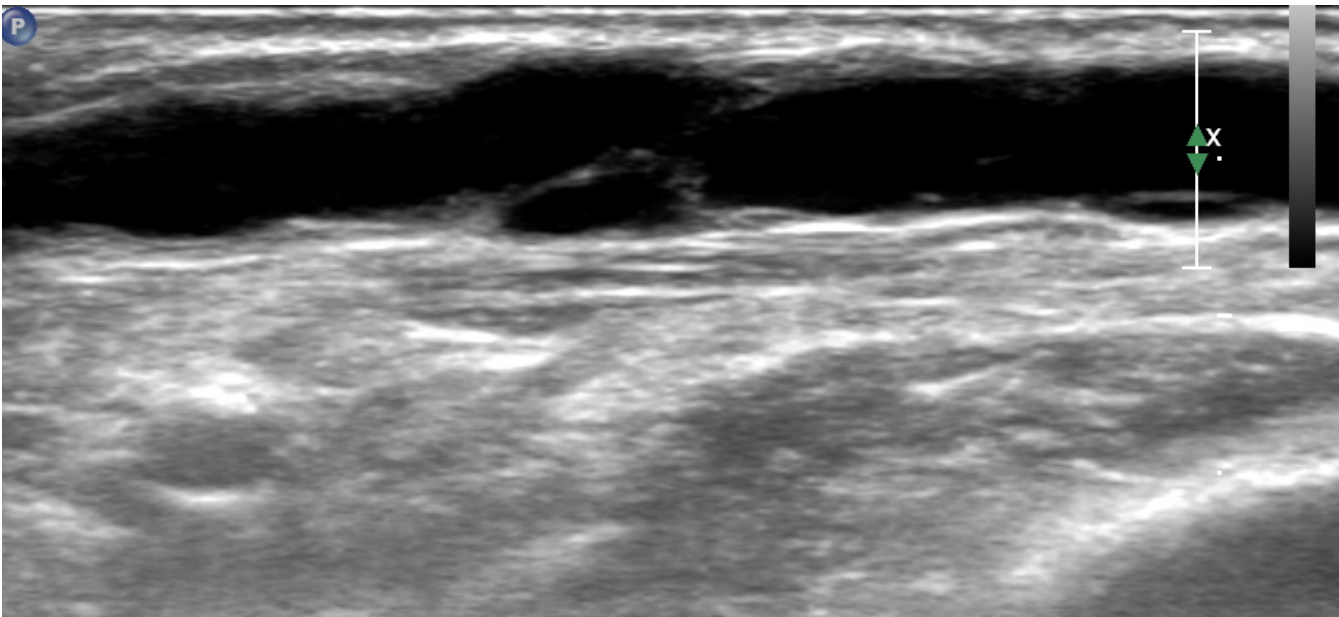
Variables	Total Cohort (UEVT) n = 494	Proximal Thrombosis (Proximal-VT) n = 304	Distal Thrombosis (Distal-VT) n = 190	p
Characteristics of the UEVT				
Asymptomatic n (%)	60 (12.2%)	50 (16.4%)	10 (5.3%)	0.0002
Endovenous device n (%)	427 (86.4%)	263 (86.5%)	164 (86.3%)	0.95
Occlusive thrombosis n (%)	292 (63.9%)	158 (52.0%)	134 (70.5%)	<0.0001
PE at diagnosis between D-14 and D-0. n (%)	11 (2.2%)	10 (3.3%)	1 (0.5%)	0.06
Follow Up				
Median follow-up time (days) [Q1-Q3]	46 [29–90]	59 [31–104]	42 [22–57]	<0.0001
Recanalization without venous sequelae n (%)	188 (38.0%)	109 (35.9%)	79 (41.6%)	0.001

Ploton G et al. Predictive factors of venous recanalization in upper-extremity vein thrombosis. PLoS One. 2021

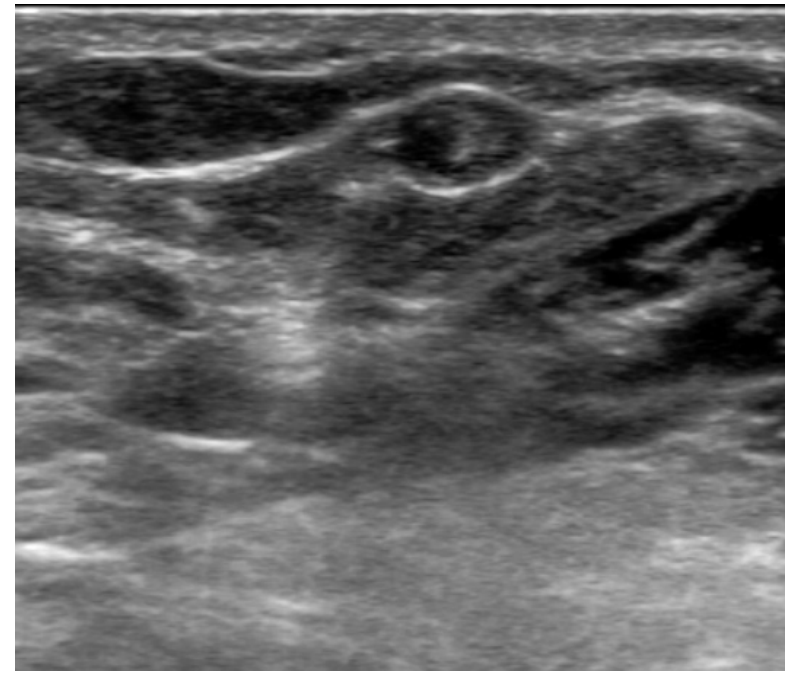
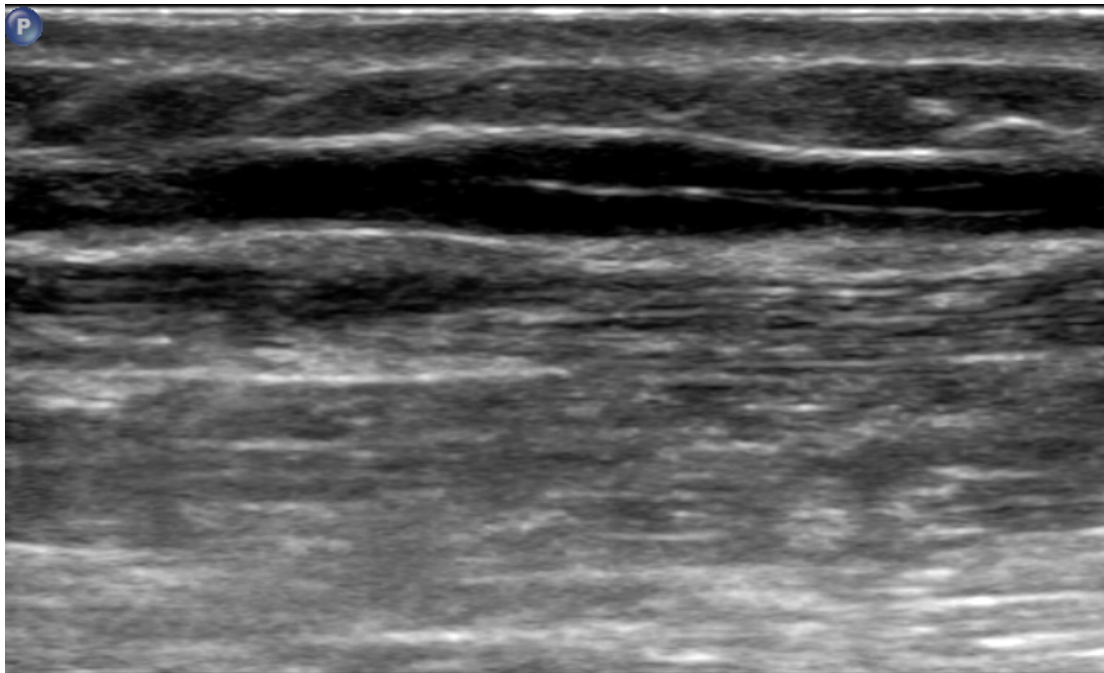
THROMBOSE V. CÉPHALIQUE AV BRAS



