

L'extraction des sondes de pacemaker et défibrillateur

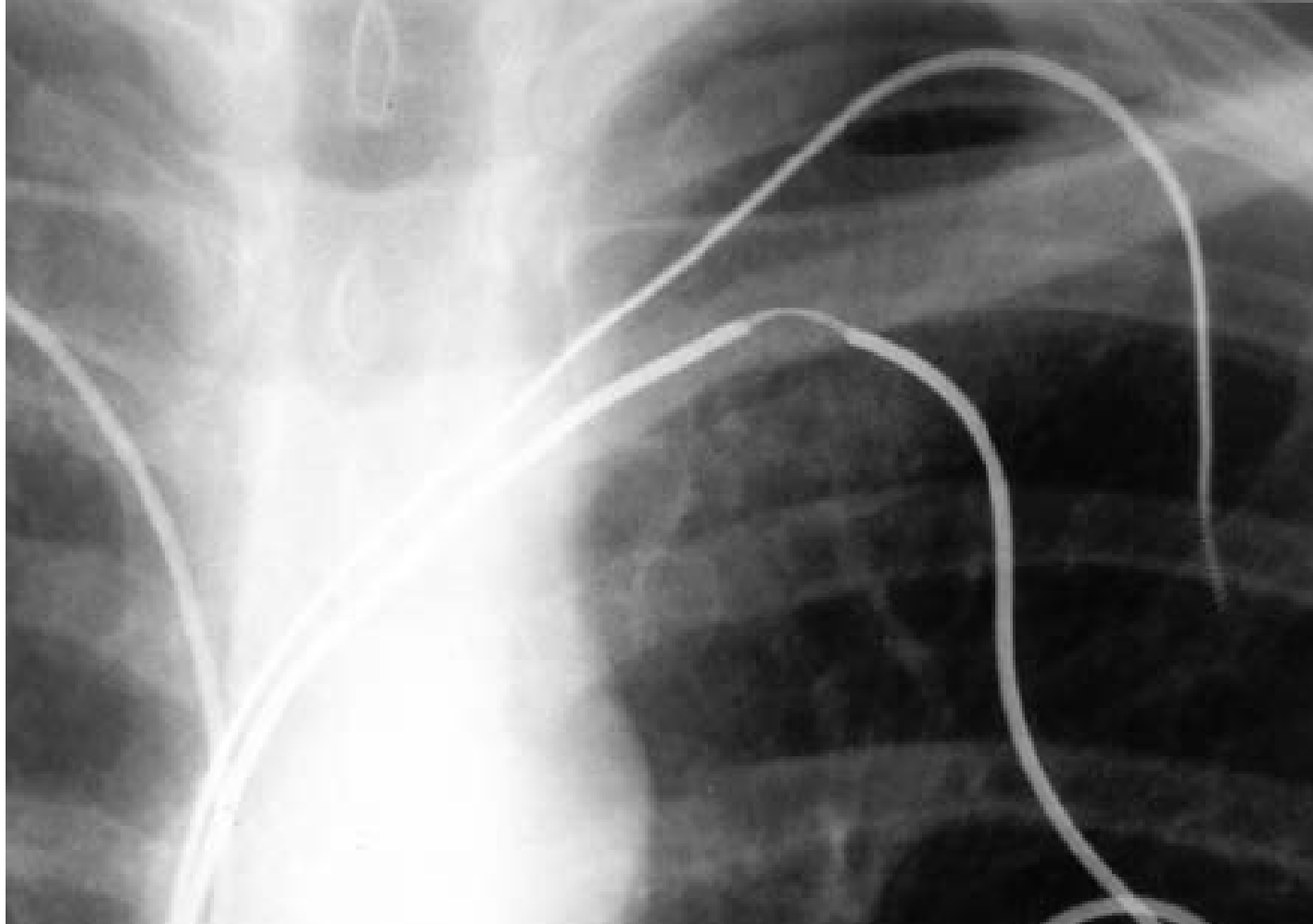
Didier Klug

ICP Lille

POUR QUI ?

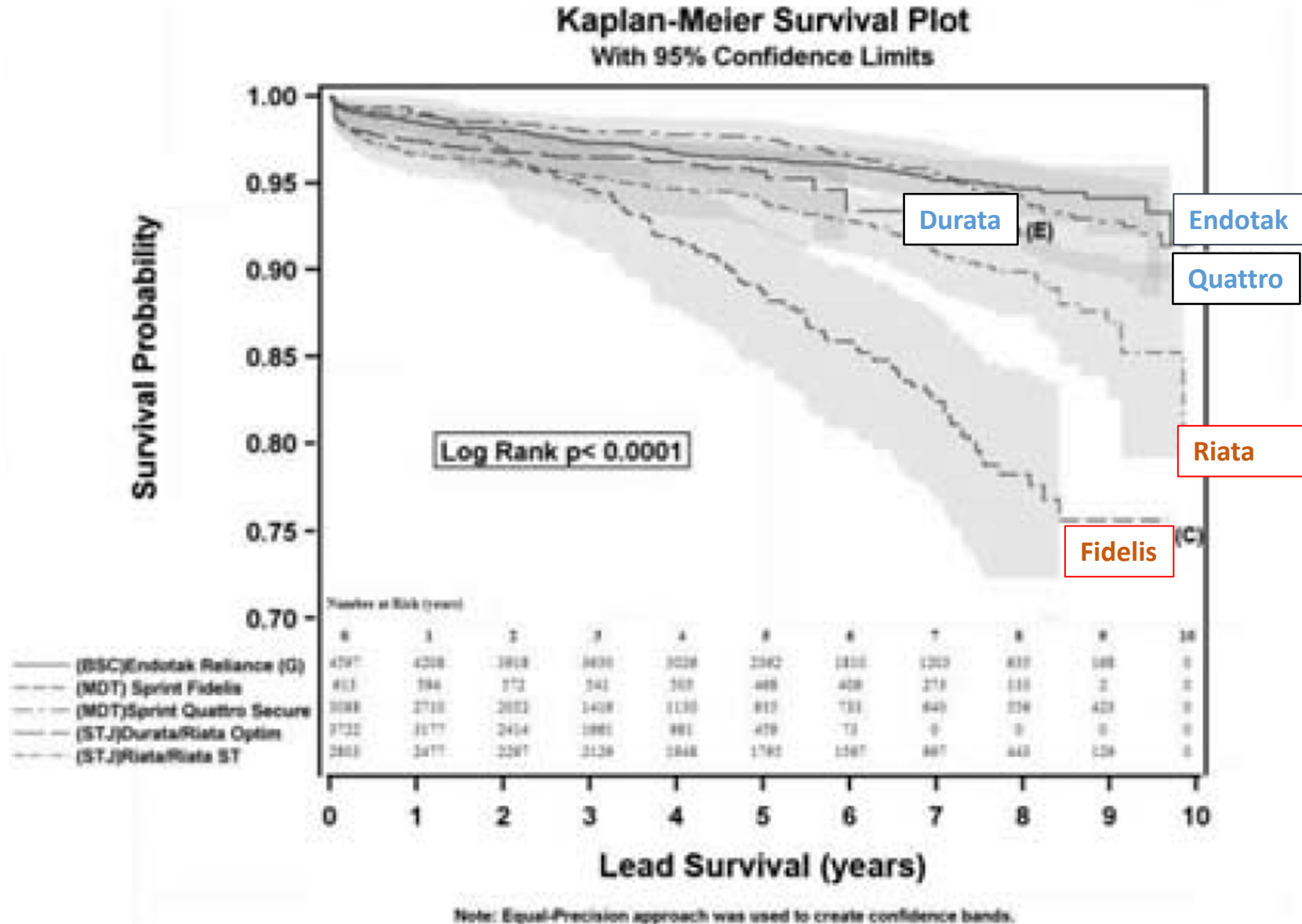
ou

POURQUOI ?

