



19ème Cours Congrès de la Société Française de l'Abord Vasculaire
Aix-en-Provence
Vendredi 13 Juin 2014

Un échographe dans tous les services de dialyse !

Ah oui ???
Et pourquoi faire ?



Dr Stéphane EDET, Service de Néphrologie-Hémodialyse CH de DIEPPE

L'échoguidage pour la pose des cathéters centraux



Je n'ai pas besoin
d'échographe... !
je réussis toujours à
poser les cathéters
...!



Patients incidents

- 9 706 nouveaux malades incidents
- 33,5 % débutent EER en urgence
- **5 435** patients sur cathéters transitoires ou permanents (**56 %**)

Patients prévalents

- 34 731 patients hémodialysés au 31/12/2012
- **5 983** patients sur cathéters permanents (**17,2 %**)

L'échoguidage pour la pose des cathéters centraux Il y a des recommandations !!!



10. Central venous access

Guideline 10.1. Central venous catheters should be inserted as a last resort in patients without a permanent access and the need for acute haemodialysis (Evidence level III).

Guideline 10.2. The percutaneous route should be used for both acute and chronic catheter insertion. Insertion should be guided by ultrasound. A plain X-Ray (chest or abdomen) should be performed before use to locate catheter and detect any complication (Evidence level II).

Guideline 10.3. The right internal jugular vein is the preferred location for insertion (Evidence level II).

Guideline 10.4. Non-tunnelled catheters should only be used in emergency situations and should be exchanged as soon as possible for tunnelled catheters (Evidence level III).



EBPG, may 2007

L'échoguidage pour la pose des cathéters centraux Jugulaires Internes



REVIEW ARTICLE

CURRENT CONCEPTS

Preventing Complications of Central Venous Catheterization

David C. McGee, M.D., and Michael K. Gould, M.D.

N Engl J Med 2003;348:1123-33.

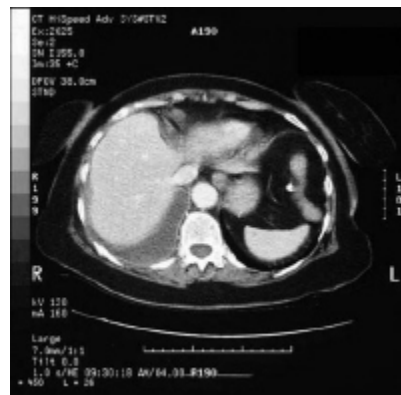


Table 2. Frequency of Mechanical Complications, According to the Route of Catheterization.*

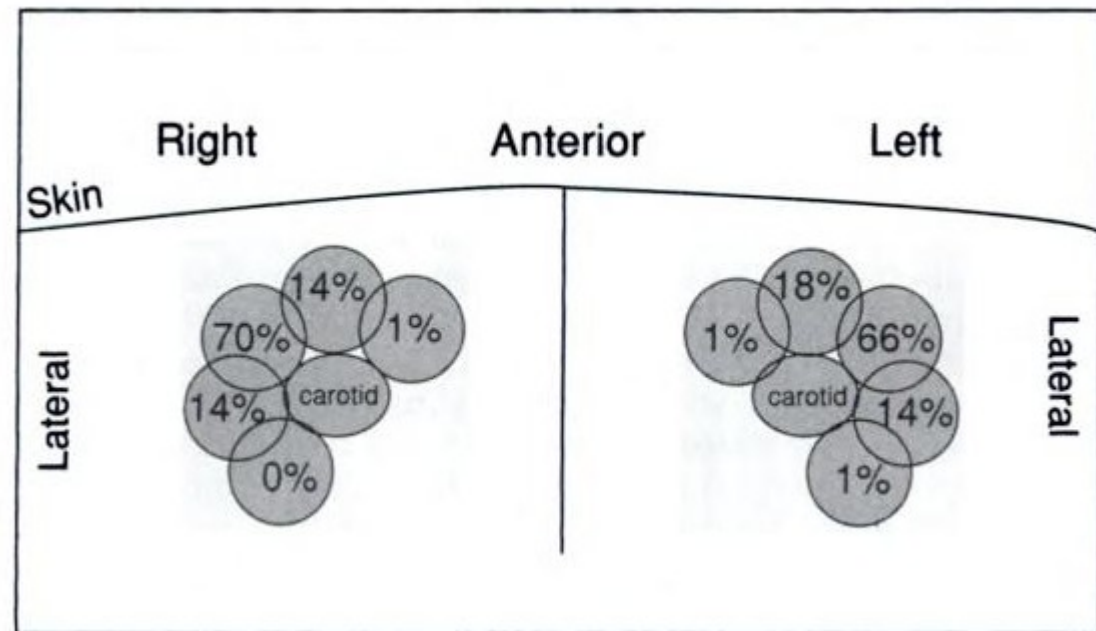
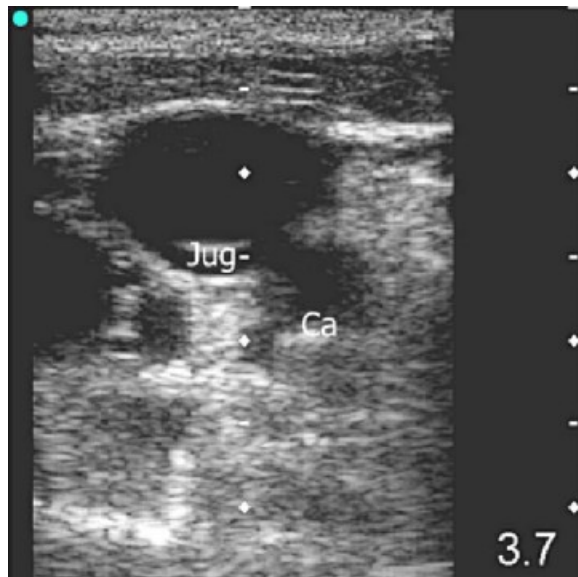
Complication	Frequency	
	Internal Jugular	Subclavian <i>percent</i>
Arterial puncture	6.3–9.4	3.1–4.9
Hematoma	<0.1–2.2	1.2–2.1
Hemothorax	NA	0.4–0.6
Pneumothorax	<0.1–0.2	1.5–3.1
Total	6.3–11.8	6.2–10.7