SÉQUELLES DE THROMBOSE



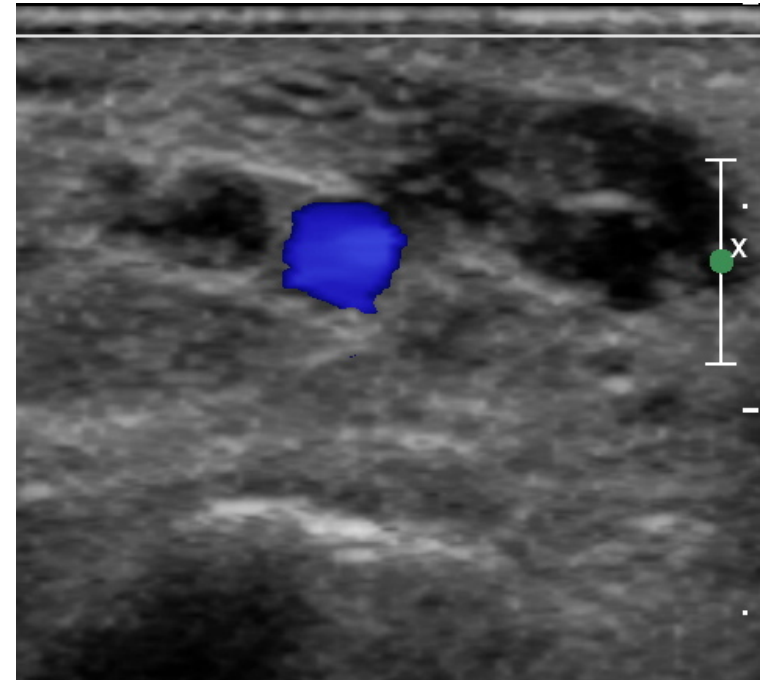
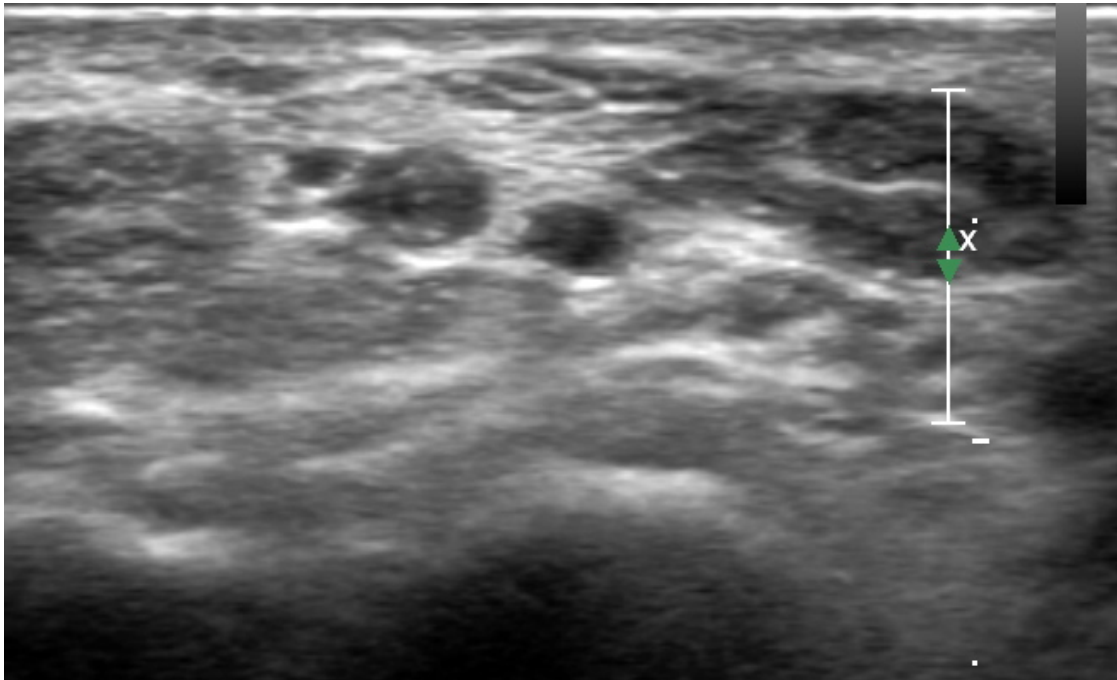
SÉQUELLES DE THROMBOSE



