Changement de cathéter: comment je fais?

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Plan

Pourquoi changer un cathéter ?

- Cathéter transitoire non tunnelisé
- Infection
- Dysfonction
- Mauvaise fixation
- Nécrose du trajet

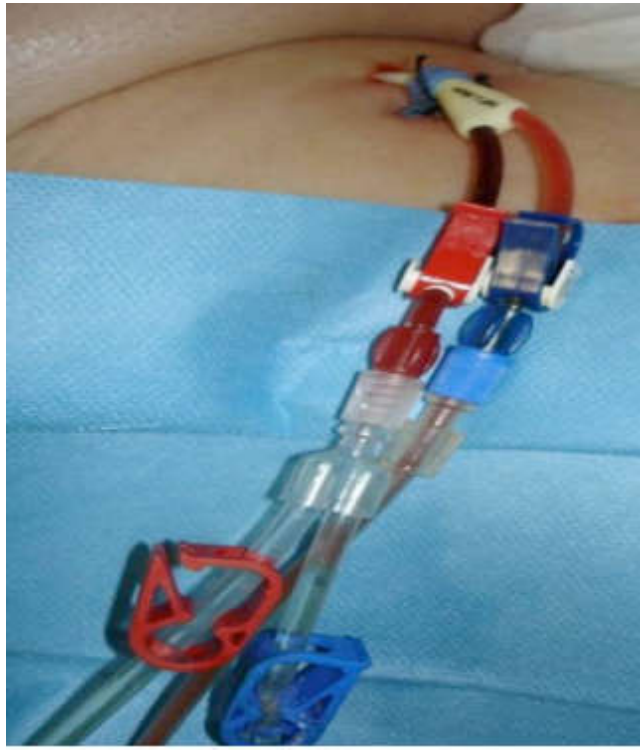
Stratégies selon indication

- Même site même tunnel
- Même site, tunnel décalé
- Autre site

Recommandations - Arbre décisionnel

Conclusions

Indication de changement: cathéter transitoire

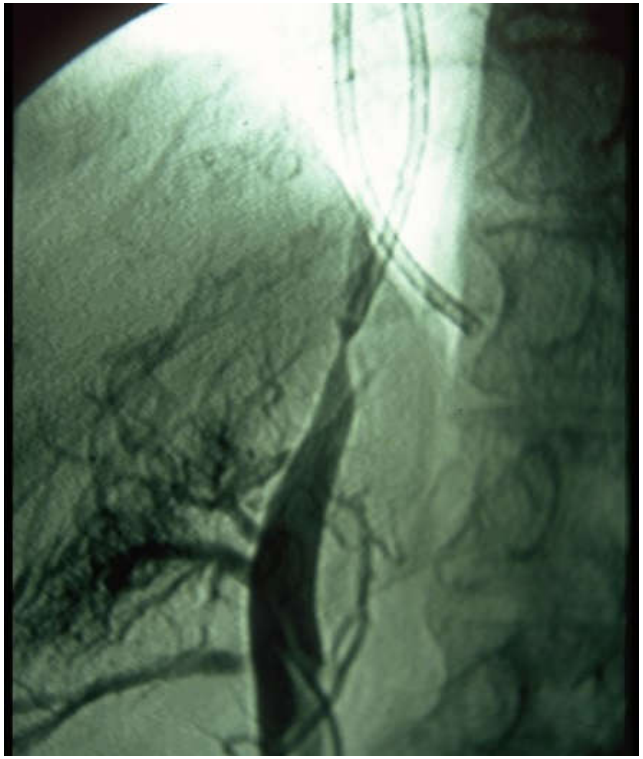


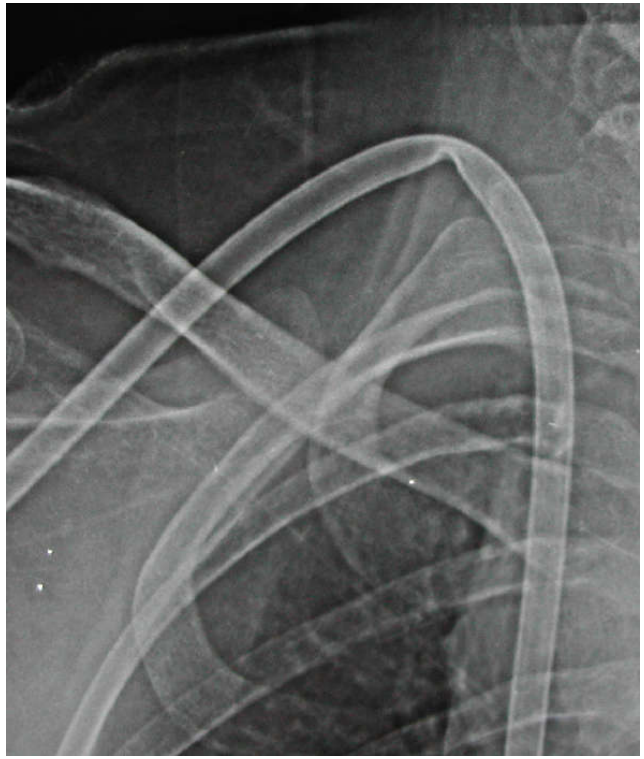
- Stratégie 1:
  - Cathéter transitoire jugulaire interne droit
    - Meilleur débit ?