* Data are from Merrer et al.,⁵ Sznajder et al.,⁶ Mansfield et al.,⁸ Martin et al.,²² Durbec et al.,²³ and Timsit et al.²⁴ NA denotes not applicable.

L'échoguidage pour la pose des cathéters centraux Jugulaires Internes



Sonographic Guidance When Using the Right Internal Jugular Vein for Central Vein Access



L'échoguidage pour la pose des cathéters centraux Jugulaires Internes



Research

Open Access

Real-time ultrasound-guided catheterisation of the internal jugular vein: a prospective comparison with the landmark technique in critical care patients

Dimitrios Karakitsos¹, Nicolaos Labropoulos², Eric De Groot³, Alexandros P Patrianakos⁴, Gregorios Kouraklis⁵, John Poularas¹, George Samonis⁶, Dimosthenis A Tsoutsos⁷, Manousos M Konstadoulakis⁸ and Andreas Karabinis¹

Critical Care 2006; 10

Outcome measures in the ultrasound group versus the landmark group of patients

Outcome measures	Ultrasound group (n = 450)	Landmark group (n = 450)
Access time (seconds)	17.1 ± 16.5 (11.5 to 41.4) ^a	44 ± 95.4 (33.2 to 77.5)
Success rate	450 (100%) ^a	425 (94.4%)
Carotid puncture	5 (1.1%) ^a	48 (10.6%)
Haematoma	2 (0.4%) ^a	38 (8.4%)
Haemothorax	0 (0%) ^a	8 (1.7%)
Pneumothorax	0 (0%) ^a	11 (2.4%)
Average number of attempts	1.1 ± 0.6 (1.1 to 1.9) ^a	2.6 ± 2.9 (1.5 to 6.3)
CVC-BSI	47 (10.4%) ^a	72 (16%)

^aComparison of the outcome measures between the ultrasound group and the landmark group of patients ($p < 0.001$). Access time and average number of attempts are expressed as mean ± standard deviation (95% confidence interval). Success rate, carotid puncture, haematoma, haemothorax, pneumothorax, and CVC-BSI are expressed as the absolute number of patients and percentage of their group. CVC-BSI, central venous catheter-associated blood stream infection.

L'échoguidage pour la pose des cathéters centraux aussi pour les fémorales !!!



D'accord pour la voie jugulaire... mais la voie fémorale c'est facile !



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Table 2. Frequency of Mechanical Complications, According to the Route of Catheterization.*

Complication	Frequency		
	Internal Jugular	Subclavian	Femoral
Arterial puncture	6.3–9.4	3.1–4.9	9.0–15.0
Hematoma	<0.1–2.2	1.2–2.1	3.8–4.4
Hemothorax	NA	0.4–0.6	NA
Pneumothorax	<0.1–0.2	1.5–3.1	NA
Total	6.3–11.8	6.2–10.7	12.8–19.4

* Data are from Merrer et al.,⁵ Sznajder et al.,⁶ Mansfield et al.,⁸ Martin et al.,²² Durbec et al.,²³ and Timsit et al.²⁴ NA denotes not applicable.

L'échoguidage pour la pose des cathéters centraux aussi pour les fémorales !!!