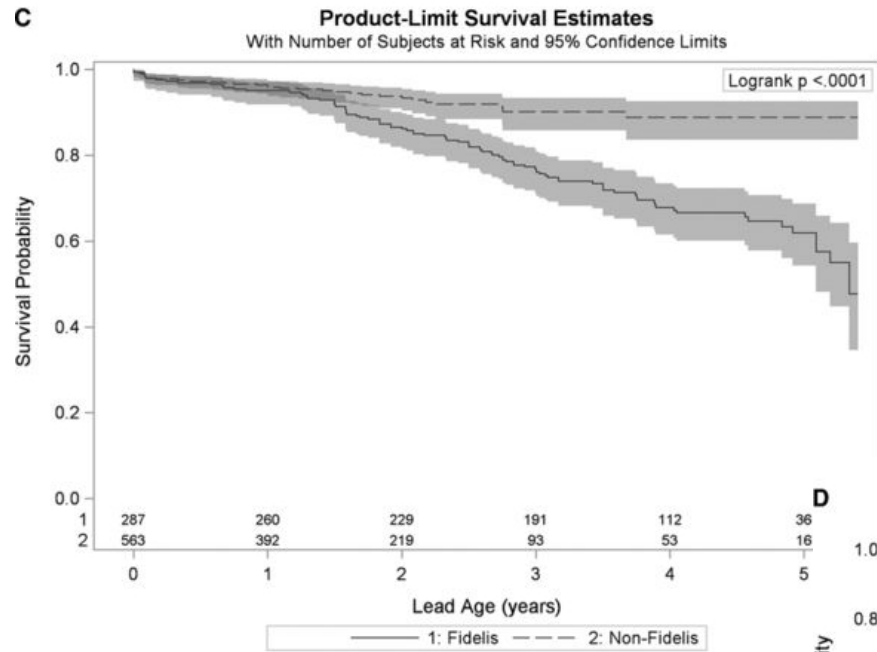


Les sondes le maillon faible du système implantable

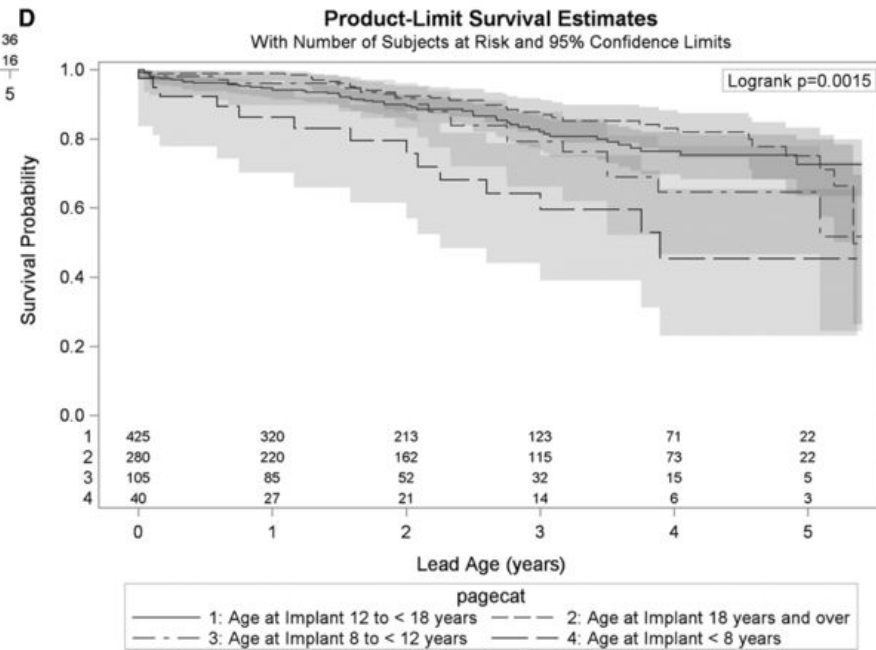
COMPARISON OF HIGH VOLTAGE RIGHT VENTRICULAR LEADS SURVIVAL USING A LARGE COMMUNITY-BASED CARDIAC DEVICE REGISTRY

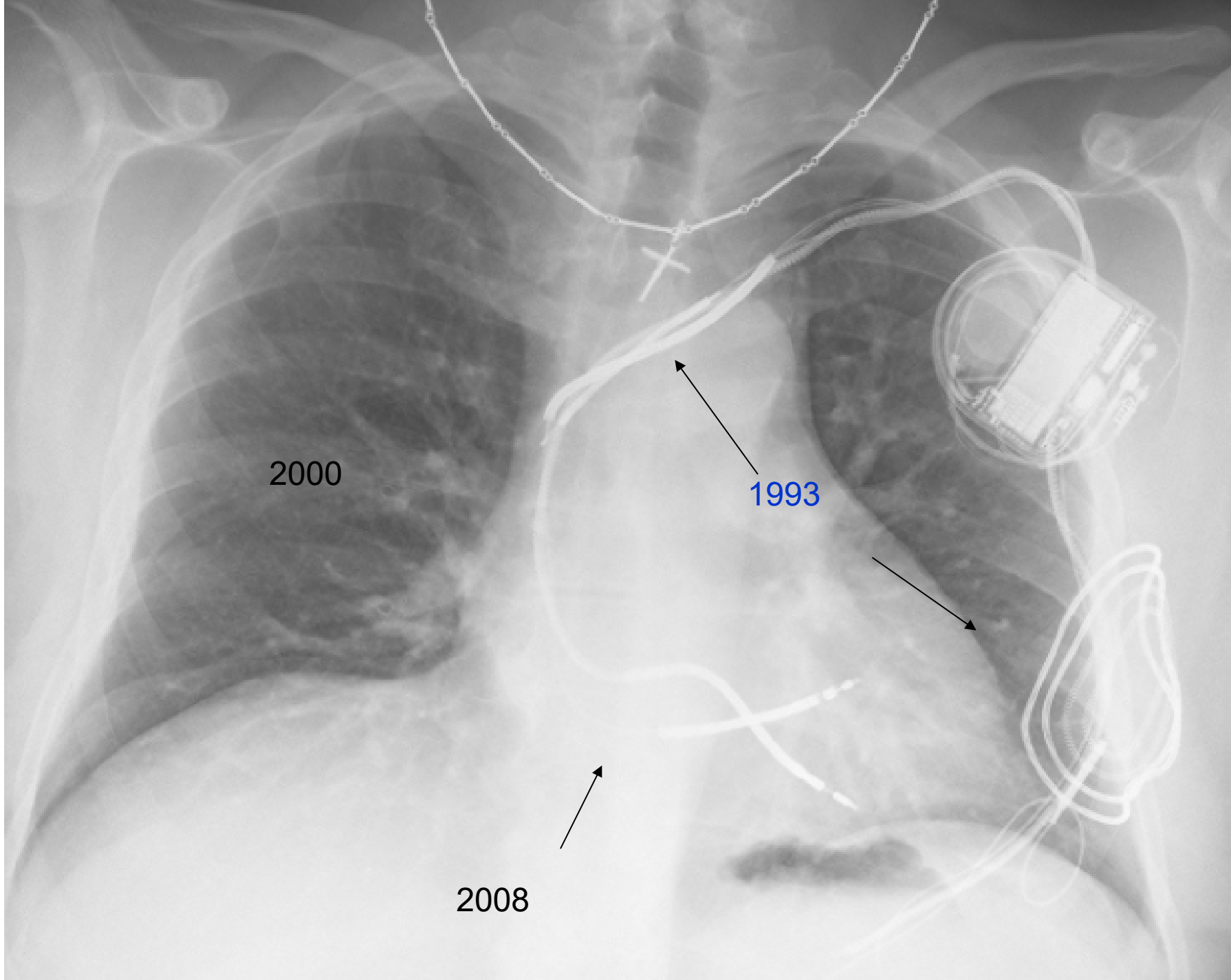


Multi-Institutional Study of Implantable Defibrillator Lead Performance in Children and Young Adults



A, Kaplan–Meier estimate of lead survival for all leads.





