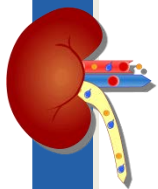


Buttonhole: une technique en perpétuelle évolution!

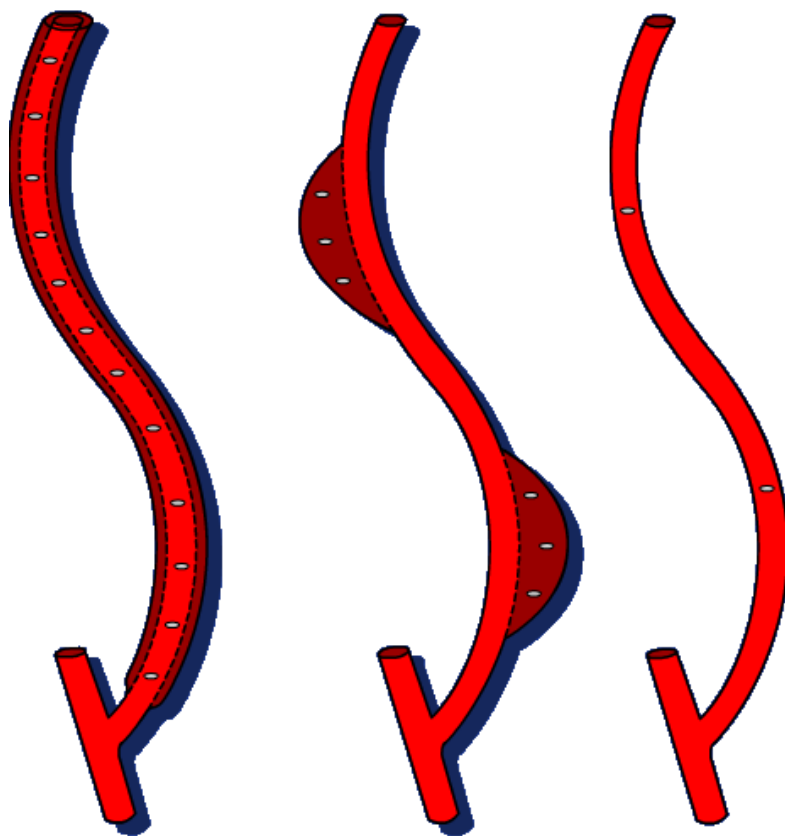
Tony Goovaerts

Cliniques Universitaires ST. Luc

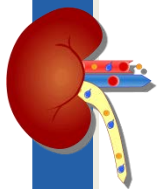
Bruxelles



Techniques de ponction

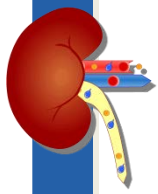


- “Echelle”
- Régionale
- Buttonhole



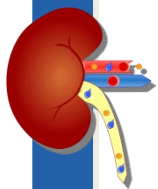
Ponction en "Echelle"





Raisons pour ne pas respecter la technique “Echelle”

- **Infirmières n’aiment pas rater les ponctions**
- **Patients n’aiment pas les ponctions ratées**
- **Population plus âgée**
- **Plus de patients diabétiques**

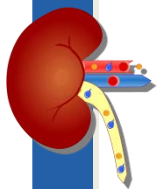


Ponction Régionale

Région de ponction réduite:

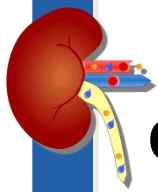
- **Paroi ultrafine**
- **Formation anévrysmale**
- **Sténose**
- **Suintement**
- **Temps de saignement plus long**





Buttonhole

- **Technique ayant plusieurs avantages comparée aux autres**
- **Infections!?**
- **Technique facile mais complètement différente**
- **Les infirmières doivent être formées à devenir “expertes”, utilisant des aiguilles mousses**
- **Protocoles stricts**
- **Technique qui continue à évoluer**

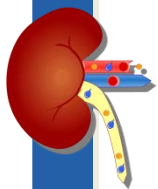


Diagnostic tests and interventions with the different cannulation techniques during 9 months

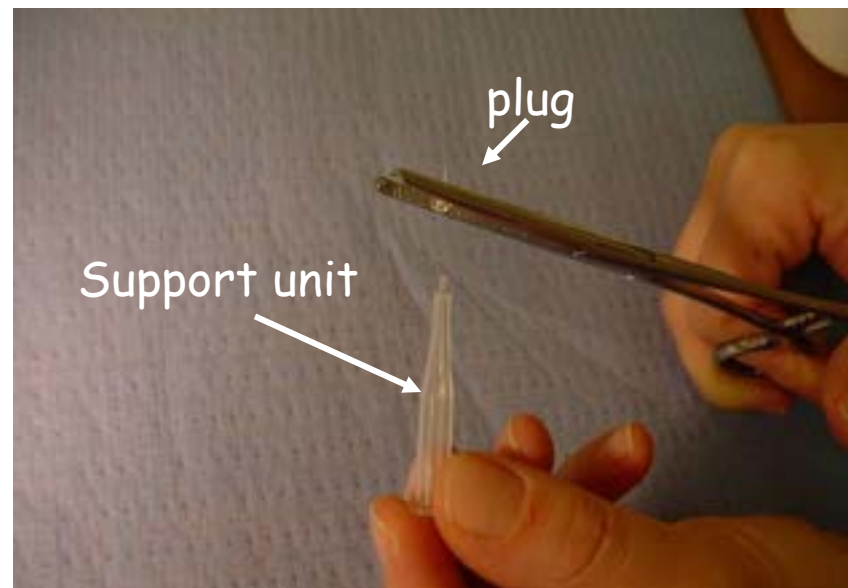
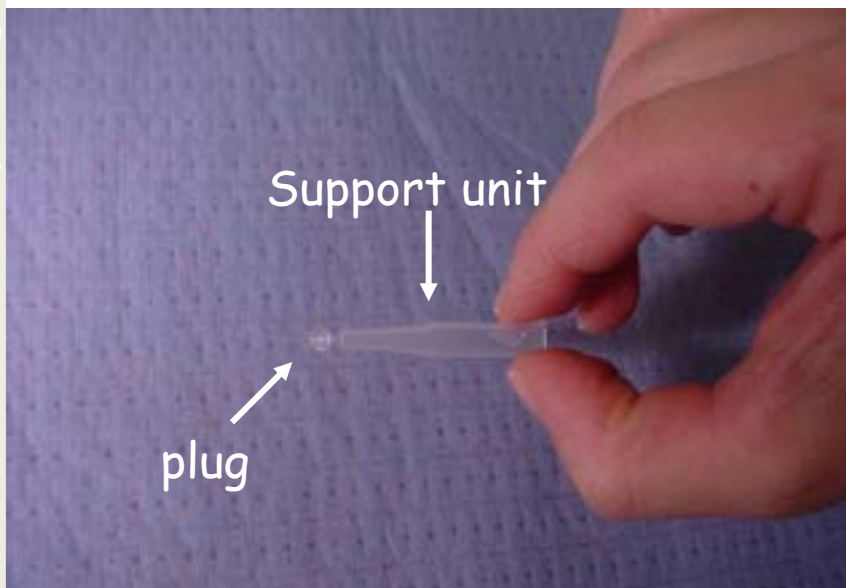
	Rope-ladder (n = 70)	Buttonhole (n = 75)	P -value
Patients with diagnostics tests	28	15	0.004
Diagnostics tests	73	24	
Duplex	14	11	
Fistulogram	51	10	
MRA	8	3	
Patients with interventions	21	6	0.001
Interventions	41	10	
Angioplastie	35	2	
Trombectomy	3	1	
Surgical revisions	3	3	
AB treatments because of access-related infections	-	4	