Ultrasound-Guided Femoral Dialysis Access Placement: A Single-Center Randomized Trial

Mayoor V. Prabhu,* Deven Juneja,[†] Palepu B. Gopal,[†] Mohan Sathyanarayanan,[†]
Sreepada Subhramanyam,* Sridhar Gandhe,* and K. Shivanand Nayak*

Departments of *Nephrology and [†]Anesthesiology and Critical Care, Global Hospitals, Hyderabad,
Andhra Pradesh, India

Clin J Am Soc Nephrol 5: 235–239, 2010



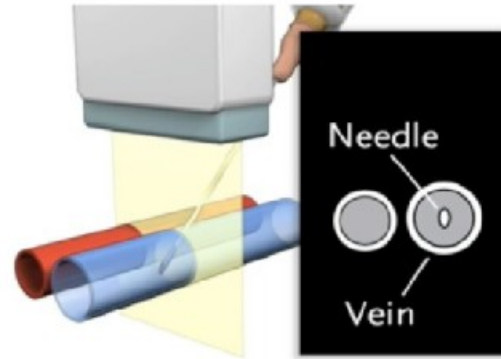
Characteristic	ALT Group (n = 55)	USG Group (n = 55)	P Value ^a
Success rate (%)	44 (80%)	54 (98.2%)	0.002
Successful first attempt (%)	30 (54.5%)	47 (85.5%)	0.000
Number of attempts (mean ± SD)	1.51 ± 0.6	1.16 ± 0.42	0.001
Complications (%)	10 (18.2%)	3 (5.5%)	0.039

^aP < 0.05 is considered statistically significant.

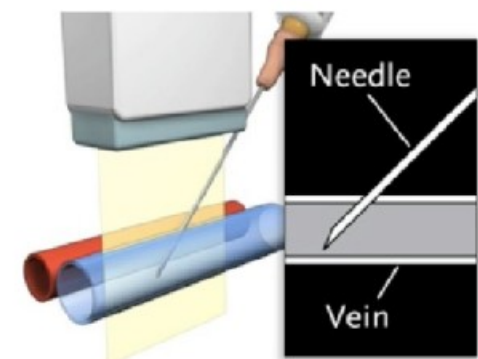


Technique de l'échoguidage

Echographe
portatif



Coupes court axe



long axe



Sonde avec guide



Autres intérêts en salle de dialyse...

- Echo repérage ou écho guidage pour la ponction de fistule
- Surtout pour les premières ponctions, pour apprécier le trajet, le diamètre et la profondeur de la FAV.
- Intérêt aussi pour les fistules au bras des patients obèses notamment pour éviter le risque de ponction artérielle
- Par le médecin ou par les infirmières

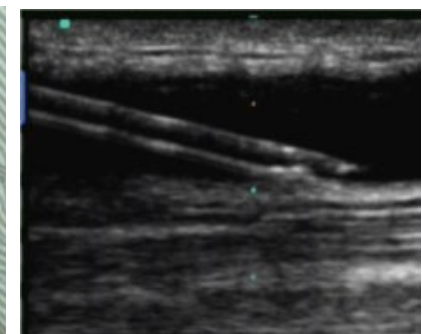
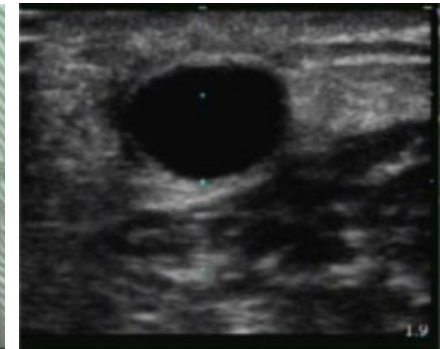
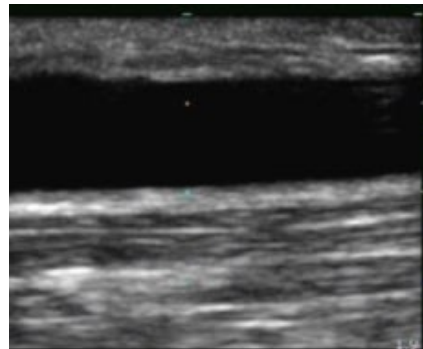
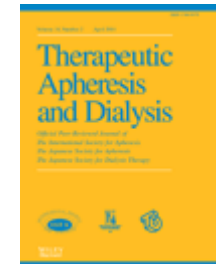
Autres intérêts en salle de dialyse...



Vascular access puncture under ultrasound guidance.

Hanafusa N1, Noiri E, Nangaku M.

Ther Apher Dial. 2014 Apr;18(2):213-4.



MERCI POUR VOTRE ATTENTION...



**OUI à l'échographe
dans tous
les services de dialyse pour :**

- poser des voies centrales
jugulaires ET fémorales**
- guider la ponction de la FAV**