2000

1993

2008

Pas de sur-risque d'une sonde abandonnée mais:

-problème pour les IRM

-si trop nombreuses

- augmente le risque de thrombose
- problème avec la valve tricuspide

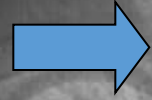
10% - 25 % de thromboses veineuses



GEORGINA NG
922 F
001

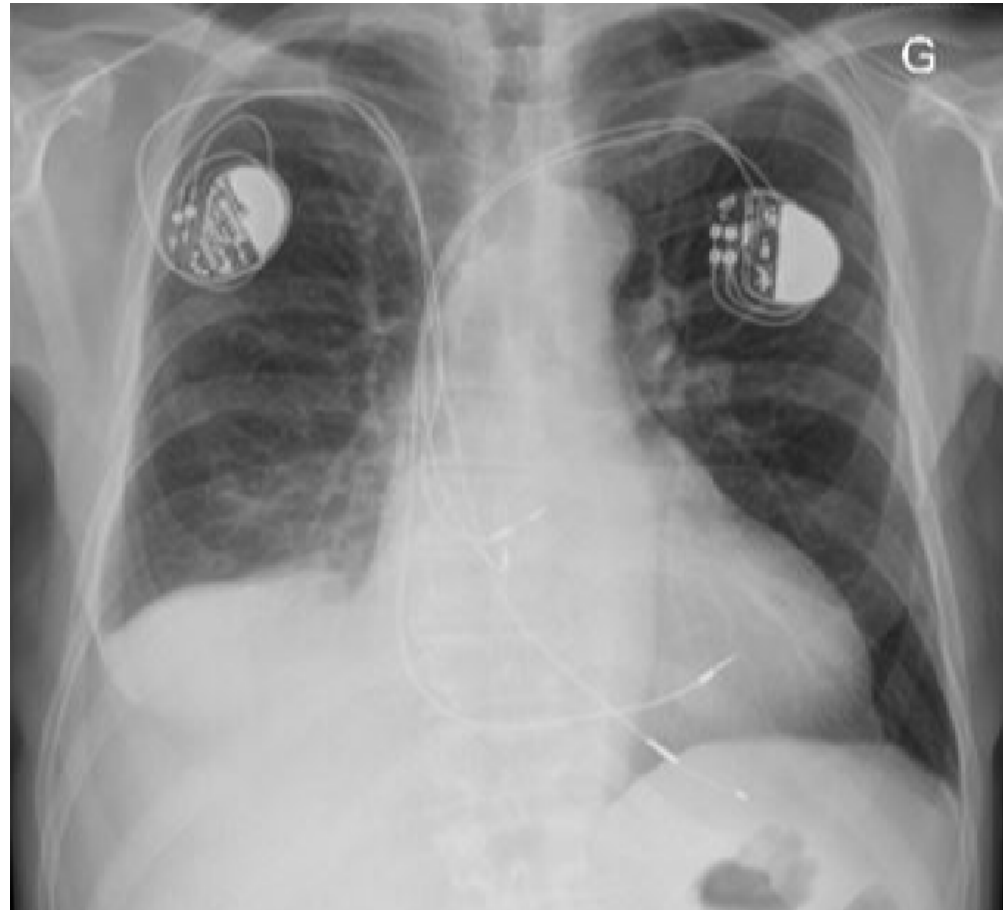
HOPITAL CARDIOLOGIQUE DE LI
DR LI

Possible previous extraction
attempted

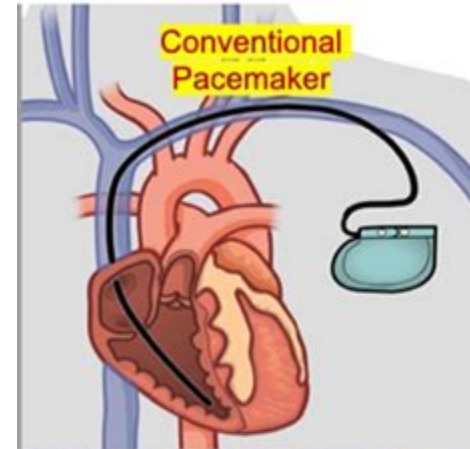
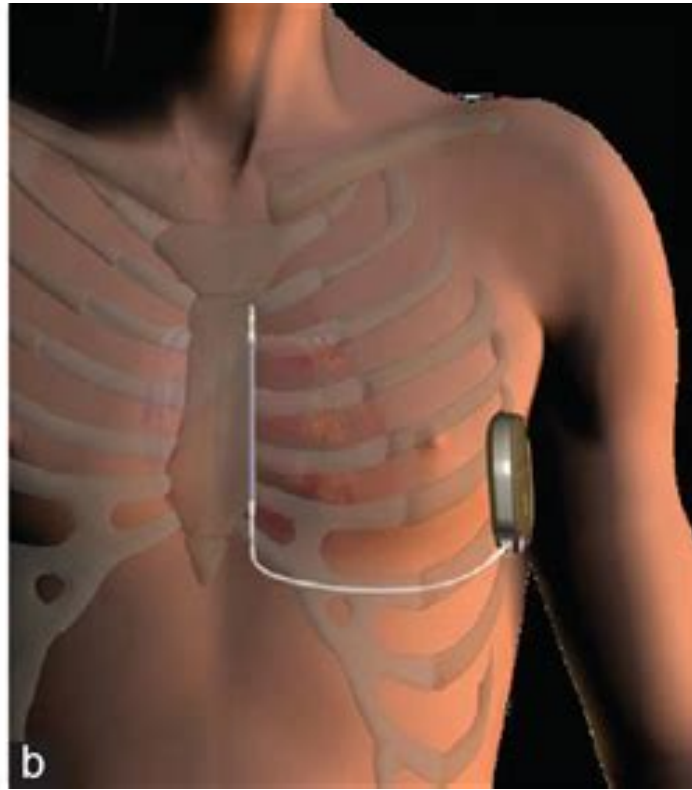