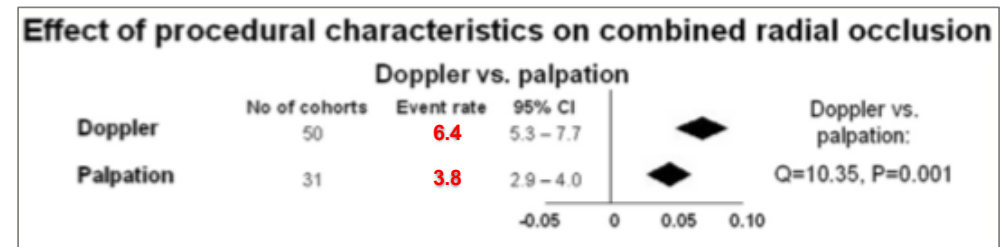
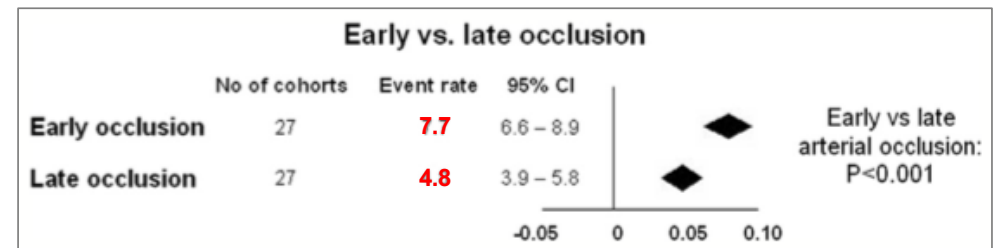
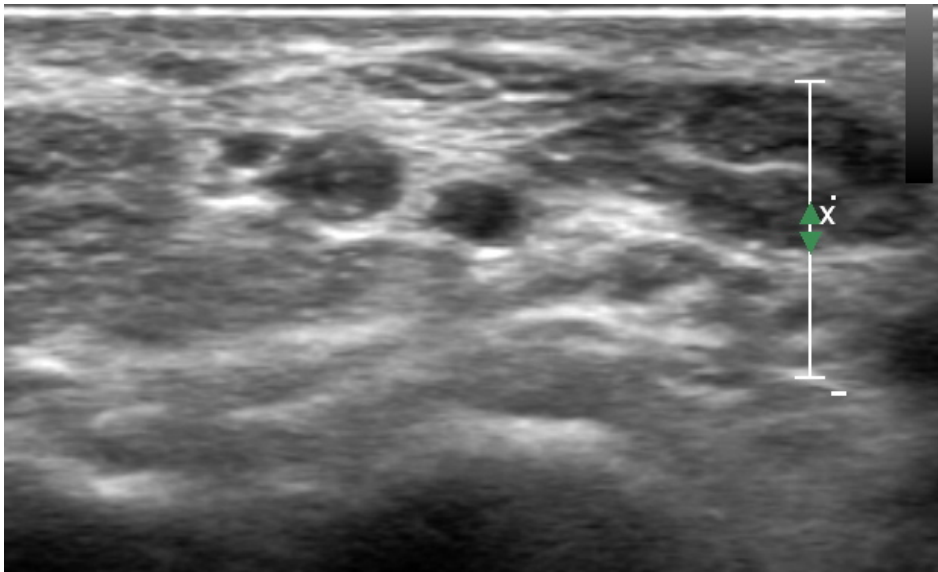
CORONAROGRAPHIE PAR VOIE RADIALE



CORONAROGRAPHIE PAR VOIE RADIALE



CORONAROGRAPHIE PAR VOIE RADIALE



Hahalis G et al. Radial Artery and Ulnar Artery Occlusions Following Coronary Procedures and the Impact of Anticoagulation: ARTEMIS(Radial and Ulnar ARTEry Occlusion Meta-AnalysIS) Systematic Review and Meta-Analysis. J Am Heart Assoc. 2017

CORONAROGRAPHIE PAR VOIE RADIALE

Table 4. Vascular Access Site Complications in Patients With Diagnostic Catheterization Only (N = 389)

	5-F Sheath (n = 151)	6-F Sheath (n = 238)	p Value
Total number of access site complications	22 (14.6%)	82 (34.5%)	<0.001
Radial artery occlusion	21 (13.9%)	76 (31.9%)	<0.001
Pseudoaneurysm	0 (0%)	2 (0.8%)	0.524
Arteriovenous fistula	1 (0.7%)	3 (1.3%)	1.000
Moderate/severe bleeding	0 (0%)	0 (0%)	—
Mild bleeding	0 (0%)	5 (2.1%)	0.161
Values are n (%).			

Table 7. Odds Ratios for Potential Risk Factors for Radial Artery Occlusion in a Multivariate Model in Patients With Diagnostic Catheterization Only

	p Value	Odds Ratio	95% CI for Lower	Odds Ratio Upper
6-F sheath	<0.001	2.742	1.574	4.776
Age (10 yrs)	0.001	0.663	0.523	0.842
Female	<0.001	2.591	1.575	4.264
Peripheral arterial disease	0.010	2.936	1.300	6.632
Cerebrovascular disease	0.336	1.524	0.646	3.598
CI = confidence interval.				

Uhlemann M et al. The Leipzig prospective vascular ultrasound registry in radial artery catheterization: impact of sheath size on vascular complications. JACC Cardiovasc Interv. 2012

CORONAROGRAPHIE PAR VOIE RADIALE

1754 patients:

- Angioplastie: 78.3 %
- Coronarographie: 21.7 %

Examen 24h

Occlusion de l'artère radiale: 12%

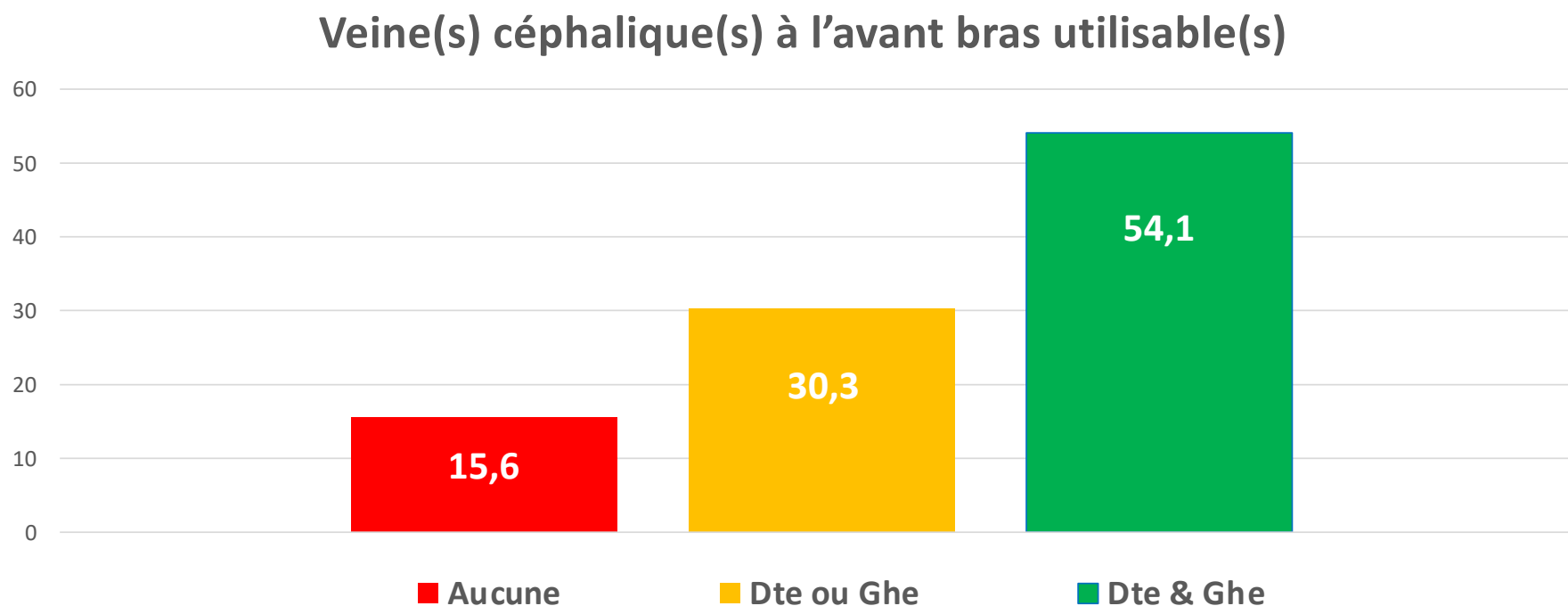
Table 2. Binary logistic regression analysis for predictors of radial artery occlusion following transradial catheterization

Predictor	Odds ratio	95% CI		P-value
		Lower	Upper	
GFR <60 mL/min/1.73 m ²	1.504	1.085	2.083	0.014
Multiple puncture	2.733	2	3.736	<0.001
Sheath size				
6F vs 5F	0.137	0.021	0.887	0.037
7F vs 5F	0.369	0.029	4.649	0.441
Complex procedure	3.066	1.962	4.791	<0.001
Contrast volume ≥100 mL	4.981	0.763	32.521	0.093
Hemostasis time	1.004	1.002	1.006	<0.001
Forearm hematoma	2.595	1.751	3.846	<0.001

CI - confidence interval; GFR - glomerular filtration rate

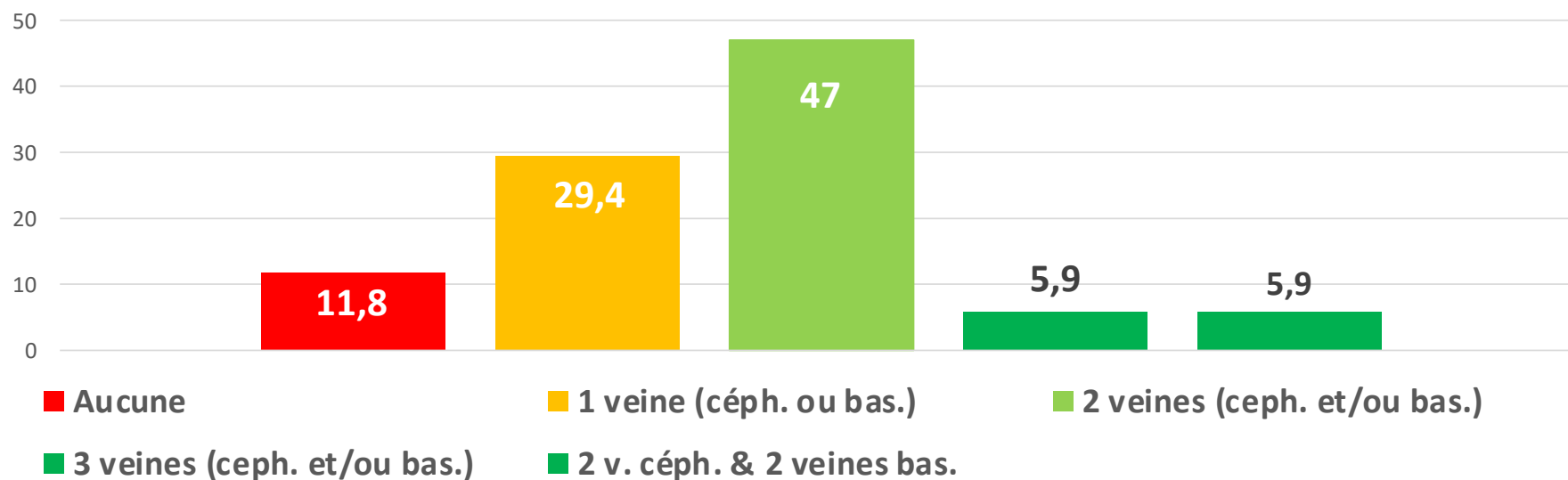
Dwivedi SK et al. Factors influencing radial artery occlusion after transradial coronary intervention in the Indian population. Anatol J Cardiol 2022; 26: 105-11.