    - Meilleure hygiène ?
    - Moins de thrombose ?
    - Pansement dans le cou gênant
    - Changement sur guide possible pour tunnelisé
- Stratégie 2:
  - Cathéter transitoire fémoral
    - Préservation du réseau cave supérieur en vue de KT tunnélisé et/ou FAV
    - Risque thrombose iliaque en vue de greffe

Indication de changement: les infections

- Tunnelite sévère, résistante, récidivante
- Bactériémie résistante/récidivante

Indication de changement: dysfonctions





- Plicature
- Sténose / thrombose veineuse
- Manchon de fibrine

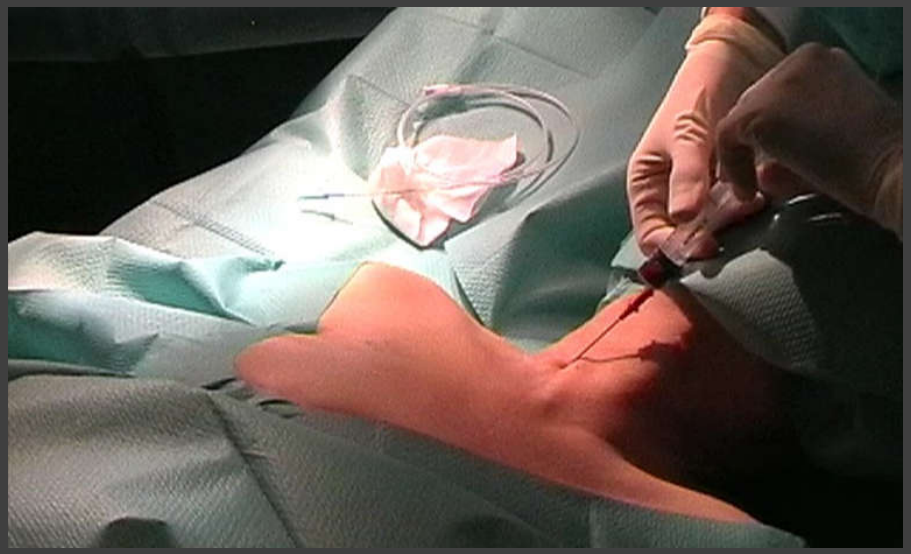
Indication de changement: défaut de fixation,