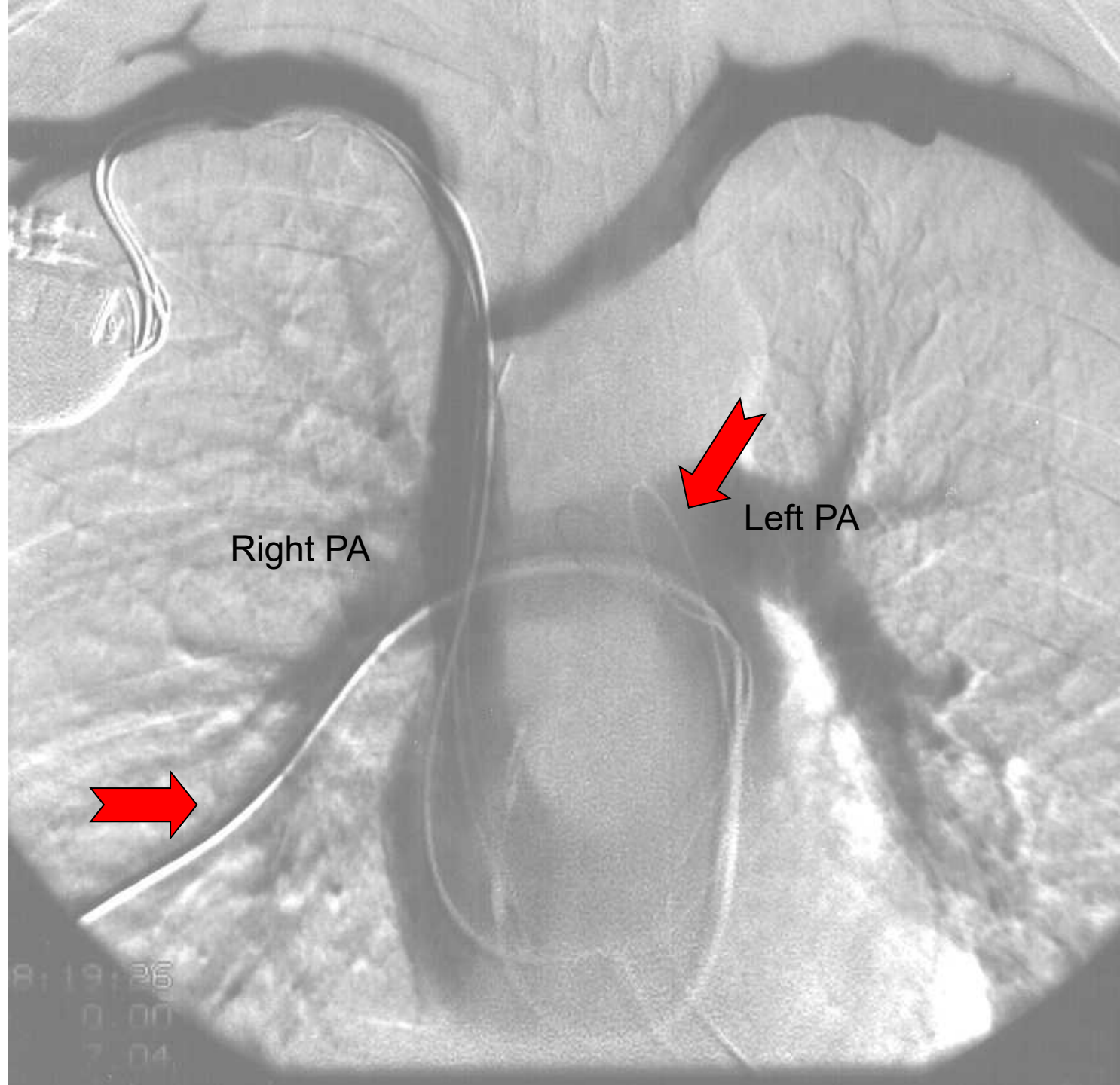
15:28:16

DÉFIBRILLATEUR ENDOCAVITAIRE : OUI MAIS...



Mettre en balance le risque de l'extraction et l'implantation d'un système sans sonde endocavitaire