Bilan ED veineux pré FAV

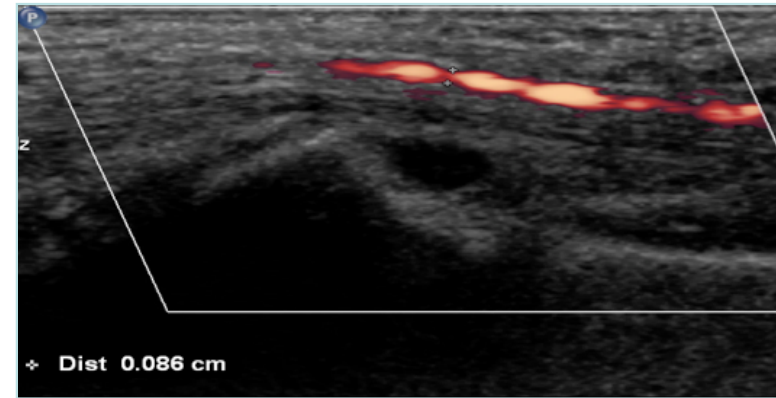
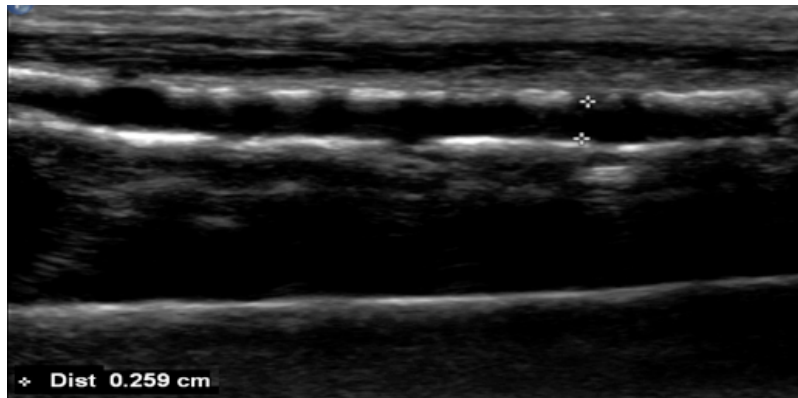


Bilan ED veineux pré FAV

Aucune veine céphalique à l'av. bras utilisable
Veine(s) utilisable(s) au bras



Bilan ED artériel pré FAV



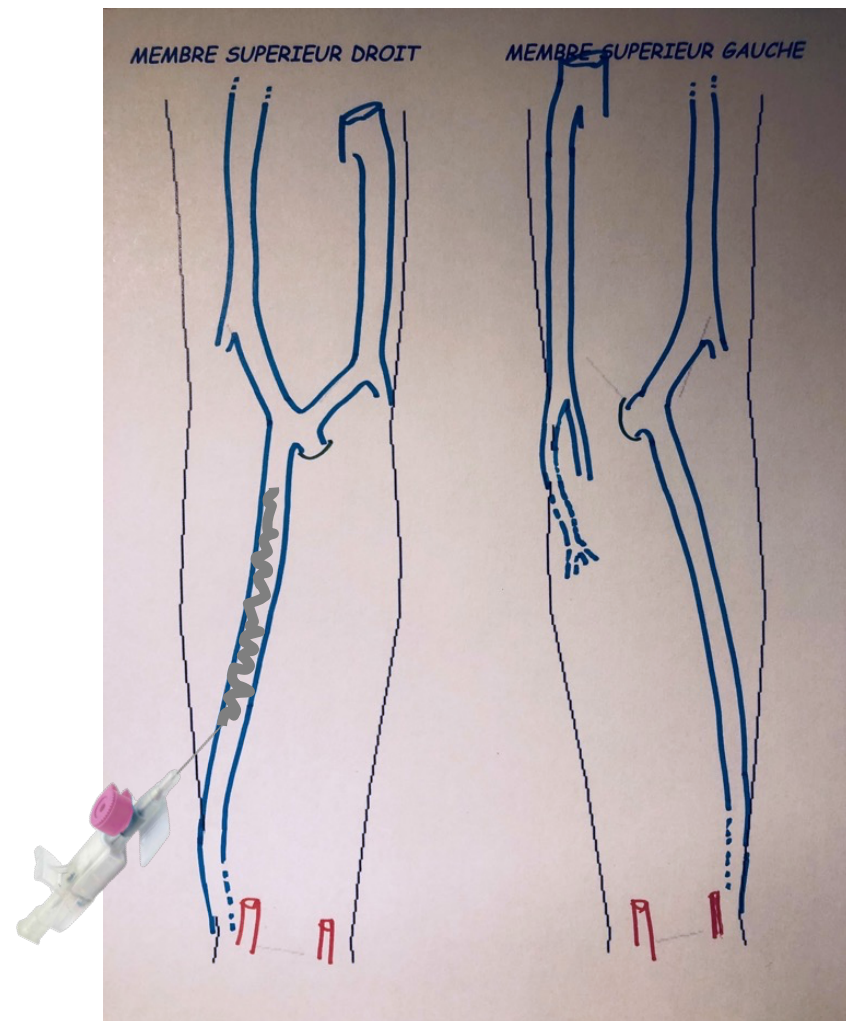
Lésions athéromateuses des artères radiale : 15.6 %
- *Bilatérale:* 10.0 %
- *Unilatérales:* 5.6 %
- *Thromboses:* 2.3 %

Thromboses des artères ulnaires: 6.4 %
- *Bilatérale:* 3.7 %
- *Unilatérales:* 2.7 %