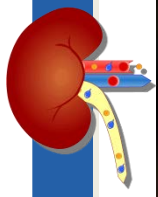
Formation du tunnel

- Procédure classique
- **Procédure 'Biohole'**
- Cathéter



BioHole Buttonhole Device*





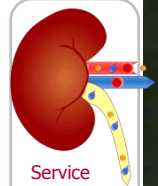
Service de néphrologie





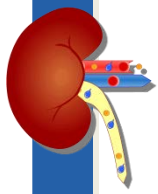
UCL

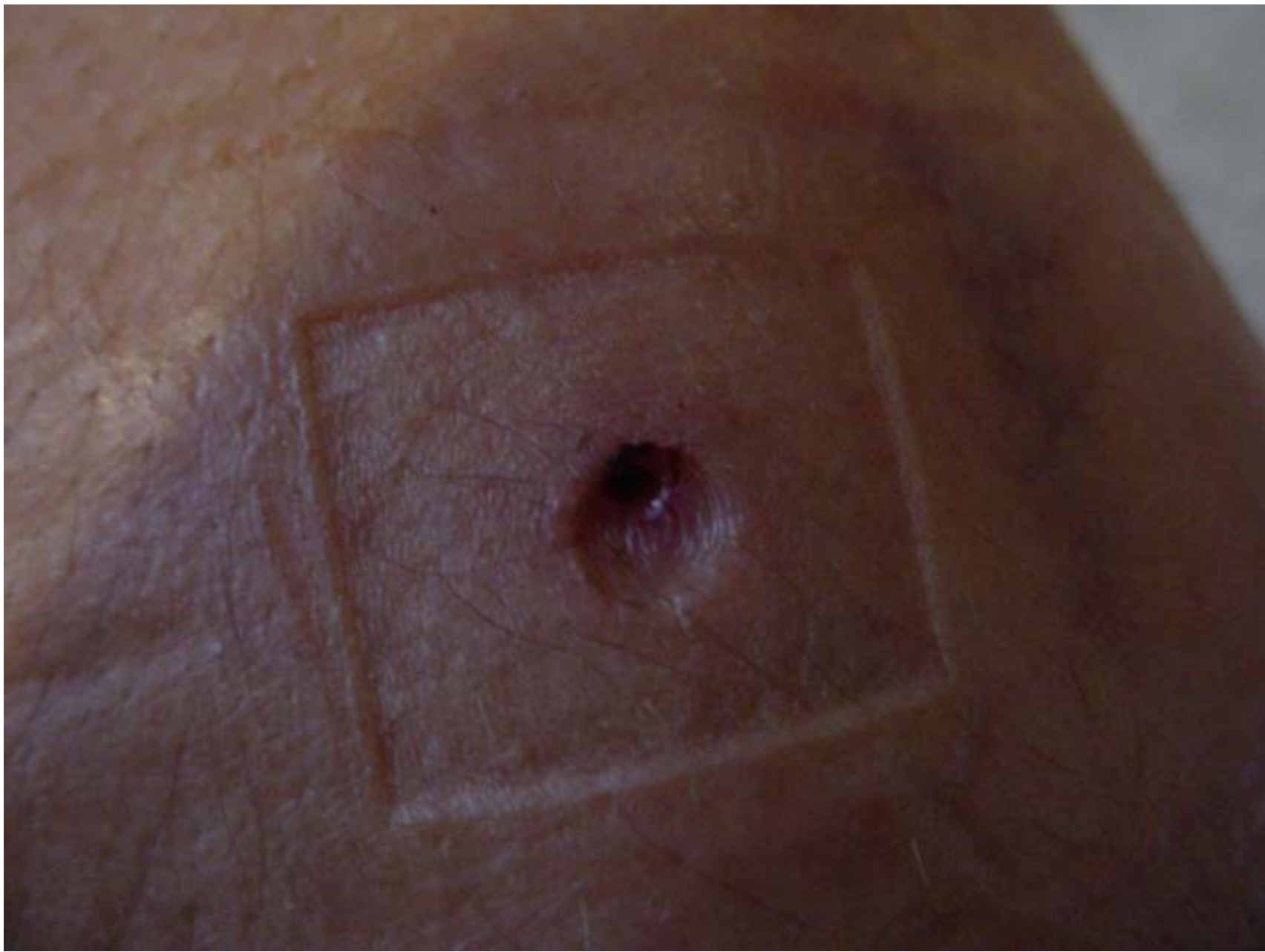
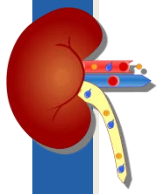
Cliniques Universitaires Saint-Luc - Bruxelles - Belgique