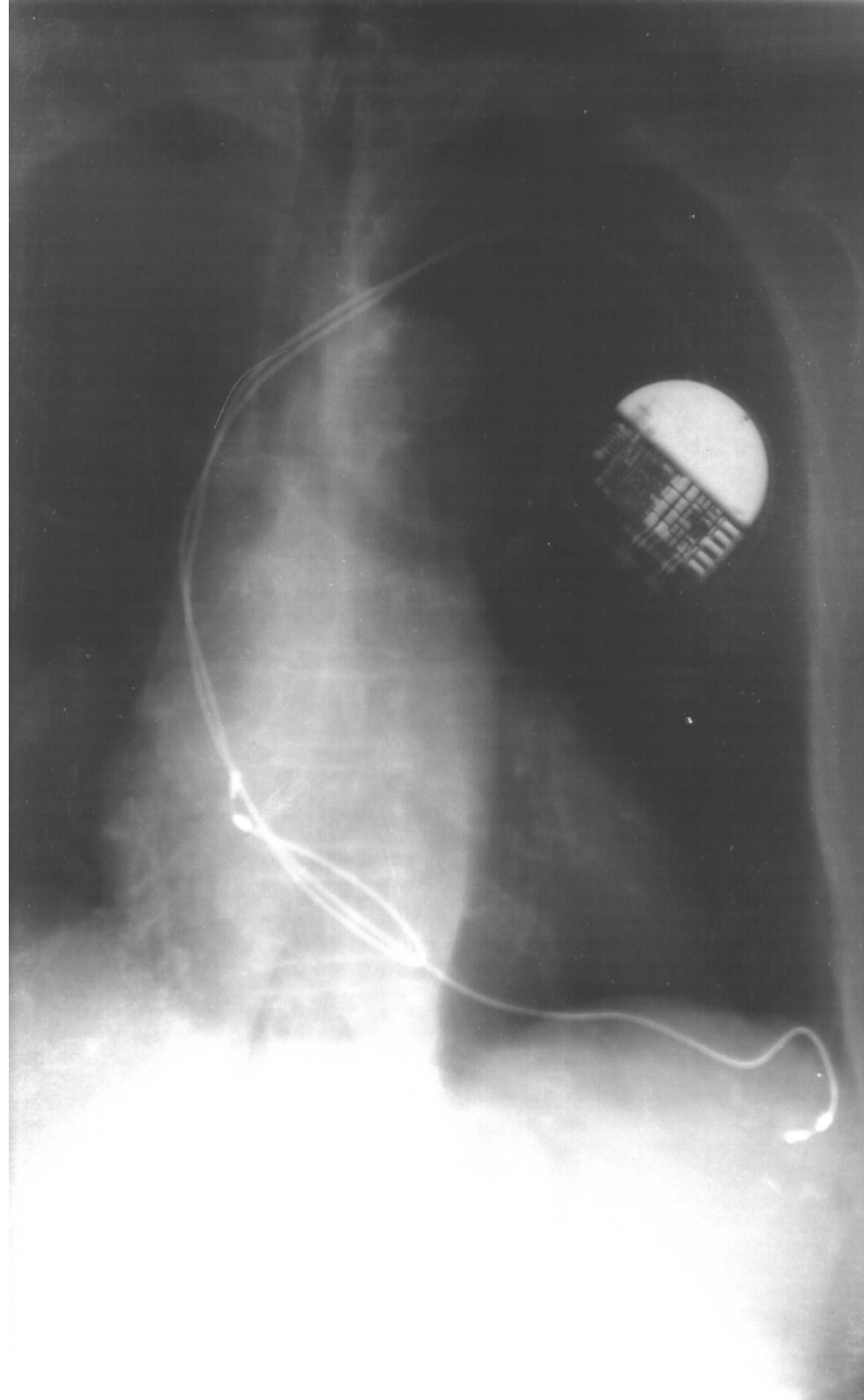




Right PA

Left PA

8:19:26
0:00
7:04



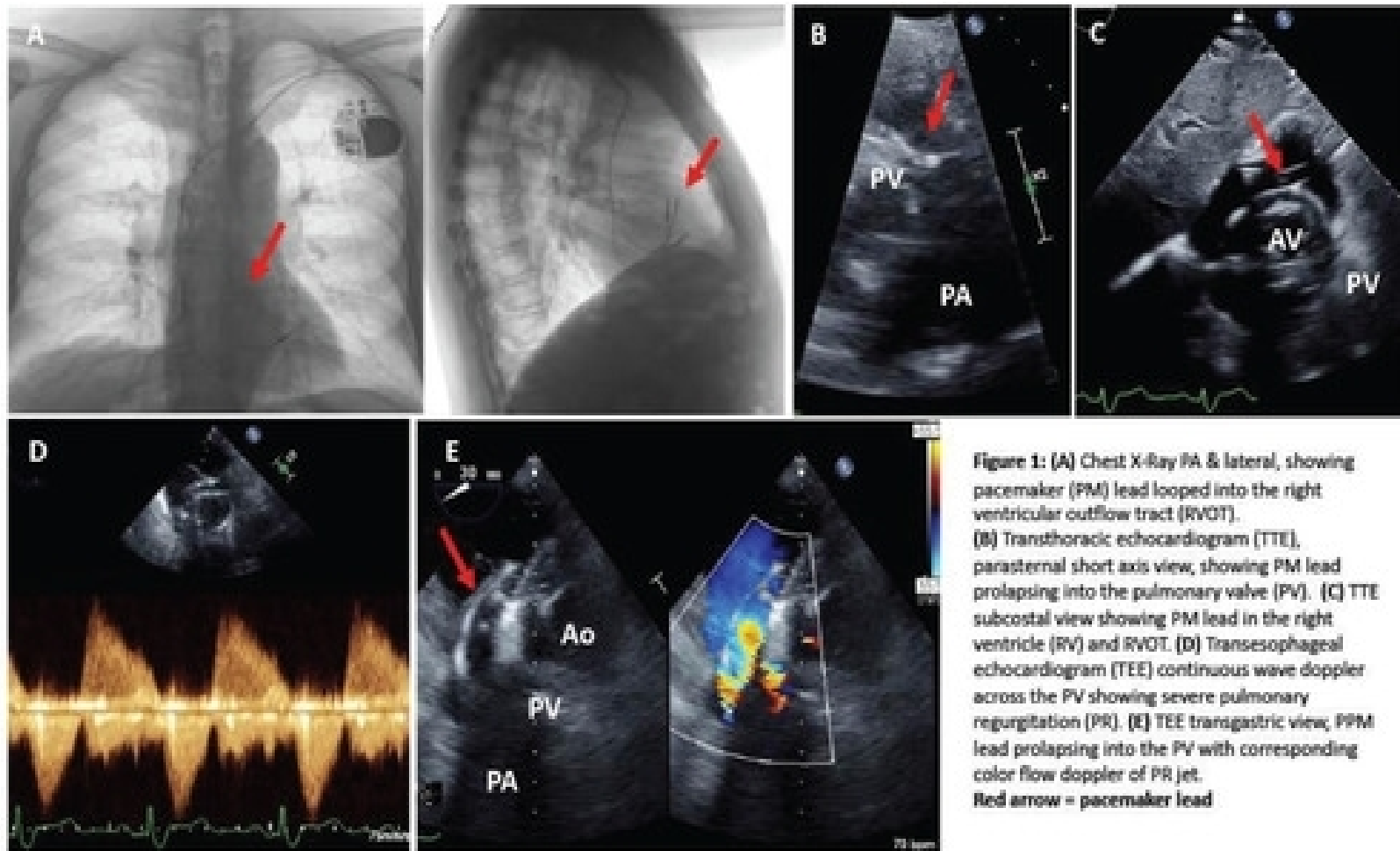
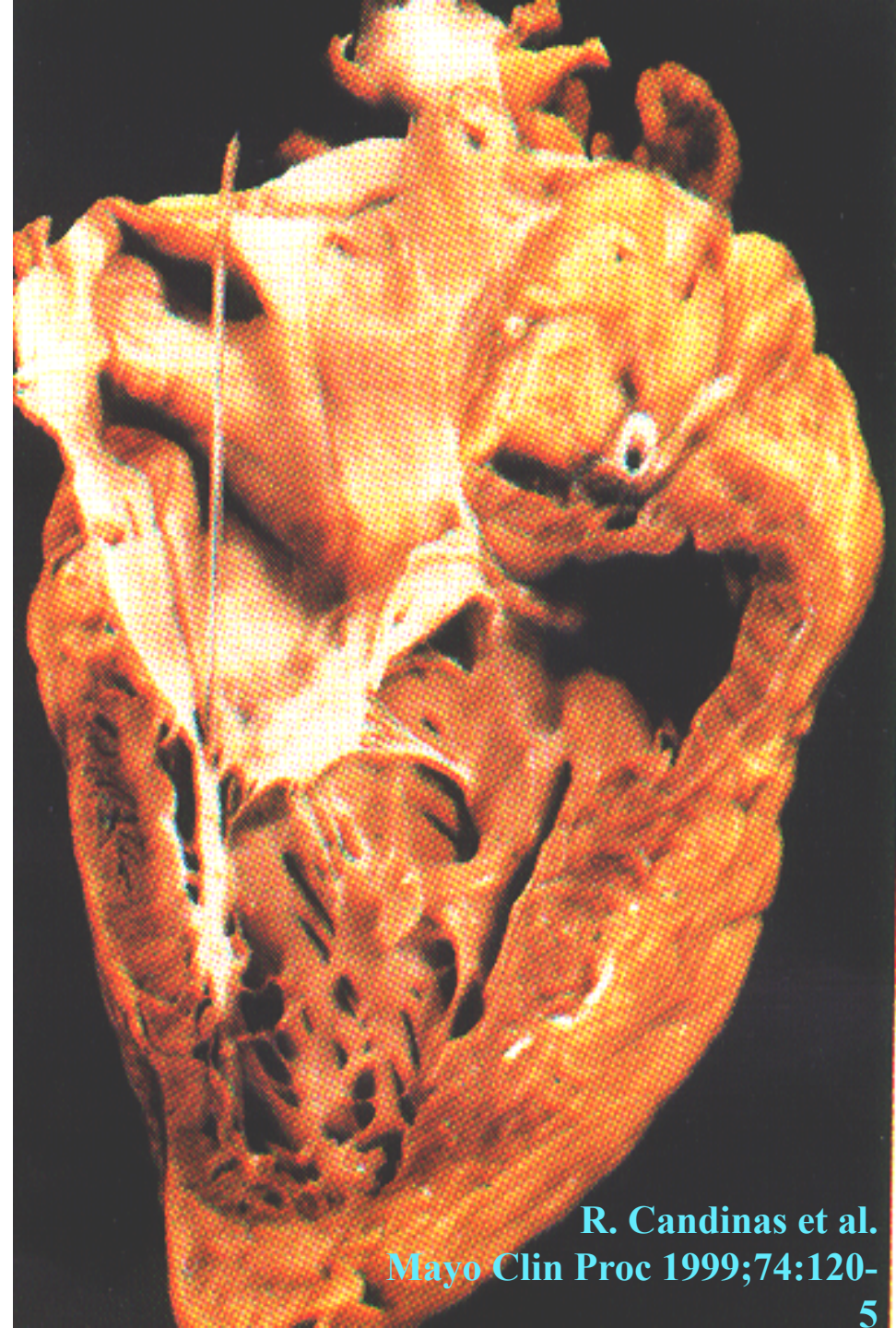
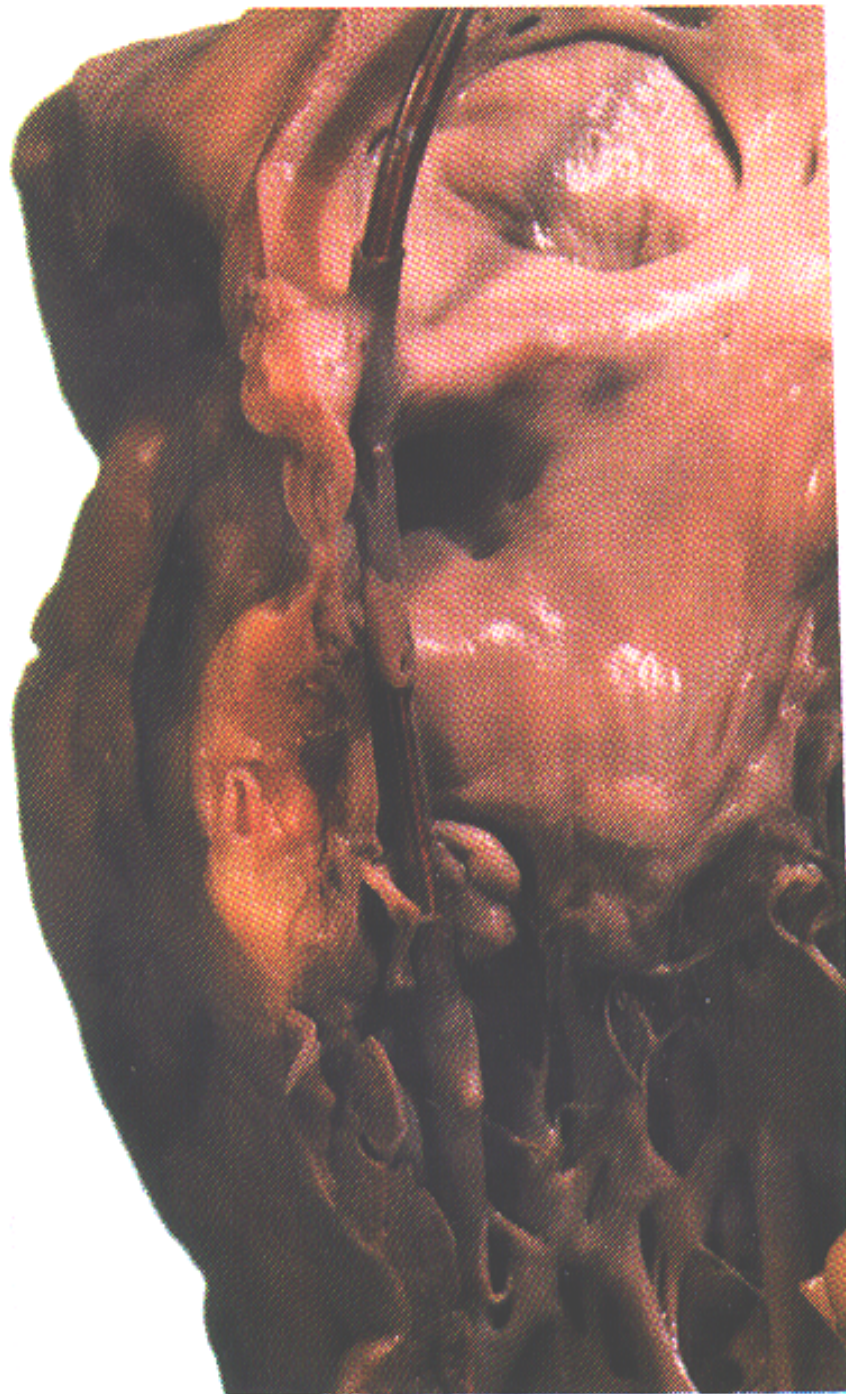