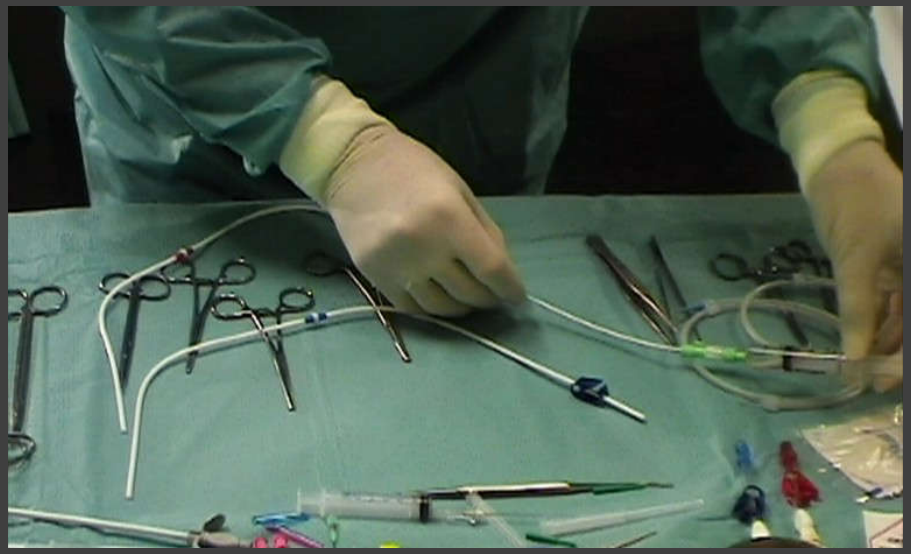
- Cuff non habité
- Arrachement

- Nécrose cutanée du tunnel

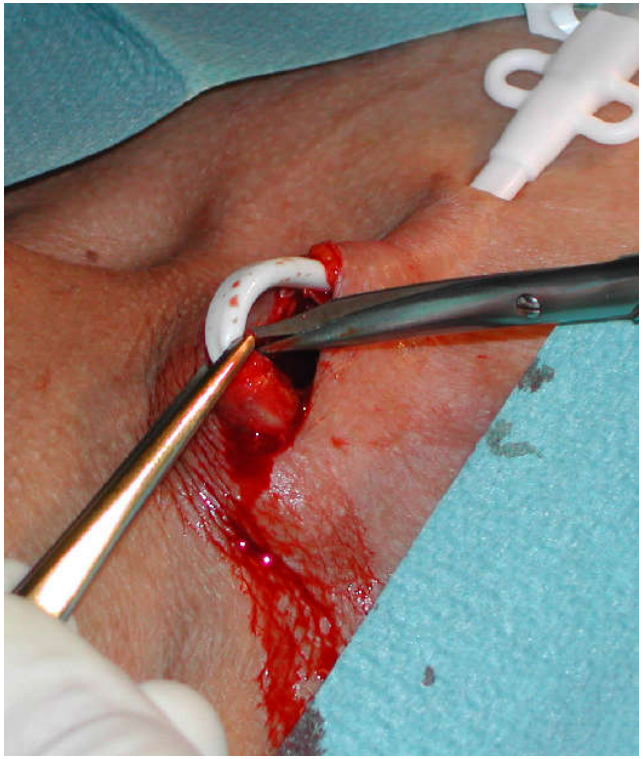
Bloc opératoire

- Opérateur entraîné++
- Aide opératoire
- Asepsie chirurgicale
- Bloc opératoire (scope, SaO2, chariot d’urgence)
- **Scopie**
- **Echographie**
- Anesthésie locale





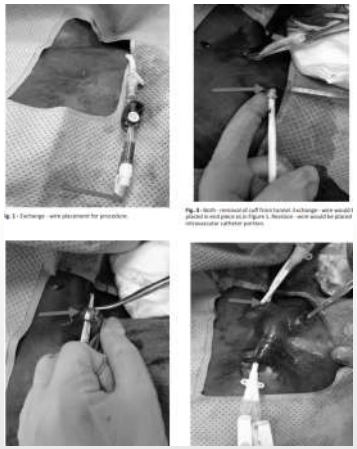
Ablation des cathéters tunnélisés



- Pour les KT avec « cuff »
- Bloc opératoire
- Anesthésie locale
- Trendelenburg
- Incision du tunnel, dissection du cuff
- Suture, décubitus 60 minutes,
- pansement étanche++ (risque d'embolie gazeuse)

Results: There were 41 exchanges and 56 revisions out of the 97 procedures performed. There were eight infections (documented by positive blood culture) in the exchanges (19.5%) and one in the revision group (1.8%). The need for an additional procedure due to malfunction was 10 in the exchange (24.4%) and 10 (17.8%) in the revision group.
Conclusions: Revision is a clearly superior procedure with regard to infection and more data need to be gathered as to whether it will decrease repeat procedures.