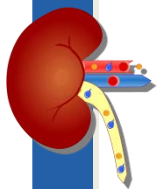


Service
de
Néphrologie









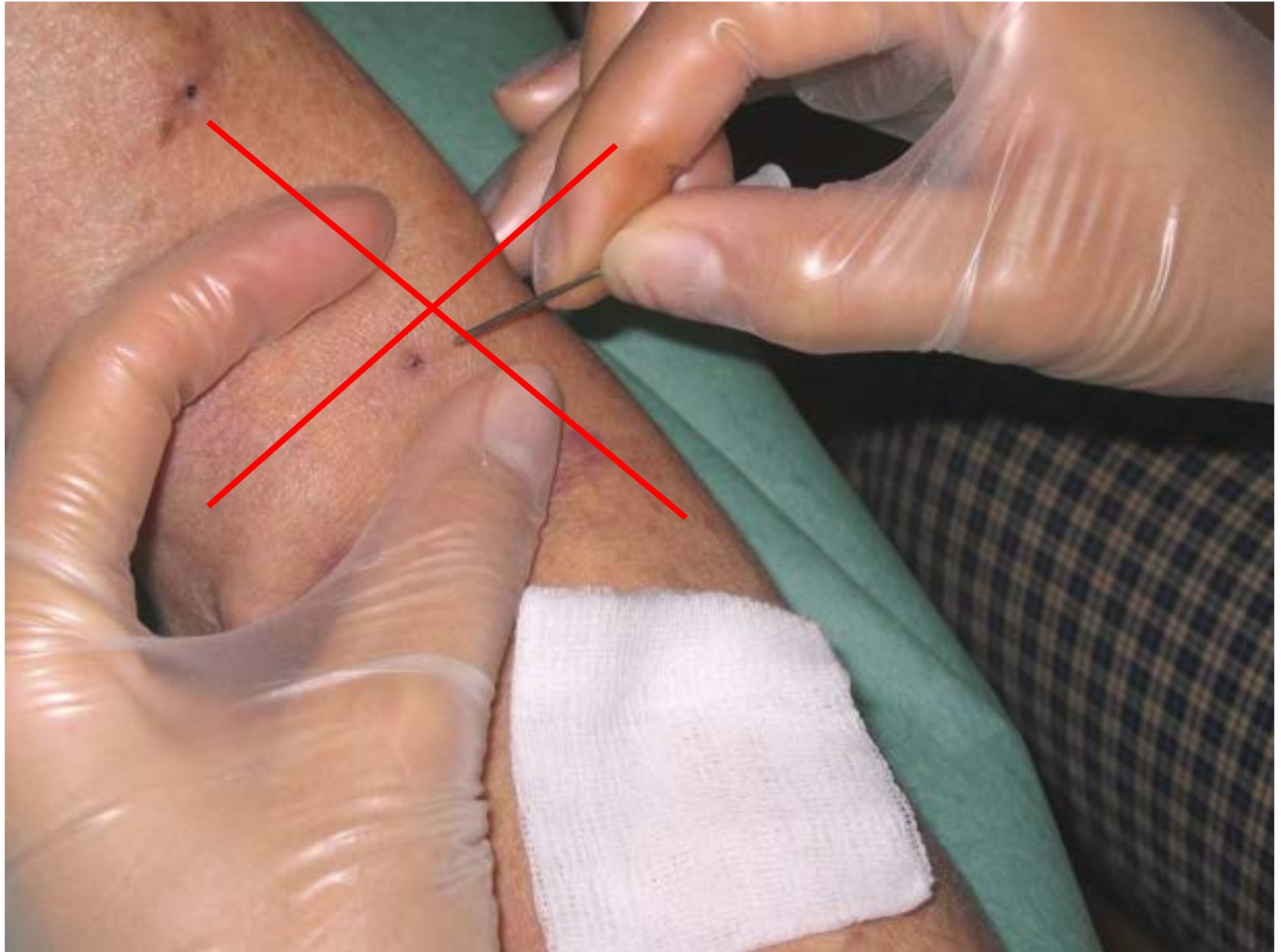
Avantages et désavantages du BioHole

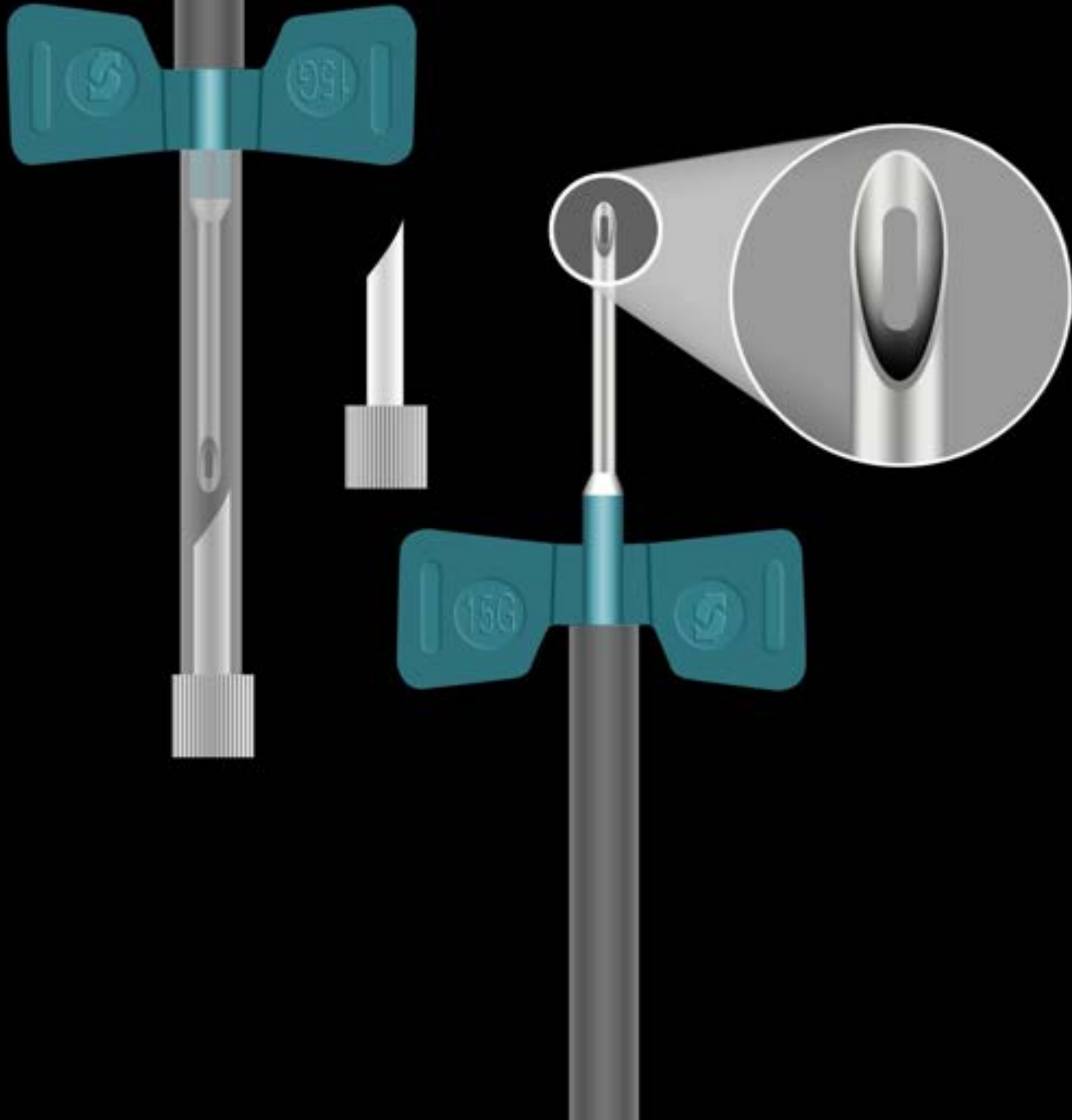
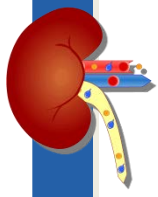
- **La même infirmière?**
- **Formation du tunnel plus rapide**
- **Meilleure formation du tunnel**

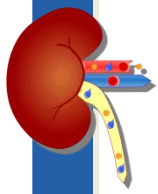
Mais...

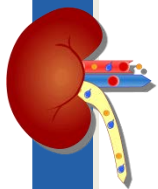
- **Une longueur seulement!**

Enlèvement de la croute



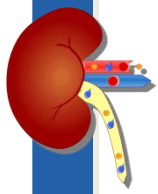


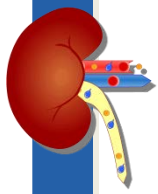


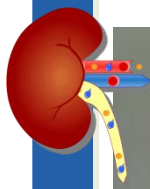


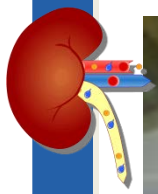
Ramollir les croutes

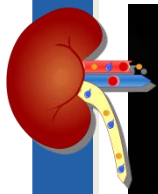
- **Sérum physiologique**
- **Gel alcoolique**
- **Emla**
- **Crème Chlorhexidine**
- **Savon désinfectant**
- **.....**

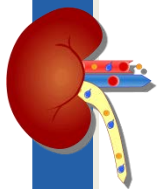












Points clés

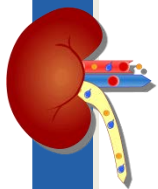
- Garrot?



- Effet 'trampoline'!

Mauvais angle!

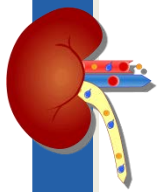
- **Bras toujours dans même position (coude et main)**
- **Angle de ponction doit être adapté à la profondeur du vaisseau**
- **Retirer l'aiguille en laissant le biseau à l'entrée du tunnel et rediriger vers l'entrée de la veine.**



Problème Général

Utilisation fréquente d'aiguilles tranchantes, ce qui peut causer un taux d'infection plus élevé

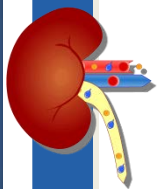
“Touch Cannulation”



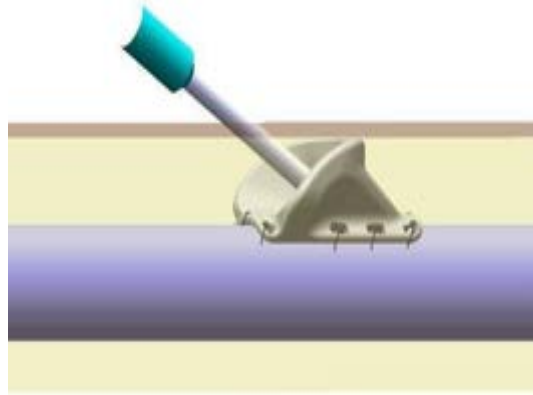
Service de néphrologie



Challenges de ponction



VWING VASCULAR NEEDLE GUIDE



- ▶ **VWING**
Surgically-placed,
subcutaneous vascular
needle guide

- ▶ **TARGET**
Serves as palpable target
to facilitate dialysis cannulation.

- ▶ **GUIDE**
Guides needle directly to vessel through
same pathway every time, rapidly
enabling use of blunt needles via
simplified buttonhole cannulation.