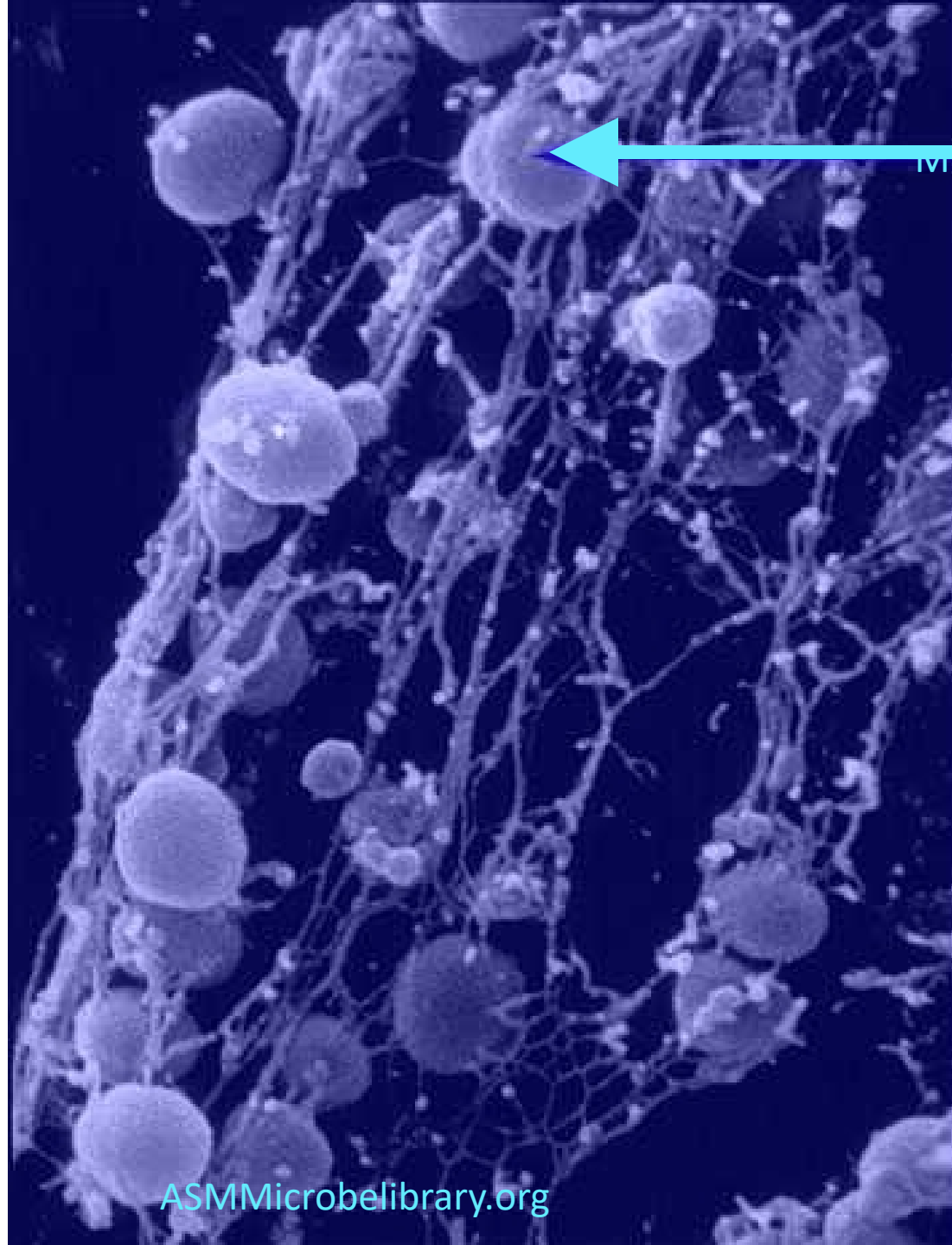
Figure 1: (A) Chest X-Ray (PA & lateral), showing pacemaker (PM) lead looped into the right ventricular outflow tract (RVOT). (B) Transthoracic echocardiogram (TTE), parasternal short axis view, showing PM lead prolapsing into the pulmonary valve (PV). (C) TTE subcostal view showing PM lead in the right ventricle (RV) and RVOT. (D) Transesophageal echocardiogram (TEE) continuous wave doppler across the PV showing severe pulmonary regurgitation (PR). (E) TEE transgastric view, PPM lead prolapsing into the PV with corresponding color flow doppler of PR jet. Red arrow = pacemaker lead

ISAAC DREYTUS ET AL. JACC 2024; 83:2695-2699.



R. Candinias et al.
Mayo Clin Proc 1999;74:120-





Microcolonies of *Staphylococcus epidermidis*

- INDICATIONS FORMELLES

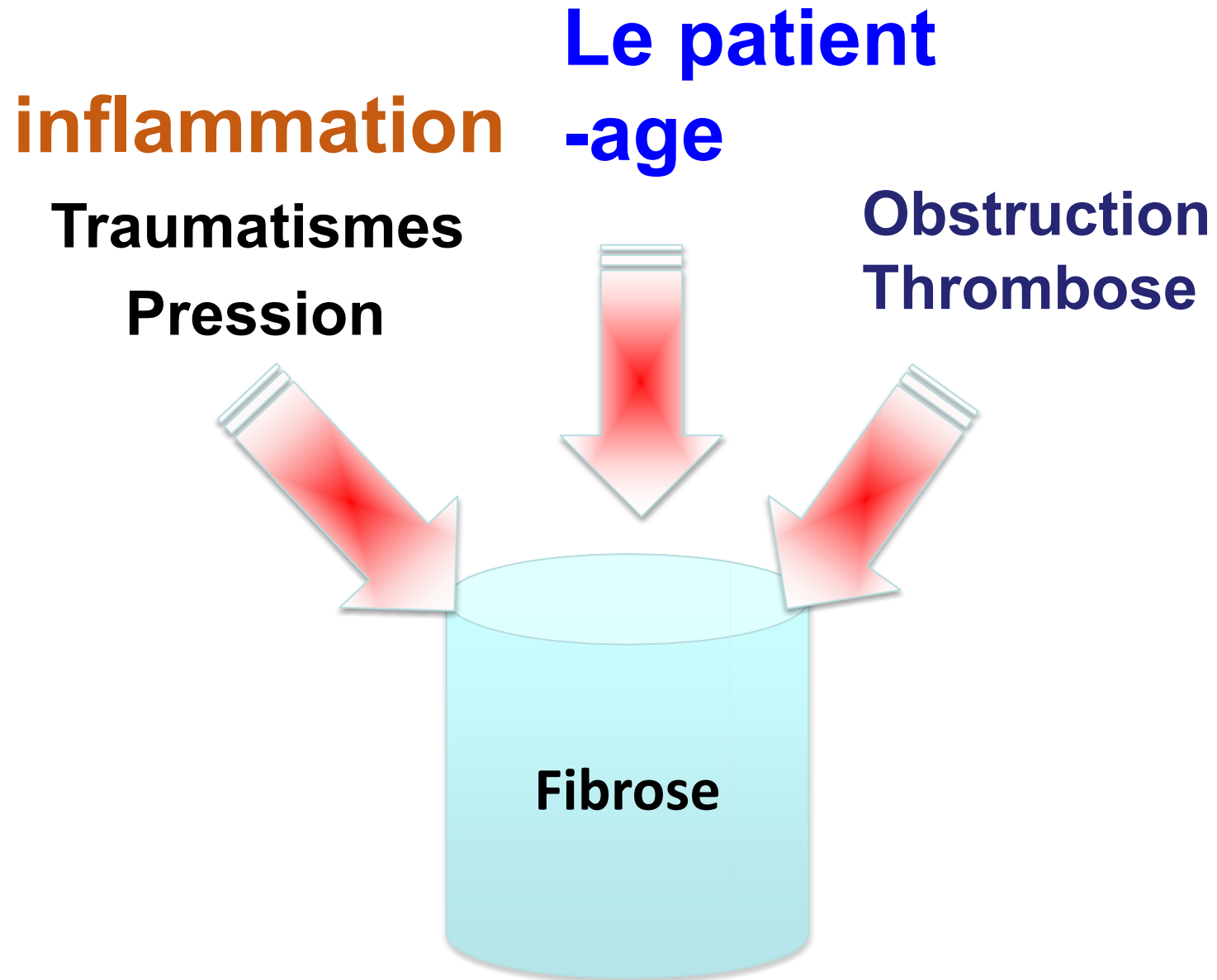
- Infection
- Sonde responsable d'arythmie ventriculaire grave ou autre complication considérée comme grave