Le changement de KT avec un nouveau tunnel protège des infections



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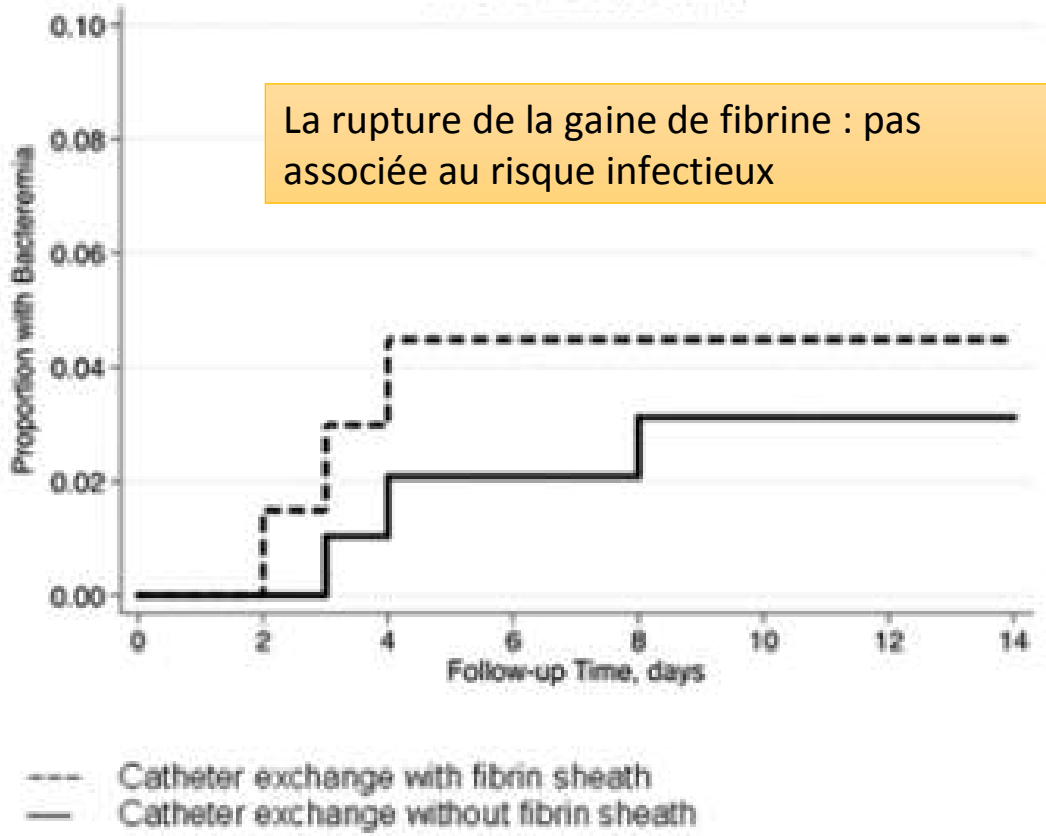
ORIGINAL ARTICLE

Treatment of tunneled dialysis catheter malfunction: revision versus exchange

Jackson Wang, Tuan A. Nguyen, Andrew I. Chin, Jamie L. Ross
University of California, Davis School of Medicine, Davis Medical Center, Sacramento, California - USA

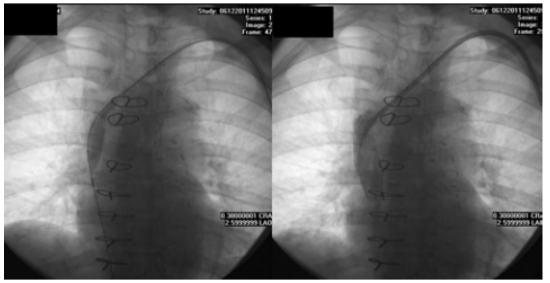
TABLE I - Exchange versus revision procedures

Exchange procedure	Revision Procedure
- Sterile technique	- Sterile technique
- Place wire into existing catheter lumen (Fig. 1)	- Incision over old venotomy site
- Loosen subcutaneous cuff until catheter slides (see Fig. 3 for cuff exposure)	- Bluntly dissect catheter up from venotomy site and strip fibrin sheath (Fig. 2)
- Under fluoroscopy guidance slide out catheter and as you are doing this inject with contrast if desired Intervene if able through the catheter	- Cut catheter about 2 cm on the tunneled side. Remove tunneled portion with blunt dissection (Fig. 3)
- Remove old catheter over the wire	- Create new tunnel and exit site heading toward the existing venotomy site (Fig. 4)
- Place new catheter over the wire using the same vein and tunnel and exit site	- Place wire into intravascular portion of the existing catheter and exchange the catheter for an 11 French angiographic sheath (Fig. 4)
- May need thrombin gel in existing tunnel since it had been disrupted and repair as usual	- Pull new catheter through new exit site and into the old venotomy site (Fig. 4)
	- Use contrast to evaluate the presence of pathology and Treat through 11 French sheath as needed (Fig. 5)
- Exchange 11 French sheath for a 16 French peel away sheath and fed catheter into the peel-way sheath (Fig. 6)	- Recommend thrombin gel in old tunnel and repair venotomy site and new exist site as usual



La rupture de la gaine de fibrine : pas associée au risque infectieux

Fig. 3 - Comparison of time to bacteremia episode between catheter exchange groups with and without fibrin sheath disruption.



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ORIGINAL ARTICLE

Tunneled dialysis catheter exchange with fibrin sheath disruption is not associated with increased rate of bacteremia

Amanda M. Valliant[1], Muhammad K. Chaudhry[1], Alexander S. Yevzlin[1], Brad Astor[1,2], Micah R. Chan[1]

Conclusions: This study demonstrates that there is no significant increase in bacteremia and subsequent catheter dysfunction rates after fibrin sheath disruption compared to simple over the wire exchange. These results are encouraging given the large numbers of patients utilizing tunneled catheters for initial hemodialysis access and the known rates of fibrin sheath formation leading to catheter failure.