Vwing Applications

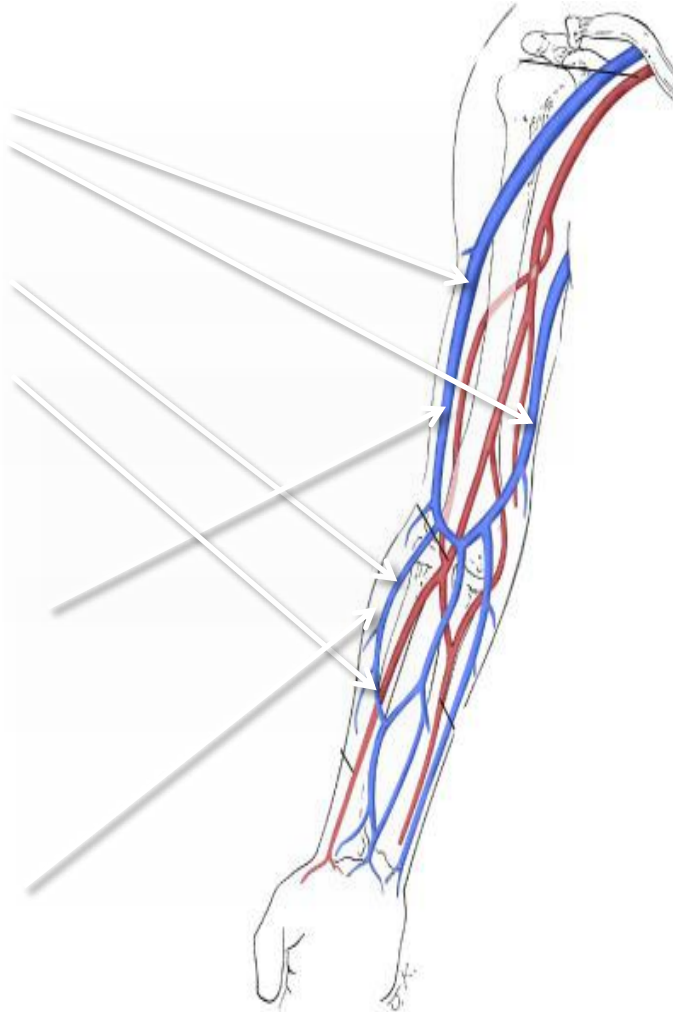
DEEP AVF
NON-TRANSPOSED BASILIC

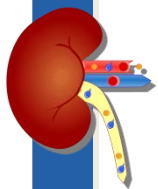
SHORT SEGMENT AVF

AVOID AREAS OF
ANEURYSM OR DAMAGE

SELF CANNULATION

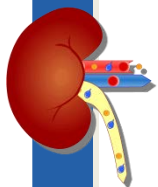
BUTTONHOLE CANNULATION





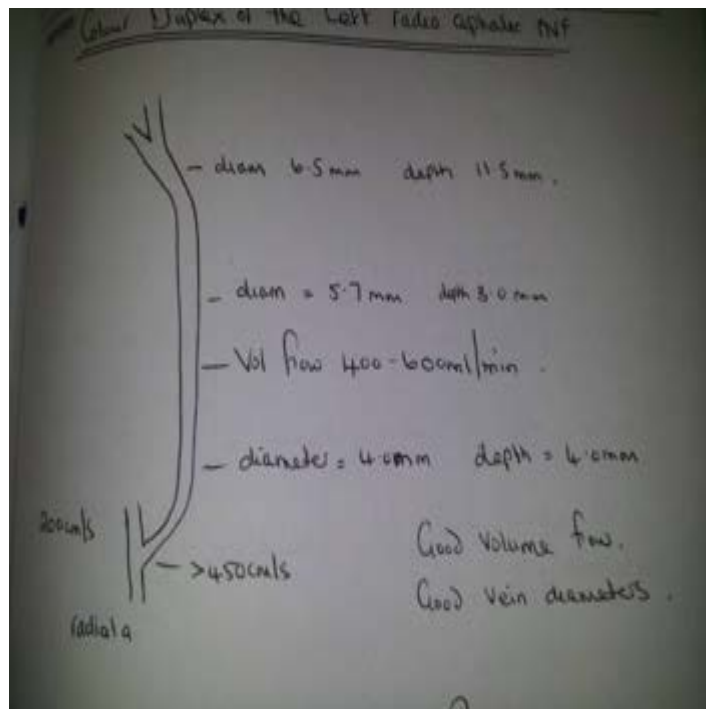
Différentes tailles

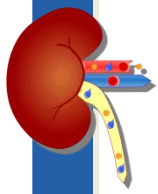




Autoponction

- ▶ Obese patient with inaccessible flowing fistula
- VWING implanted – fistula accessed
- Quickest to self-cannulate at dedicated home hemo training unit



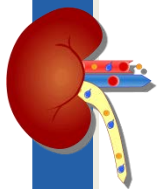


- Initial VWING implant has been used for over 3.6 years since June 2010

IMPLANT HISTORY	Patients	Devices
VWING Patient Total / Implanted VWING Total	141	216
Patient Implant Days / Device Implant Days	46,700 ²	72,500 ²
Cannulations	N/A	23,800 ²

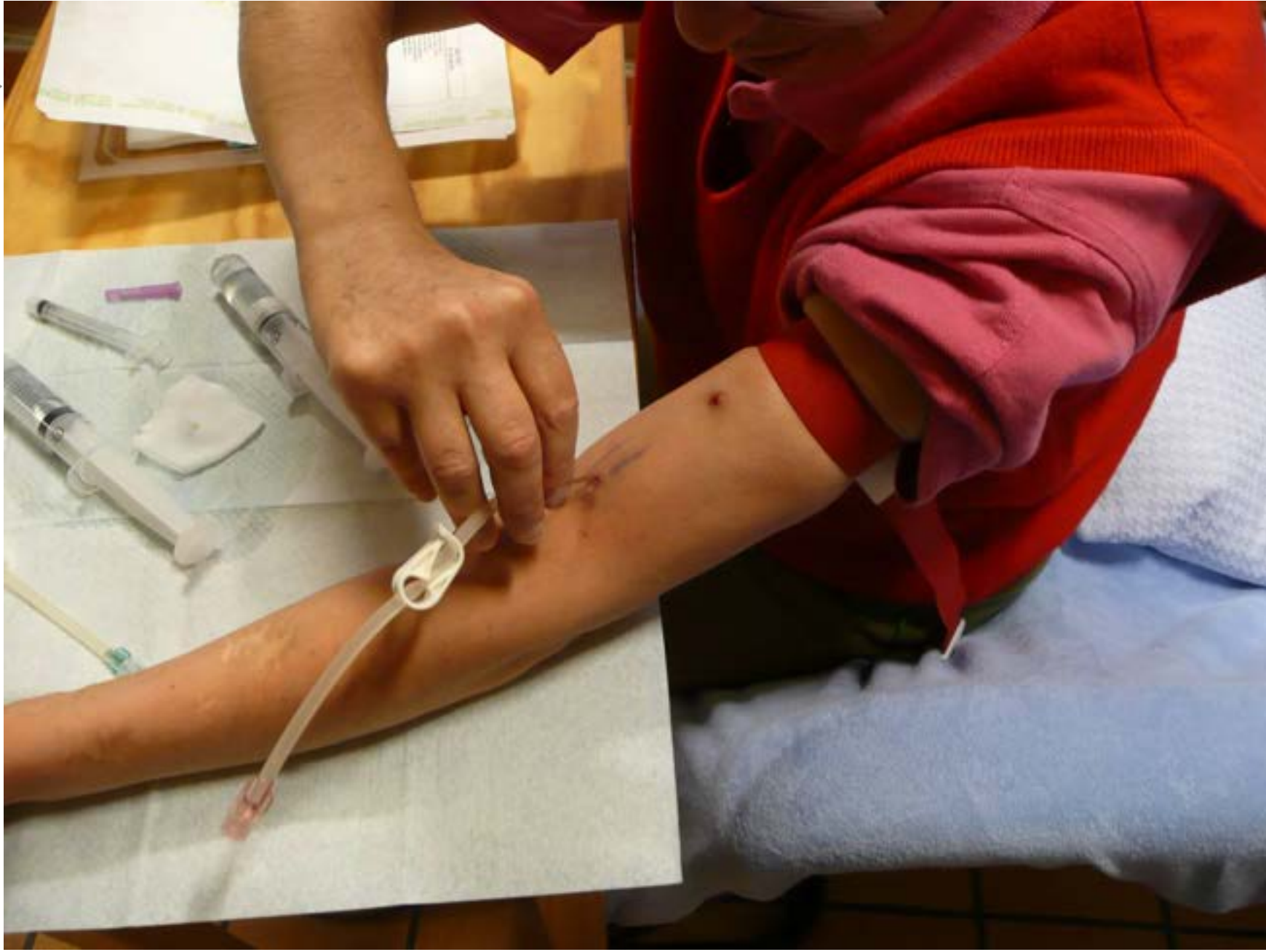
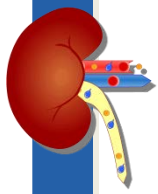
COMPLICATION RATES (per patient year)	Catheter (USRDS)	AV Fistula (USRDS)	VWING SAVE Study Rate ¹	VWING Overall Reported Rate ^{1,2}
Infection of Access	1.45	0.18	0.038	0.016
Sepsis	2.32	0.52	0.038	0.008