- Indications possibles

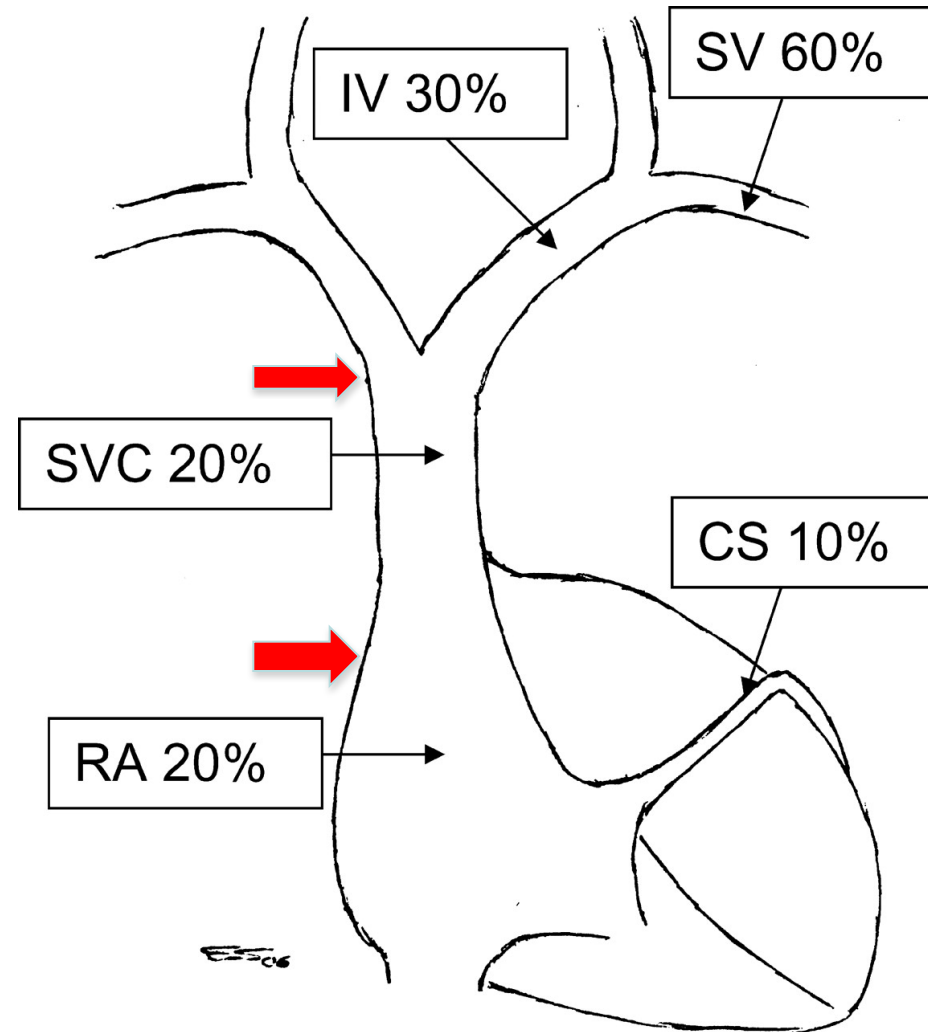
- Sonde cassée
- Thrombose veineuse
- Gène fonctionnelle

- Quel risque si je laisse la sonde en place ?
- Quel est le risque de l'extraction ?
- Quel est la probabilité de succès ou d'efficacité de l'extraction ?
- Y a-t-il des alternatives ?

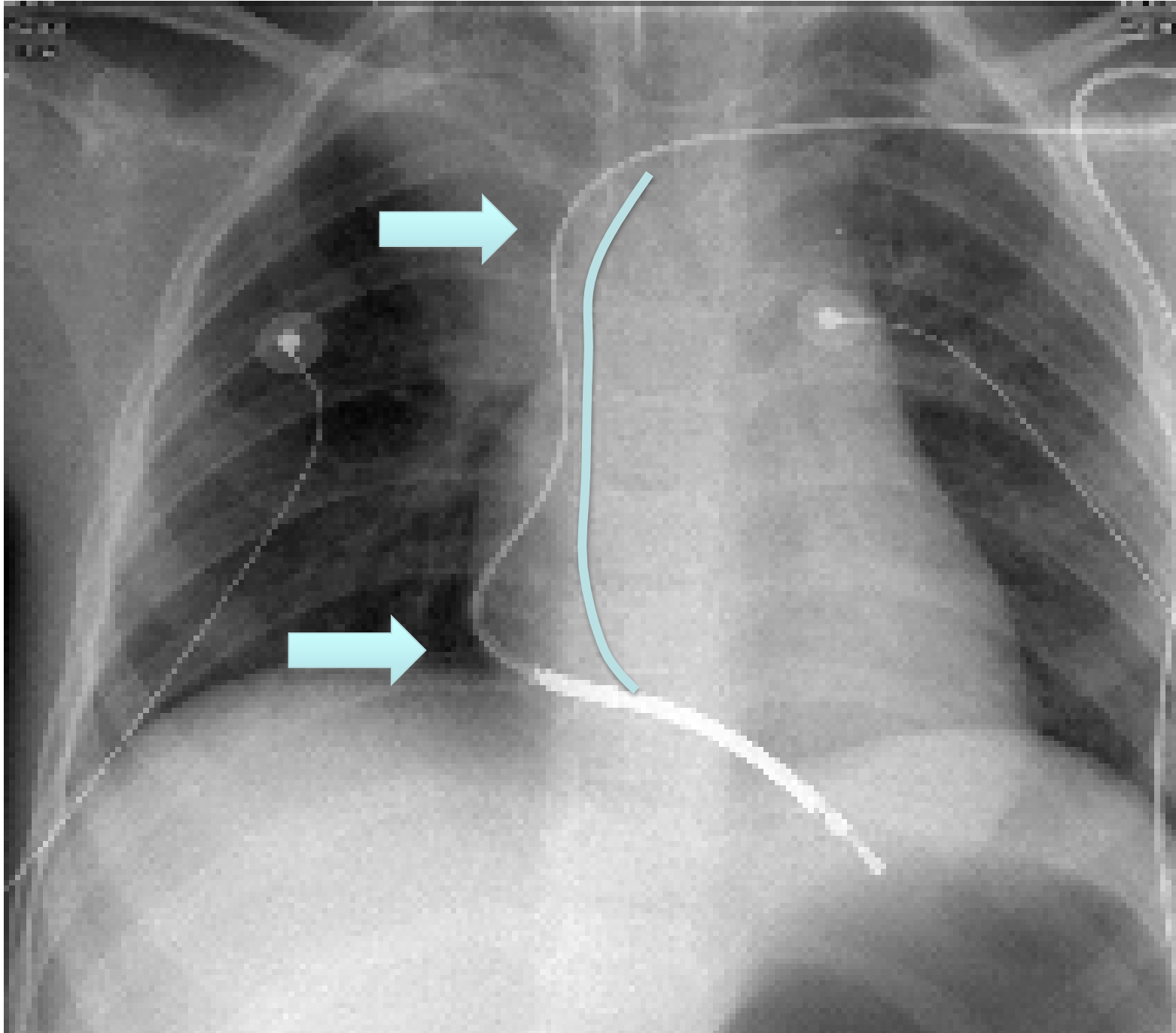
C'est bien plus difficile
d'extraire une sonde que
de l'implanter.