La rupture de la gaine de fibrine : pas associée au risque infectieux et de dysfonction

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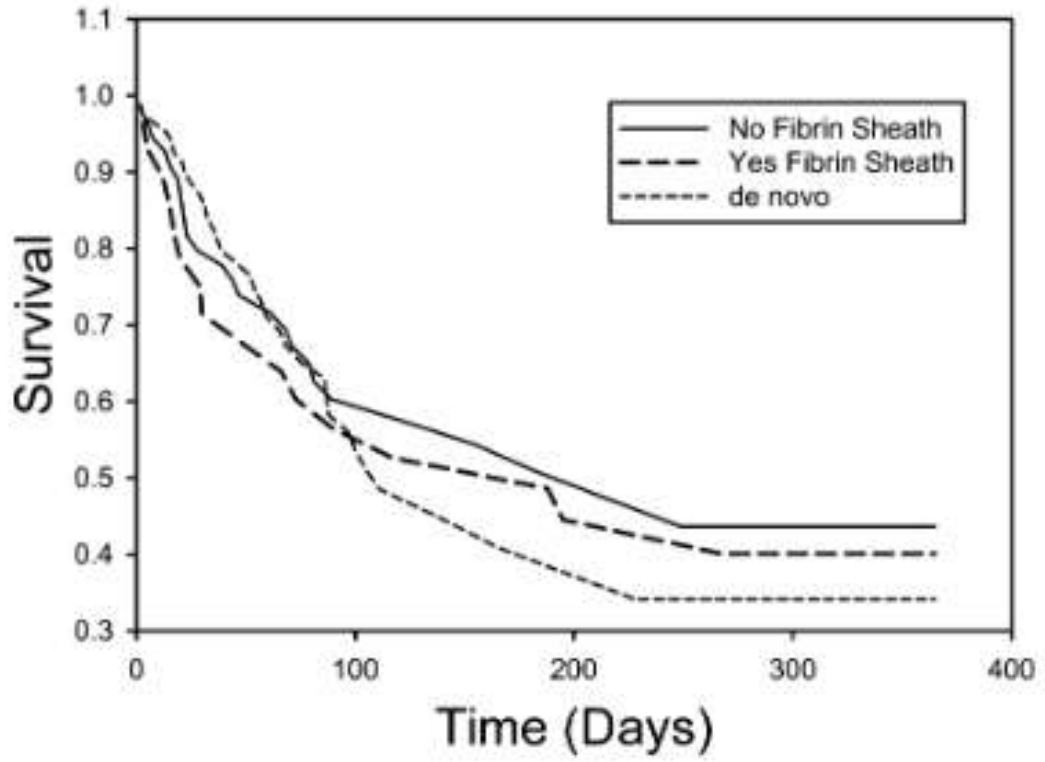

FIG. 2. 1-year intervention-free survival curve for catheter procedures.

Conclusion

The presence of fibrin sheath is common and it should be evaluated when performing tunneled hemodialysis catheter exchange. If the fibrin sheath is treated appropriately, there is no increased incidence in subsequent catheter dysfunction or infection compared with patients without a fibrin sheath.

Seminars in Dialysis

Investigation

ASDN

Fibrin Sheath and its Relation to Subsequent Events after Tunneled Dialysis Catheter Exchange

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TABLE 3. Patient outcomes in the three groups using Pearson chi-square and *t*-test

Variable	Catheter exchange (with fibrin sheath) $n = 28$	Catheter exchange (no fibrin sheath) $n = 56$	De novo catheter placement $n = 84$	*p*-value
Infection	7%	9%	6%	0.8
Dysfunction	60%	43%	33%	0.09
Mean time to event (days)	135 ± 191	136 ± 165	60 ± 50	0.08