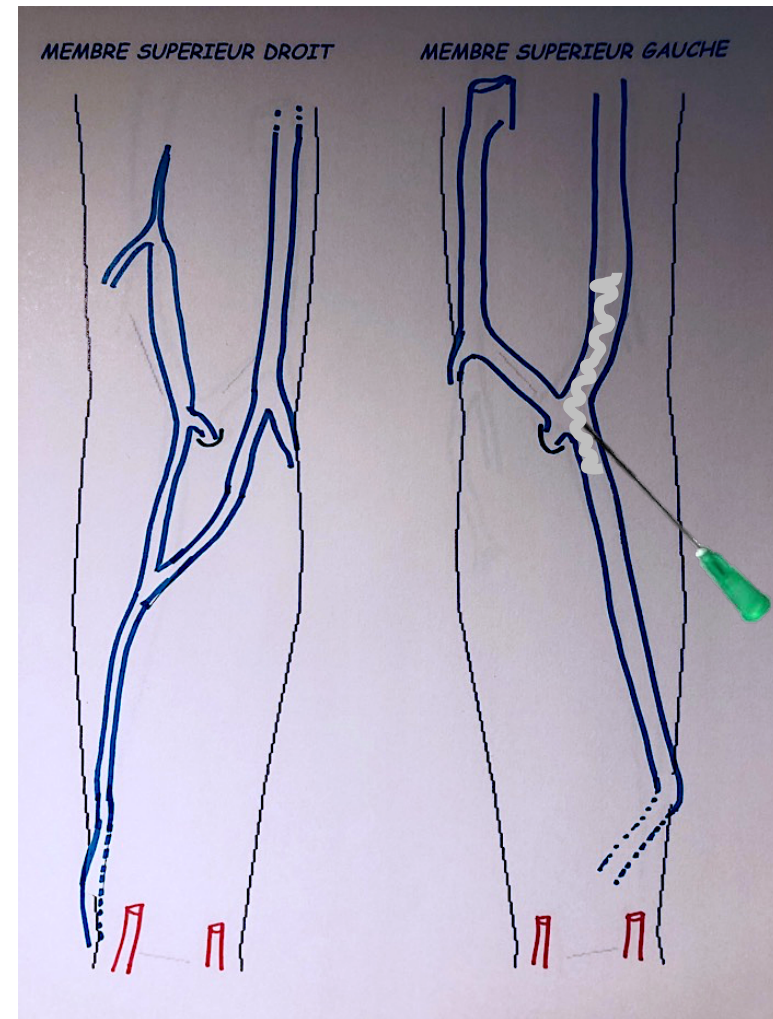
Passeport vasculaire de l'insuffisant rénal

- SENSIBILISER A LA NÉCESSITÉ DE PRÉSERVER LE CAPITAL VASCULAIRE
- RATIONNALISER LES STRATÉGIES D'ACCÈS VASCULAIRE

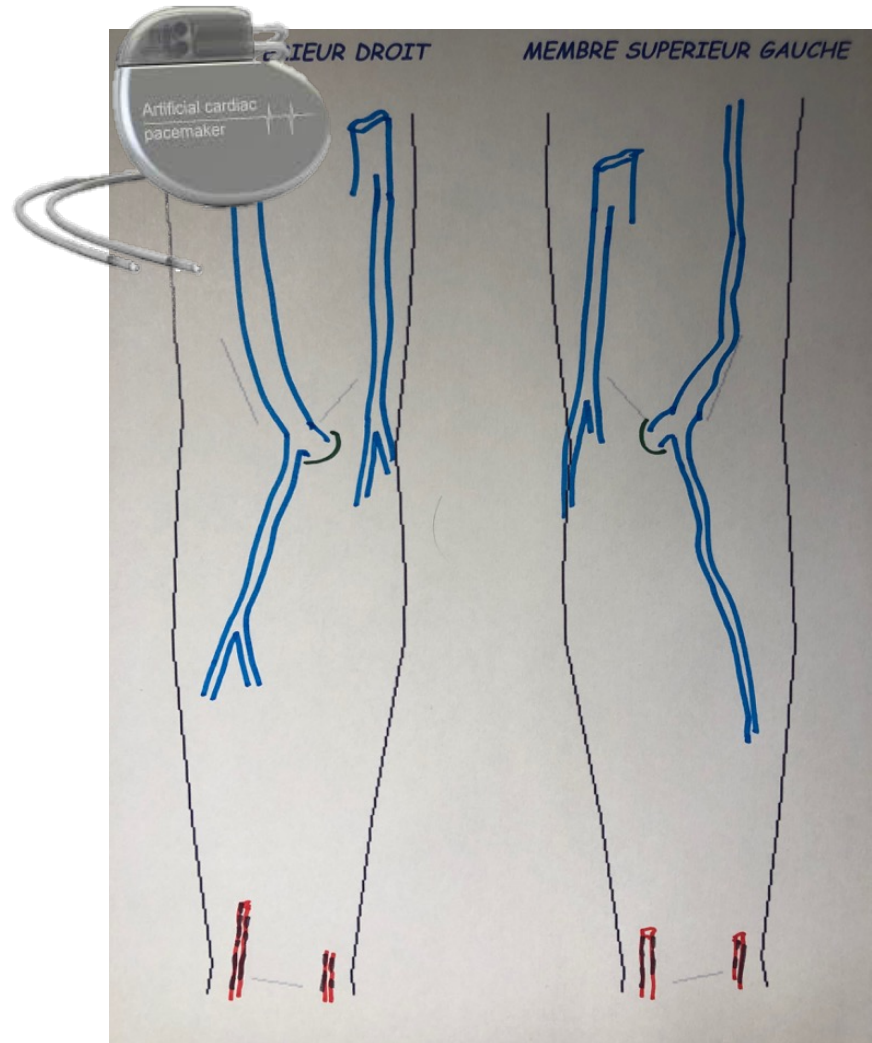
Un cathlon...
à droite,
parce que plus facile!



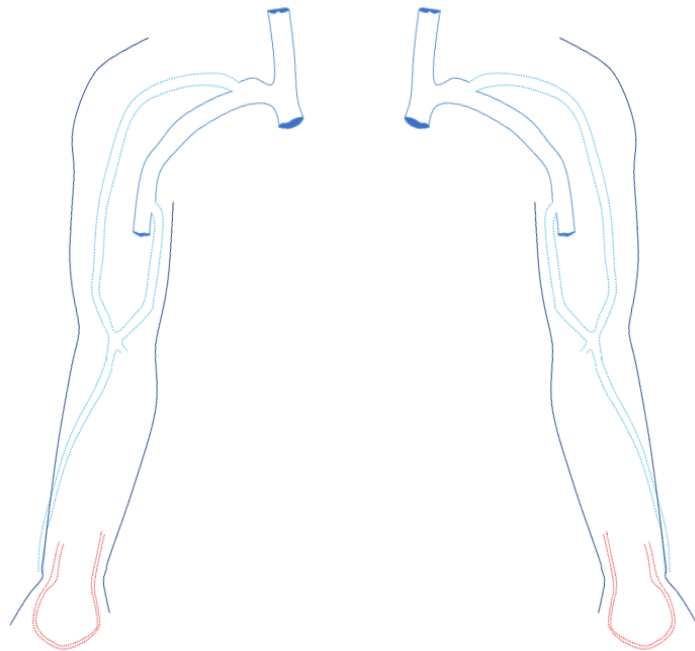
Préserver le bras
dominant!



Pacemaker par voie
céphalique gauche
La meilleure stratégie!