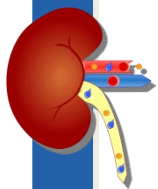
1 - Hospital-treated events 2 - Rates estimated from clinical trial reports and post-market surveillance



Démarrer un programme

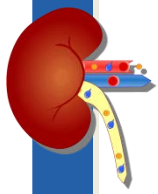
- **Petit groupe d'infirmières**
- **Petit groupe de patients**
- **Quel protocole?**
- **Intensifier**
- **Vigilance!!!!!!**
- **Infirmières de référence**
- **Promouvoir l'autoponction**



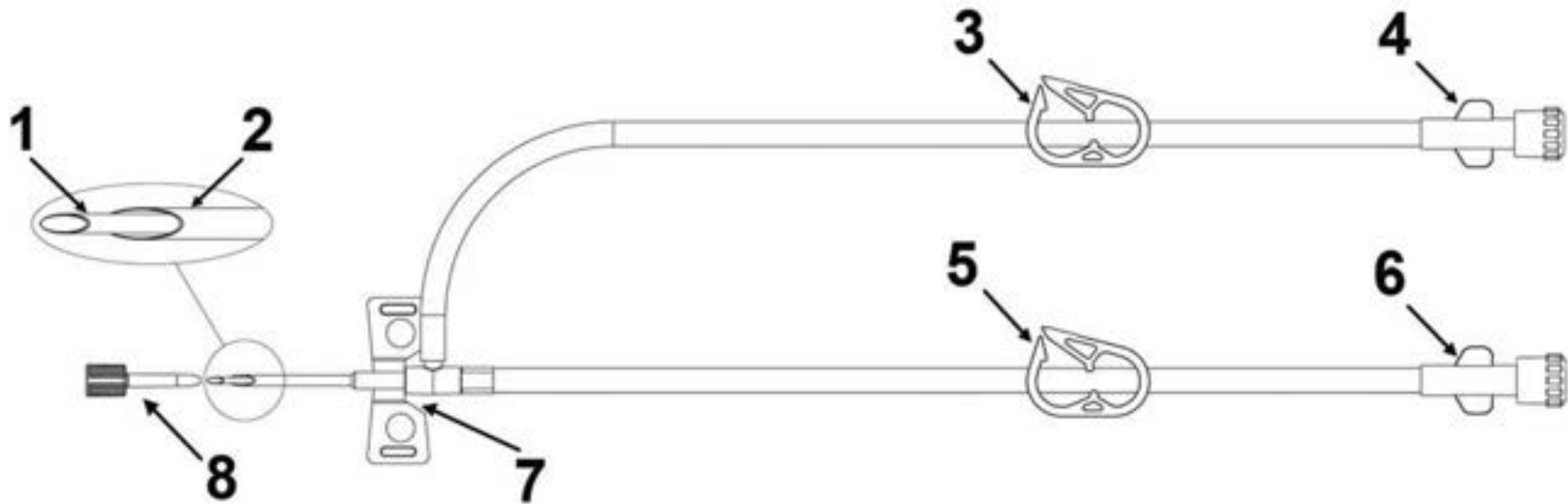


Touch Cannulation

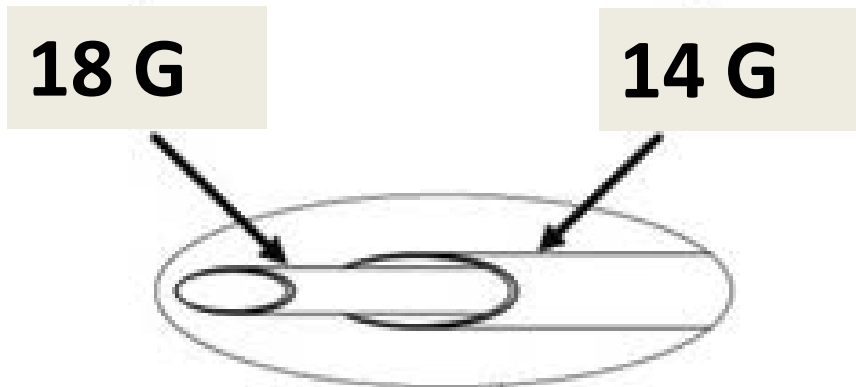


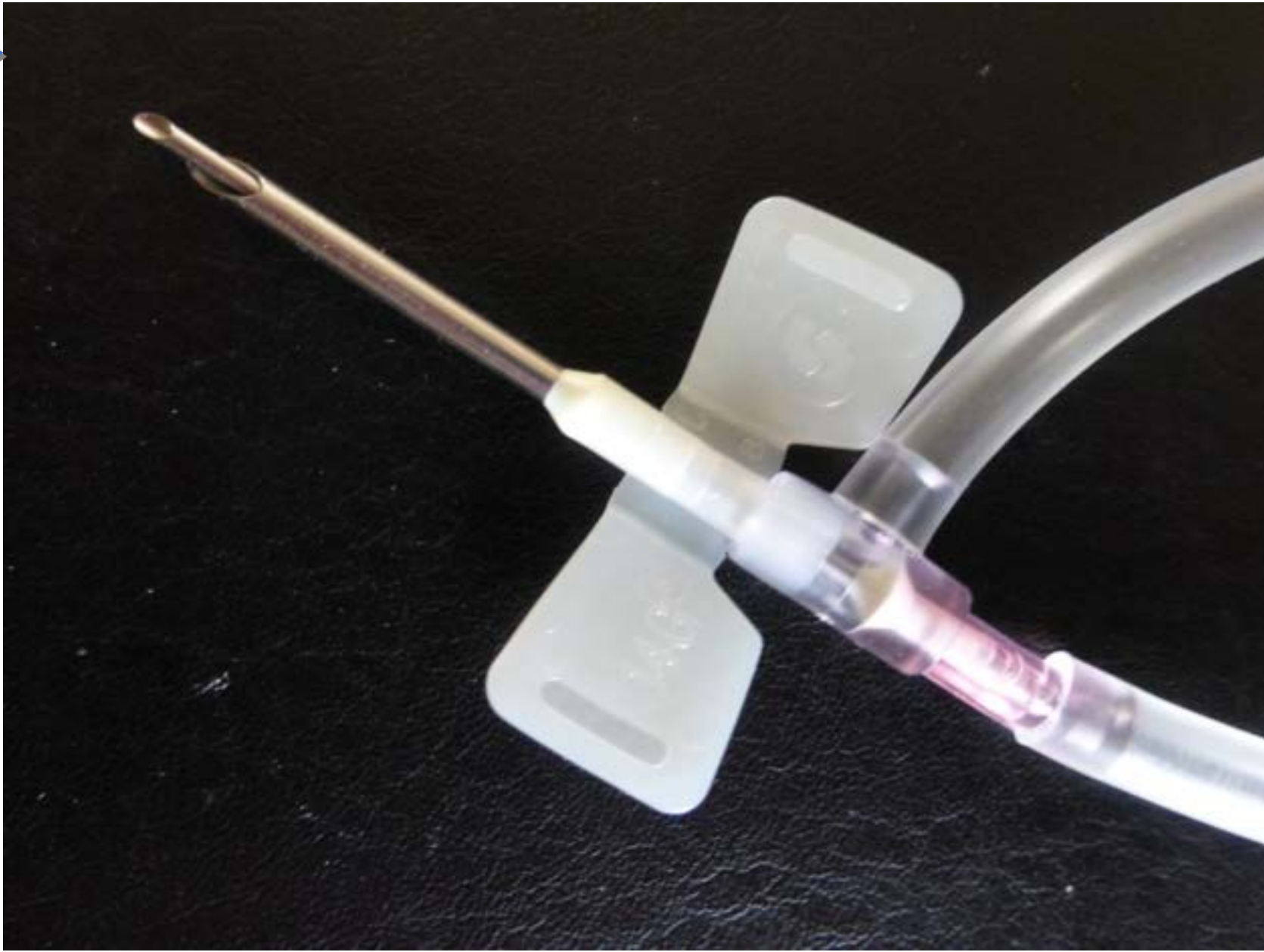
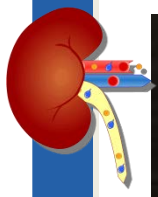