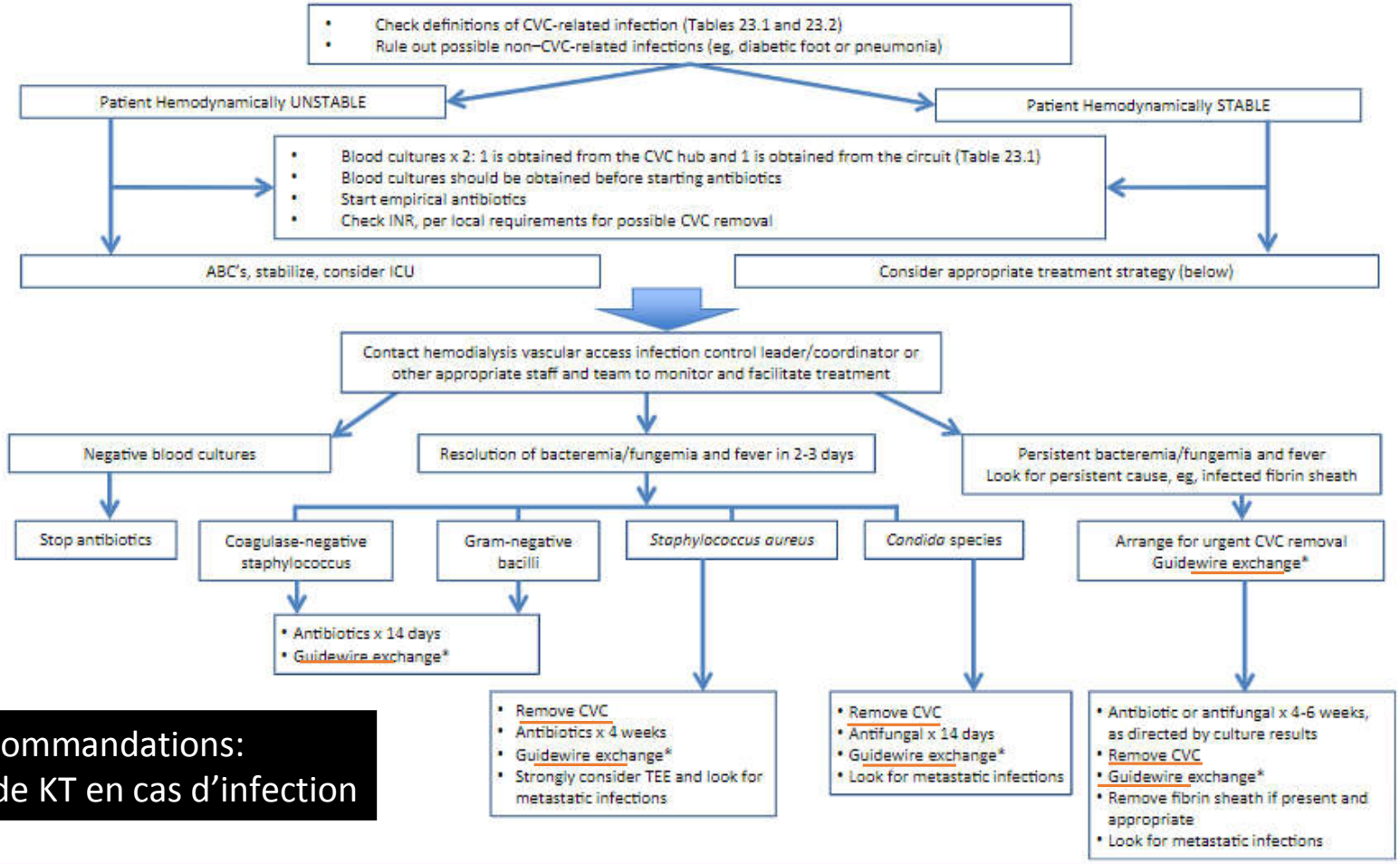

Figure 25.1. Algorithm for CVC-related infection. Special consideration: if the CVC must be salvaged (eg, no other option, embedded, etc), antibiotic lock with concurrent systemic antibiotic may be considered. *If appropriate—that is, no purulence or other signs of infection at exit site or tunnel if exchanging over same site. For tunnel infections, if there is purulence or other signs of infection at exit site or tunnel, exchange may be possible over new noninvolved insertion site using the same side to preserve access. Abbreviation: CVC, central venous catheter.