Cartographie ED des membres supérieurs



Absent: - - - - -

Oblitéré: ~~~~~

Inutilisable pour la dialyse: ~~~~~

Utilisable pour la dialyse:
~~~~~  
~~~~~

~~~~~  
~~~~~

Synthèse

FAV Réalisables

	Radio céphalique	Ulna basilique	Percutané au pli du coude	Brachio céphalique	Brachio basilique
MSD	☐	☐	☐	☐	☐
MSG	☐	☐	☐	☐	☐

Bilan Vasculaire

		Ponctionnable	A préserver si possible	A préserver impérativement
ARTERE	- radiale	☐	☐	☐
	- ulnaire	☐	☐	☐
VEINE AVANT BRAS	- céphalique	☐	☐	☐
VEINE BRAS	- céphalique	☐	☐	☐
	- basilique	☐	☐	☐
VEINES CENTRALES	- jugulaire	☐	☐	☐
	- sub clavière & TVBC	☐	☐	☐

Propositions

Pour tout prélèvement sanguin, choisir :

1. Les veines du dos de la main

2. A défaut :

Veines	Céphalique à l'avant-bras	Médiale céphalique	Médiale basilique
MSD	☐	☐	☐
MSG	☐	☐	☐

Mise en place d'une voie veineuse périphérique (cathéter court) :

Uniquement en cas d'absolue nécessité, si besoin, choisir :

Veines	Céphalique à l'avant-bras	Médiale céphalique	Médiale basilique
MSD	☐	☐	☐
MSG	☐	☐	☐

Propositions

Mise en place d'un Midline ou PICC Line:

CONTRE-INDICATIONS DES PICC

- 20.** La pose d'un PICC est contre-indiquée :
- chez les patients porteurs d'une insuffisance rénale chez lesquels la nécessité d'une fistule artérioveineuse est prévisible (hémodialyse chronique) (AF),
 - du côté d'un curage axillaire ancien ou récent (AF),
 - en cas de lymphoedème du membre supérieur (AF),
 - en cas de lésions infectieuses du membre supérieur (AF),
 - à proximité de lésions cutanées chroniques (AF).

CHOIX DU SITE D'IMPLANTATION

- 26.** Un PICC est posé dans les veines du membre supérieur, en préférant la veine basilique, à défaut la veine humérale (brachiale). En dernier recours, la veine céphalique peut être utilisée (AF).

Il n'y a pas de consensus sur le choix du bras non dominant.

BONNES PRATIQUES ET GESTION DES RISQUES ASSOCIÉS AU PICC - HYGIÈNES – 2013 - VOLUME XXI - N° 6

Propositions

Mise en place d'un Midline ou PICC Line:

Uniquement en cas d'absolue nécessité, si besoin, choisir :

Veines	V. brachiale	V. basilique	V. céphalique
MSD	☐	☐	☐
MSG	☐	☐	☐

Propositions

Mise en place d'une chambre implantable ou d'un pace maker, choisir :

Veines	Sub clavière	Jugulaire	Céphalique
MSD	☐	☐	☐
MSG	☐	☐	☐

Coronarographie, choisir :

Artères	Radiale	Ulnaire	Fémorale
MSD	☐	☐	☐
MSG	☐	☐	☐

VOIE ULNAIRE?