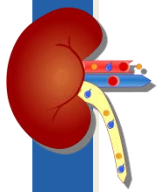
Aiguille à bout mousse "double lumen"



Aiguille à bout mousse "double lumen"



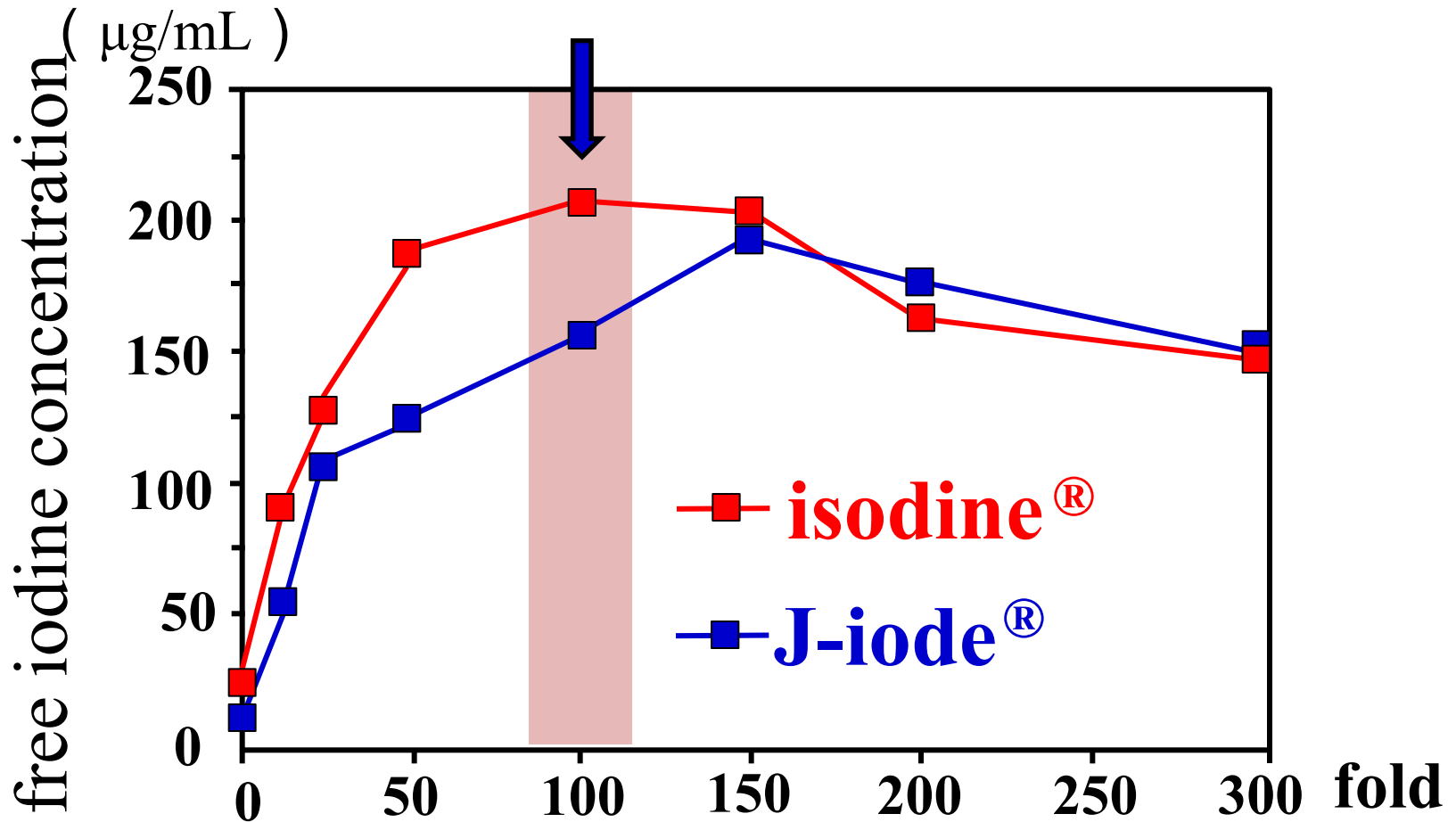




Caractéristiques de la méthode “moist-healing”

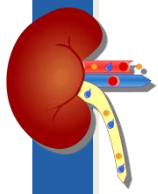
1. Le saignement doit être arrêté.
2. Les sites de ponction doivent être désinfectés avec de l’isobétadine diluée
3. Les sites doivent rester humides.

Taux de dilution de l'isobétadine et la concentration libre de l'iode



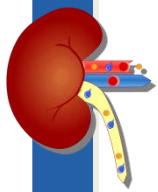
Matsuoka et al: The 10th peritoneal dialysis conference

L'activité bactéricide de l'isobétadine est la plus élevée, diluée 100 fois



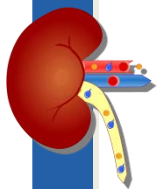
bacterias	Activité bactéricide		
	original solution	50-fold dilution	100-fold dilution
Staphylococcus aureus	No	No	Yes
Staphylococcus epidermidis	No	No	Yes
Enterococcus	No	No	No
E. Coli	Yes	Yes	Yes
Pseudomonas aeruginosa	Yes	Yes	Yes

Matsuoka et al: The 10th peritoneal dialysis conference



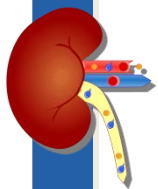
Immédiatement après désinfection du site de ponction, application du pansement chirurgical