Anciennes recommandations:
Changement de KT en cas d'infection

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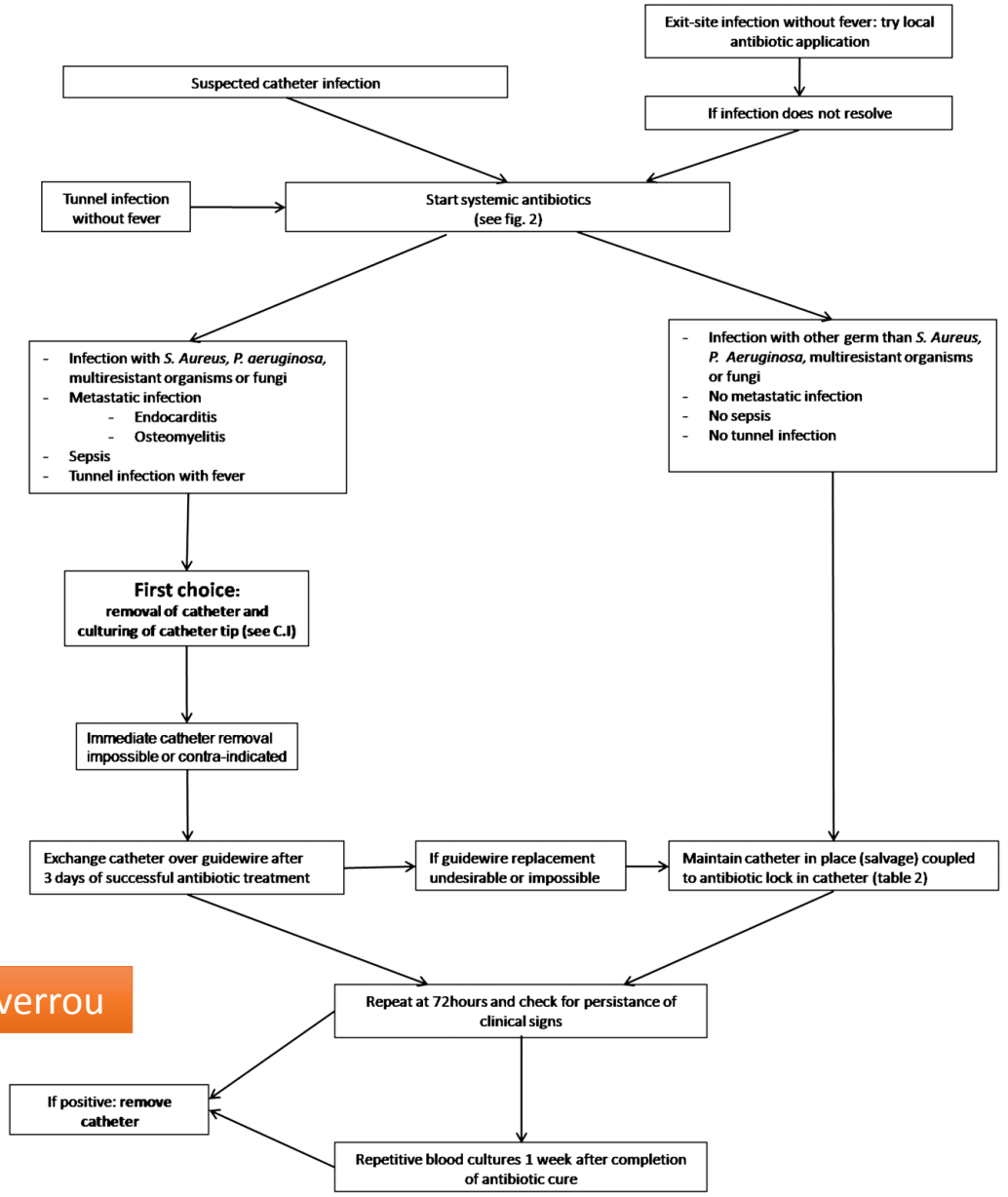
Vanholder et al

EBPG NDT Plus (2010) 3: 234–246



On peut essayer de garder le KT infecté avec un verrou

On peut rompre la gaine de fibrine
mais pas de recommandation claire
Le changement de site doit être le dernier recours

CLINICAL PRACTICE GUIDELINE FOR VASCULARACCESS: 2019 UPDATE

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22.6 KDOQI considers it reasonable that the decision to perform fibrin sheath disruption during CVC exchange for CVC dysfunction be based on the operator's discretion and best clinical judgment. (Expert Opinion)

- 22.7 There is inadequate evidence for KDOQI to make a recommendation on the efficacy of or method of fibrin sheath disruption based on CVC patency outcomes.
- 22.8 KDOQI considers it reasonable that CVC removal followed by replacement at a **different site** should be the last resort after conservative, medical, and other mechanical (eg, angioplasty, CVC exchange) strategies have all failed to treat CVC dysfunction. (Expert Opinion)

KT infectés: approche individuelle
Changement sur guide, en 2 temps, maintien avec verrou ATB
Dysfonction: changement sur guide +- angioplastie de la fibrine