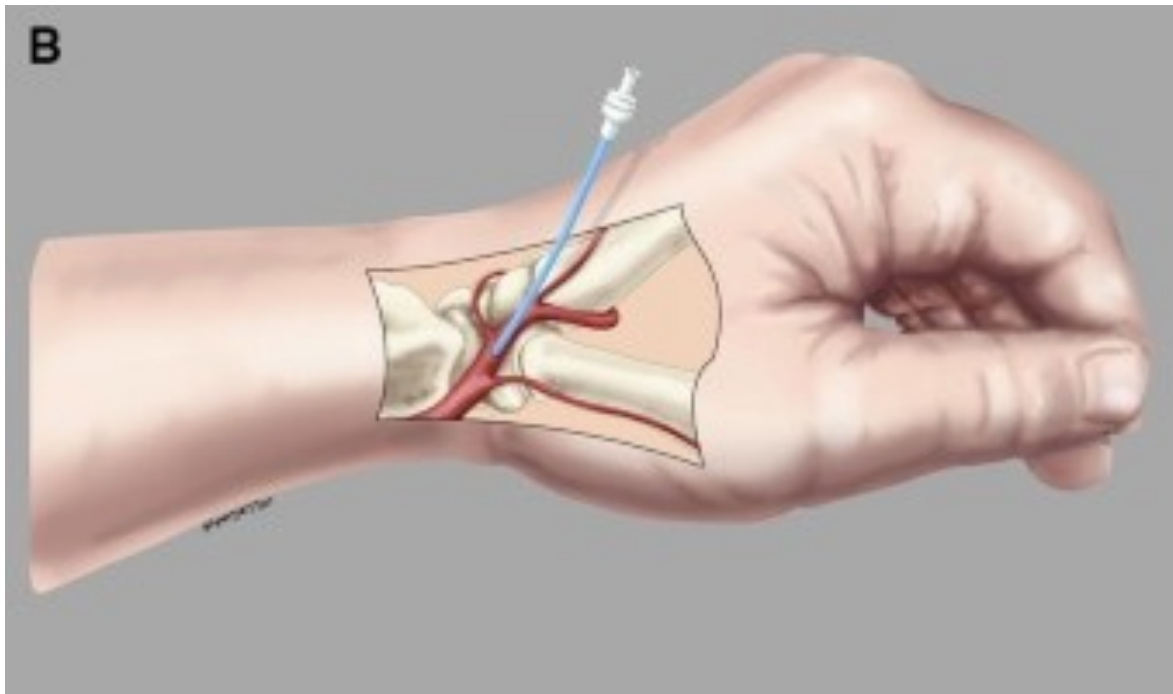


Conclusions

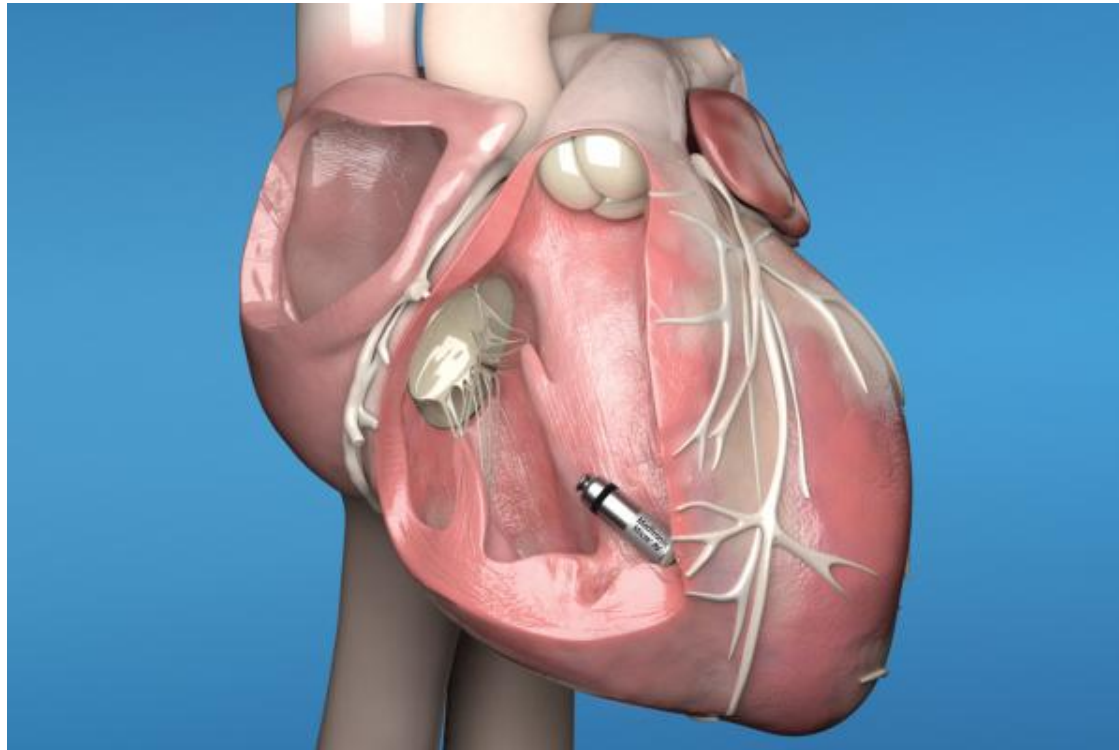
TRA was superior to TUA in efficacy. The feasibility and efficacy of TUA depended on the anatomy of the UA (diameter and depth) and operator experience with this access site. TUA was found to be a safe approach for CAG and PCI and could be used as an alternative method of forearm access. Ultrasonography of the forearm arteries was helpful in selecting the optimal approach and assessing vascular complications.

Gralak-Lachowska D et al. TransRadial versus transUlnar artery approach for elective invasive percutaneous coronary interventions: a randomized trial on the feasibility and safety with ultrasonographic outcome - RAUL study. Postepy Kardiol Interwencyjnej. 2020

Voie radiale distale



Leadless pacemaker?



Dans tous les cas



Un passeport pour qui?

Insuffisants rénaux avec comorbidité

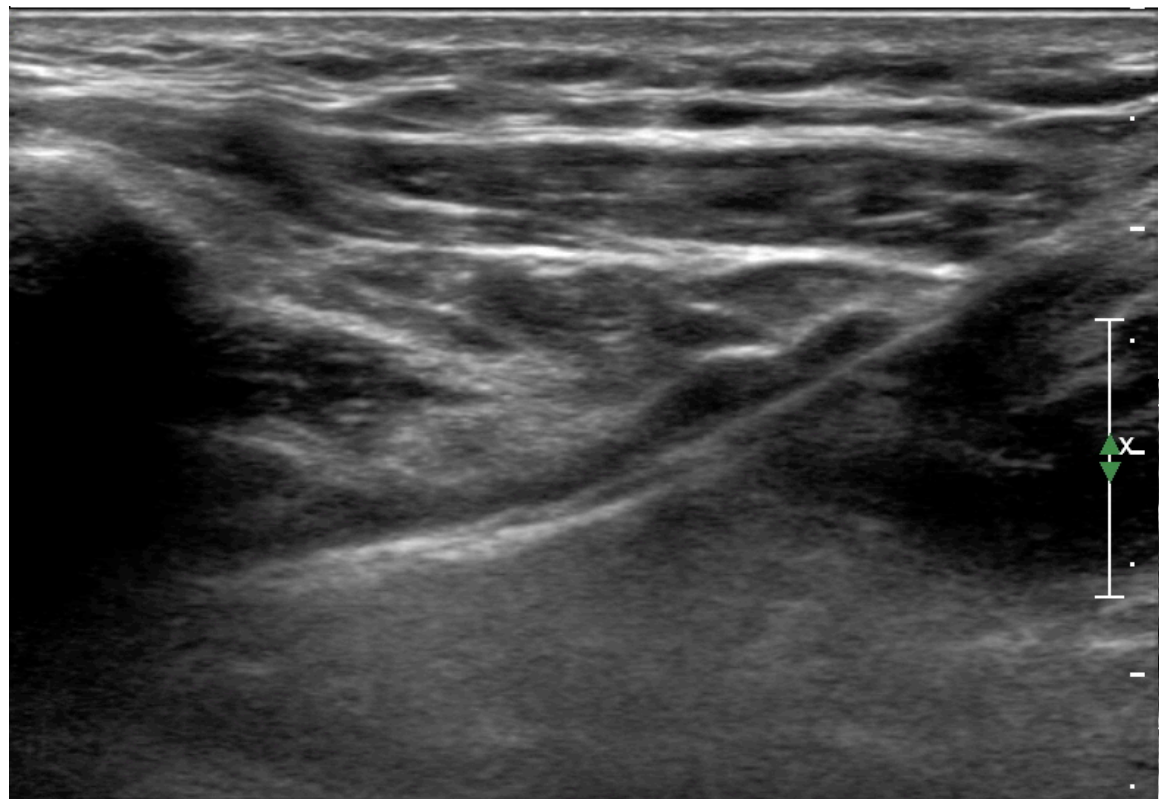
- Coronaropathie
- Cancer

Jeunes insuffisants rénaux

Tous les insuffisants rénaux candidats à la dialyse?

Les dialysés eux-mêmes?

Ce qui ne devrait pas arriver...



DRAFT