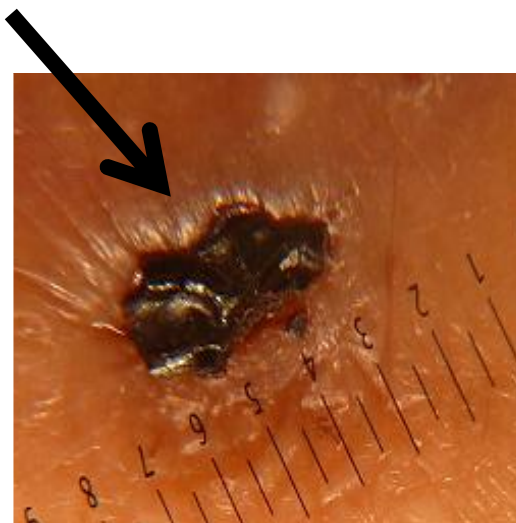


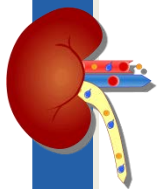
Le pansement est enlevé 24 h plus tard



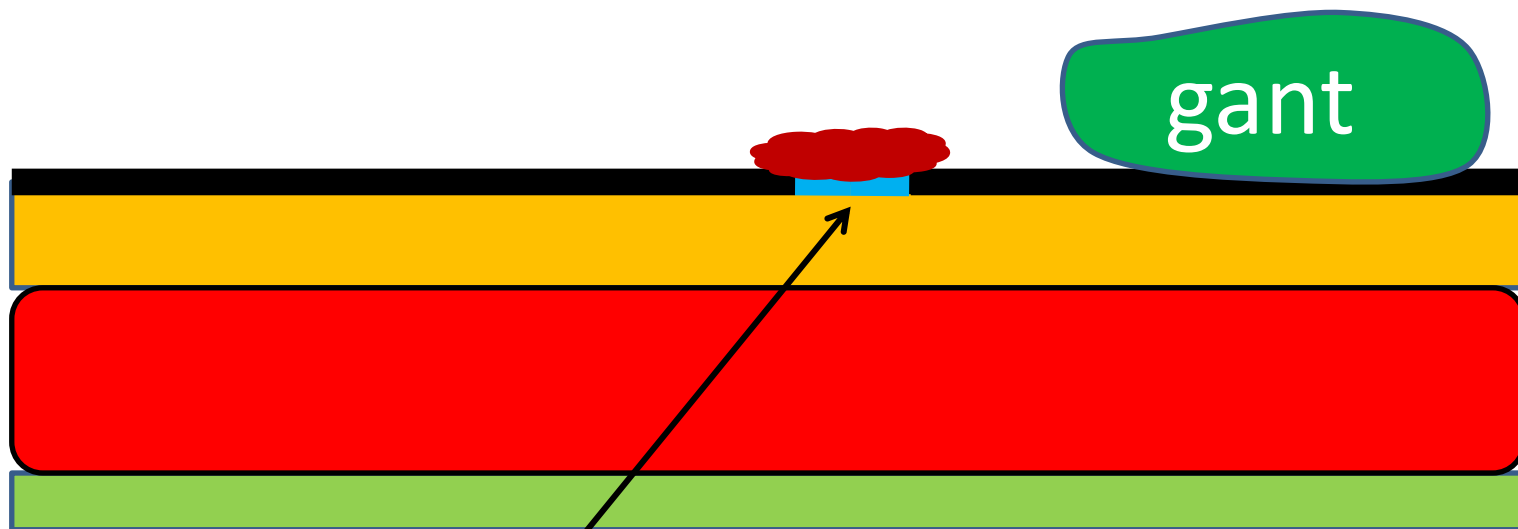


Résultats de la méthode 'Moist-healing'