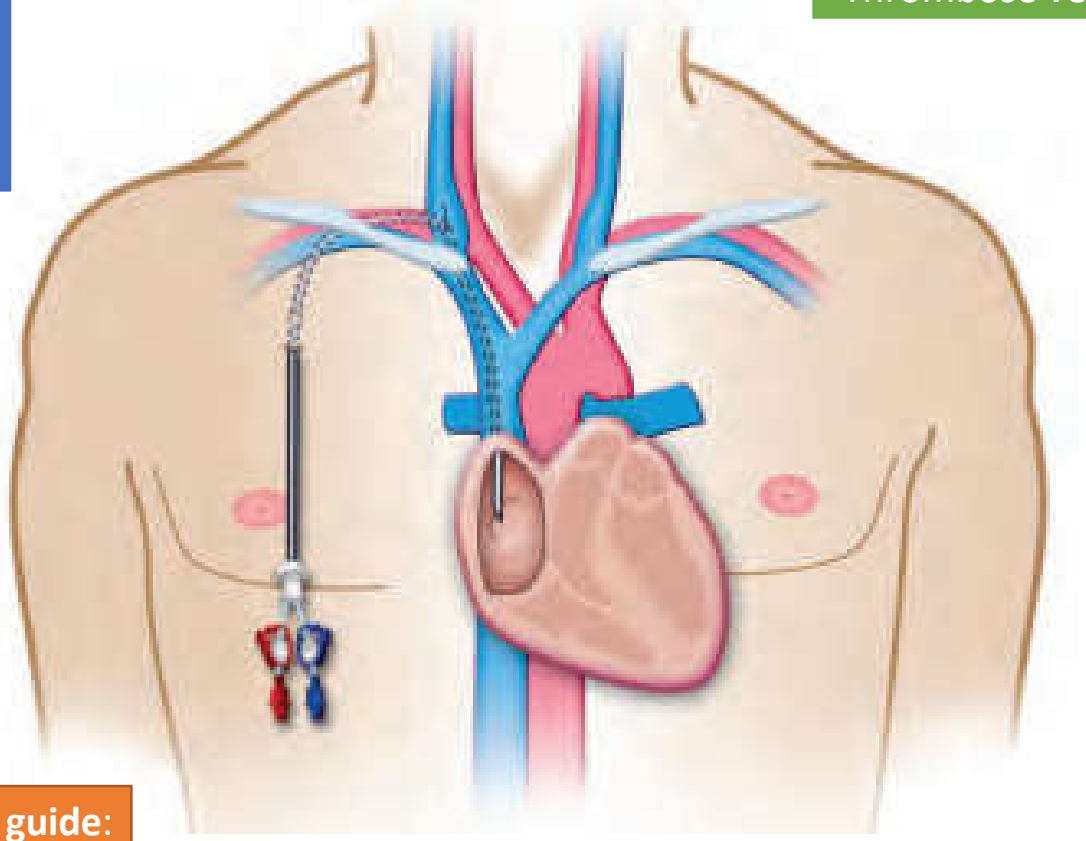
- 25.2 KDOQI considers it reasonable to have an individualized approach to the management of an infected catheter based on the patient's health, dialysis, and vascular access circumstances and should follow the detailed guidance.
- Options include CVC exchange via guidewire, CVC removal and reinsertion, CVC salvage, and concurrent antibiotic lock (particularly if the CVC is deemed to be the patient's final access). (Expert Opinion)
- 26.3 KDOQI considers it reasonable that when a CVC fibrin sheath is associated with adverse clinical manifestations (CVC dysfunction and/or infection), a CVC exchange with or without balloon disruption of the fibrin sheath should be performed.(Expert Opinion)

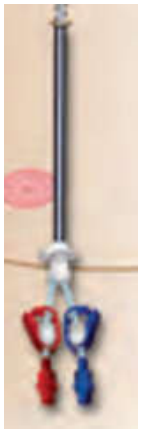
Infection de tunnel: si échec ATB = changement avec nouveau tunnel ou changement de site

- CVC management of tunnel infections: If the tunnel infection is not effectively treated with antibiotics, consider CVC exchange with a new subcutaneous tunnel to preserve the venous access site.
- 615 If not possible, the CVC should be removed and a new CVC placed at a new entry site

Changement de tunnel:
-Infection
-Défaut de fixation
-Nécrose tunnel

Changement de site:
-Cathéter transitoire
-Thrombose veineuse





Changement sur guide:
-Dysfonction
-Cathéter transitoire

Conclusions

Changement KT transitoire→ tunnelisé:

- Fémoral → jugulaire interne ou fémoral
- Jugulaire interne: sur guide si < 15 j

Changement pour infection, cuff sorti ou nécrose cutanée:

- Même site avec changement de tunnel

Changement pour dysfonction:

- Même site sur guide si plicature, faux trajet, mauvaise fixation
- Si manchon de fibrine: discuter angioplastie