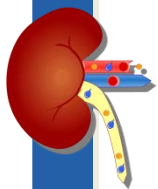


Enlèvement de la croute

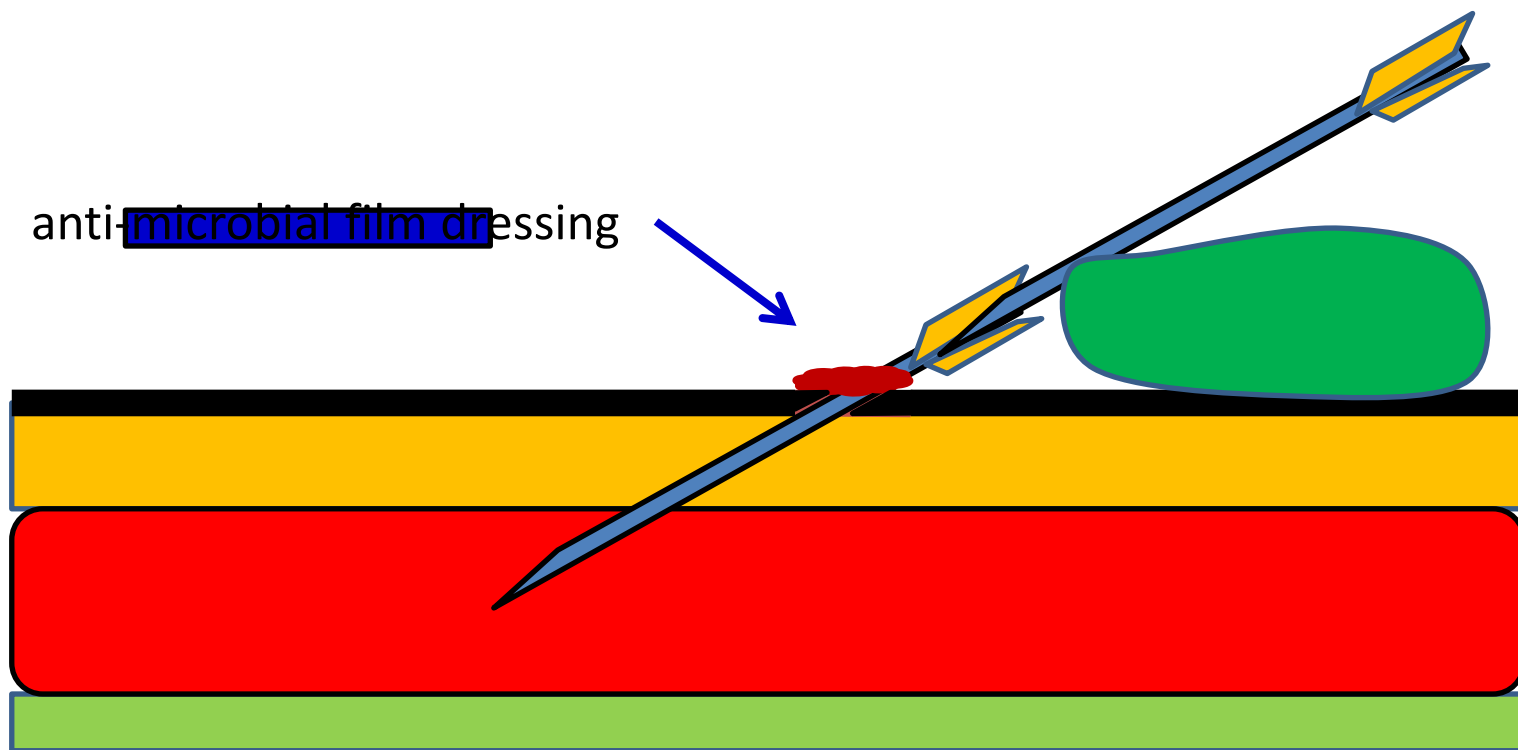


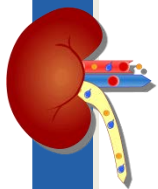
gant

Stratum corneum

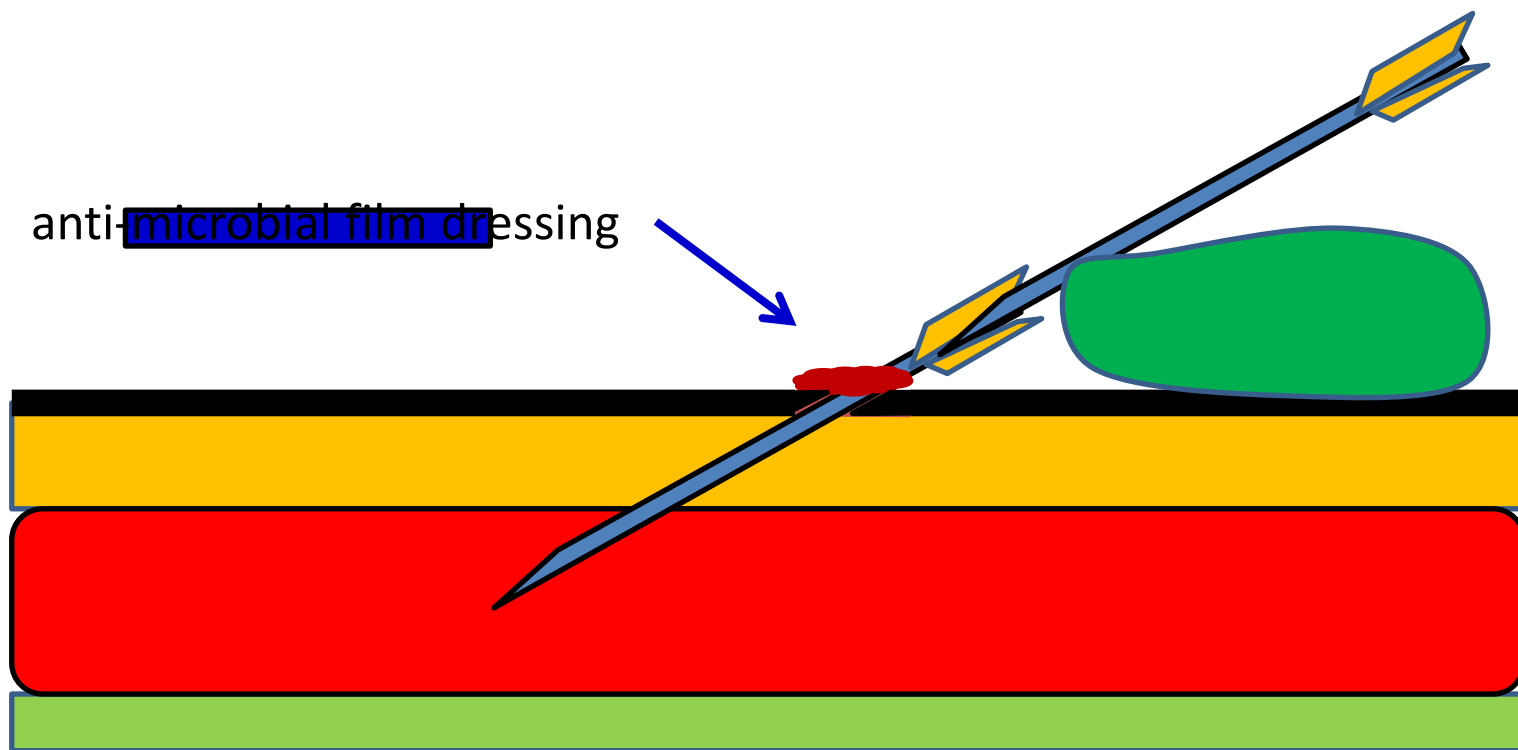


< 48 hours after formation of fibrin clots >

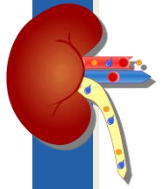




< 48 hours after formation of fibrin clots >



Résultats de l'examen histologique de la fine membrane



nuclei

Extérieur

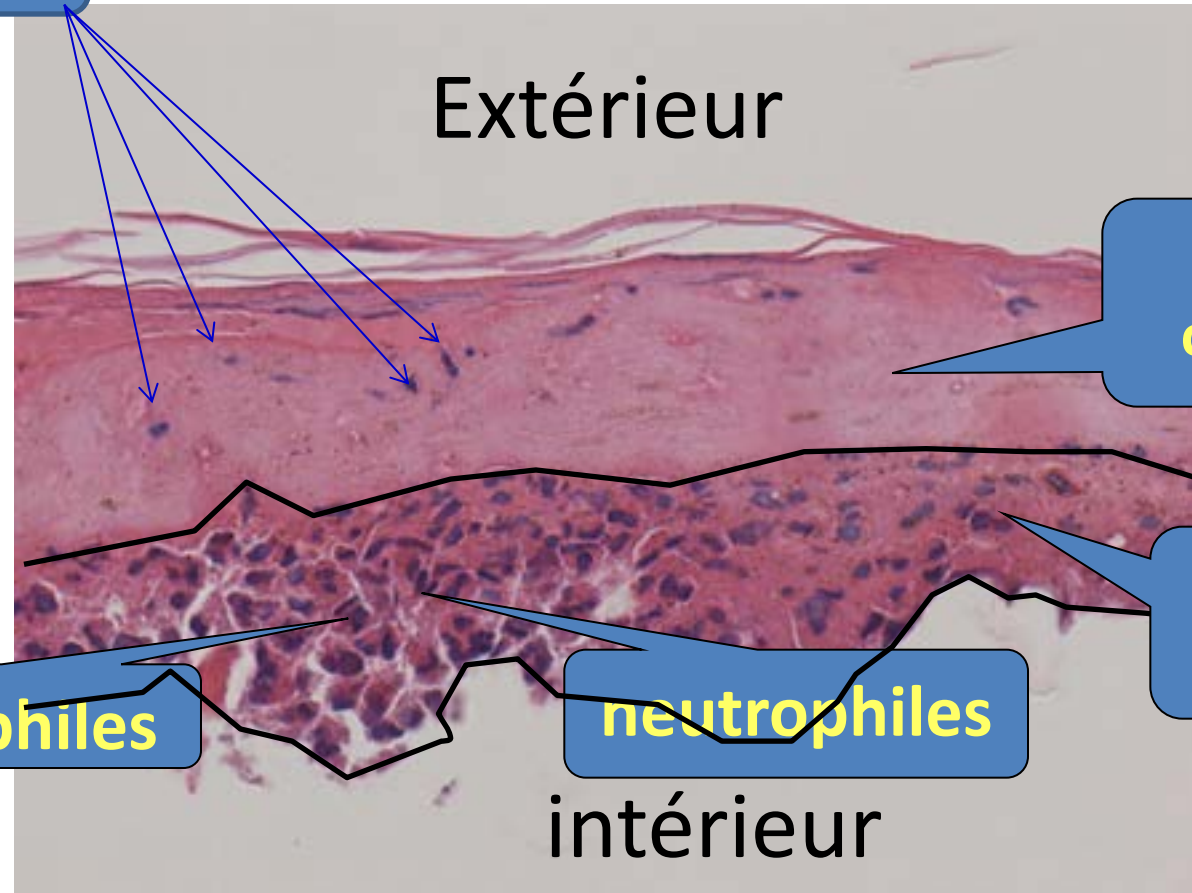
Stratum corneum

Dépôts fibrine

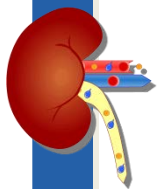
neutrophiles

neutrophiles

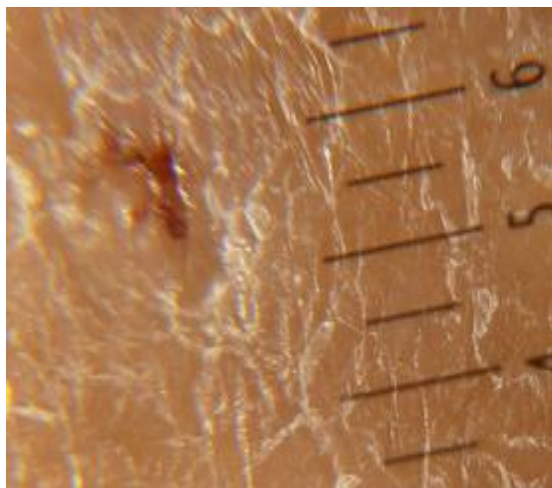
intérieur



Peau désinfectée avec isobétadine non-diluée et diluée

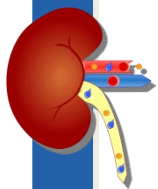


Isobétadine non-diluée



Isobétadine Diluée





Conclusion

- **Buttonhole is much better than “Area cannulation”**
- **Technique qui évolue toujours**
- **Protocols stricts afin d’éviter des complications**
- **L’utilisation d’aiguilles mousses réduite au minimum**
- **Infirmières de référence?**
- **Etude multicentrique?**