Location of areas of adherence in CS lead extraction using mechanical dissecting sheaths.



Bongiorni M G et al. Europace 2007;9:69-73

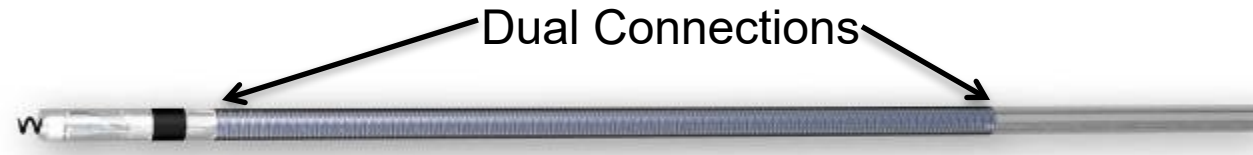




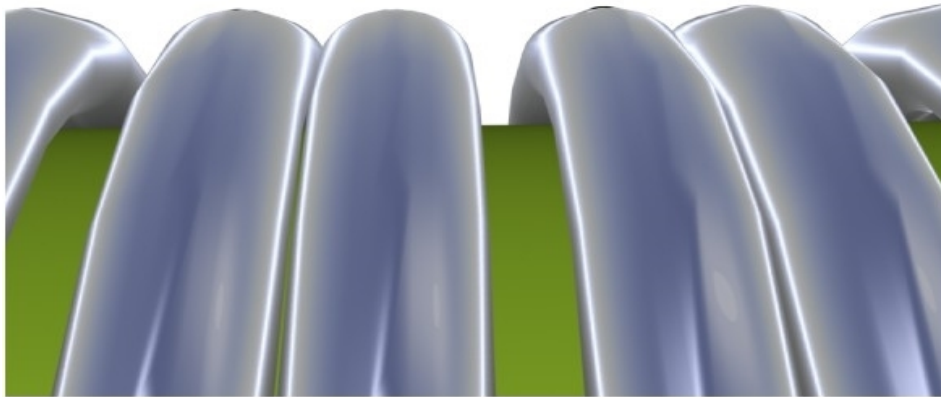
10% - 25 % de thromboses veineuses



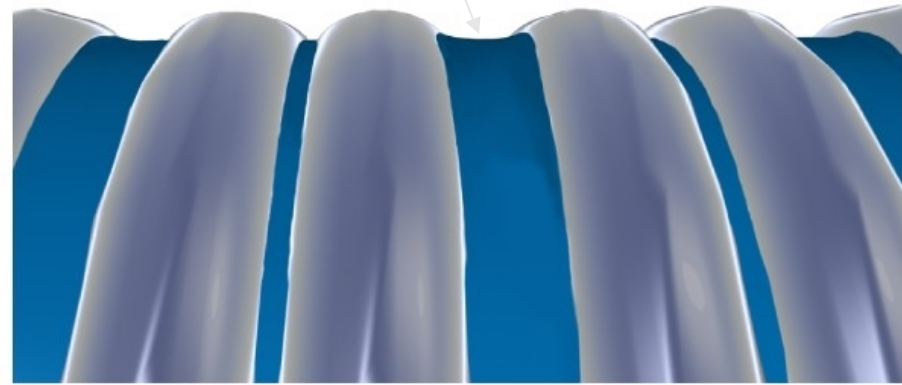
Silicone Backfilled Defibrillation Coil



Before Backfill



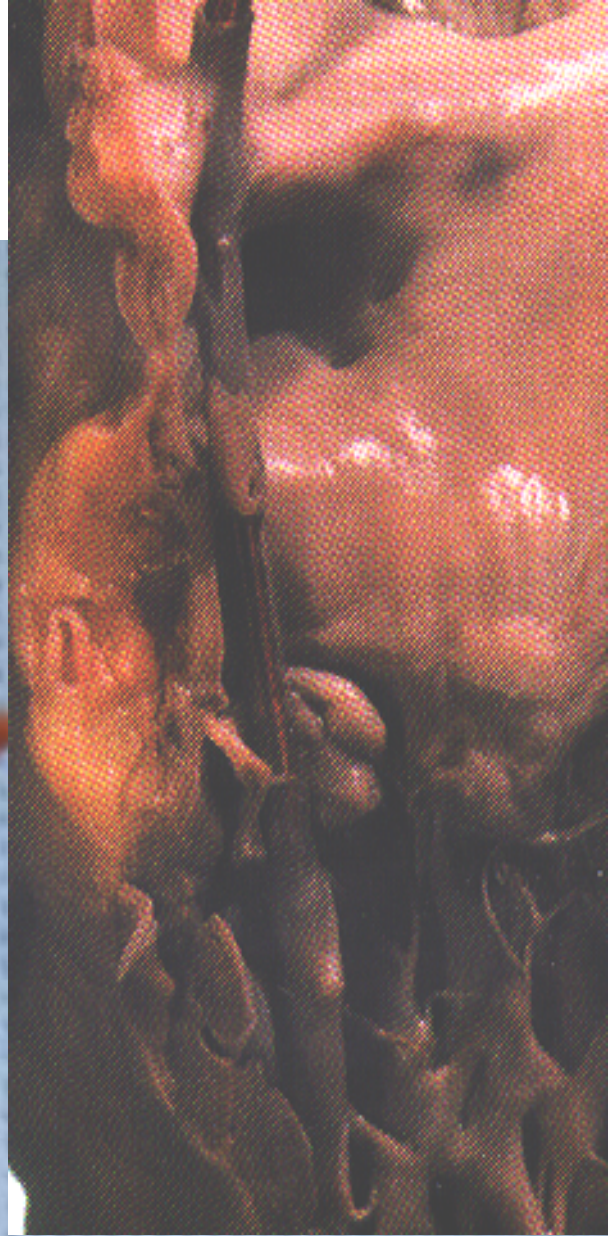
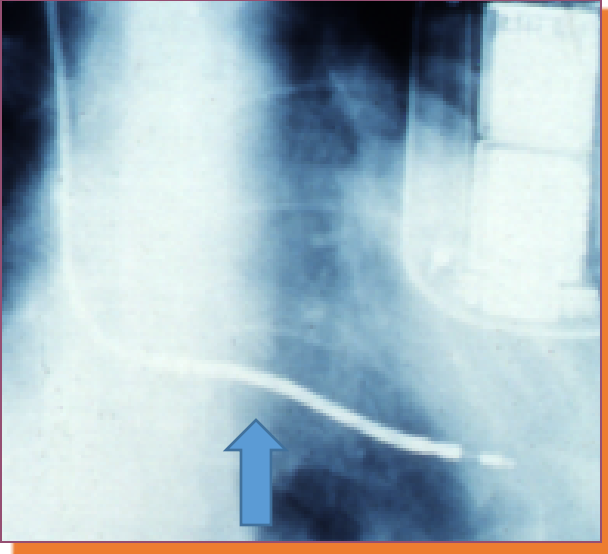
Silicone Backfill



- Reduces tissue in-growth¹
- Reduces required extraction force¹
- Stabilizes coil during implant¹
- Maintains lead integrity at explant¹

¹ Wilkoff BL, et al. *Pacing Clin Electrophysiol.* March 2005;28(3):205-211.

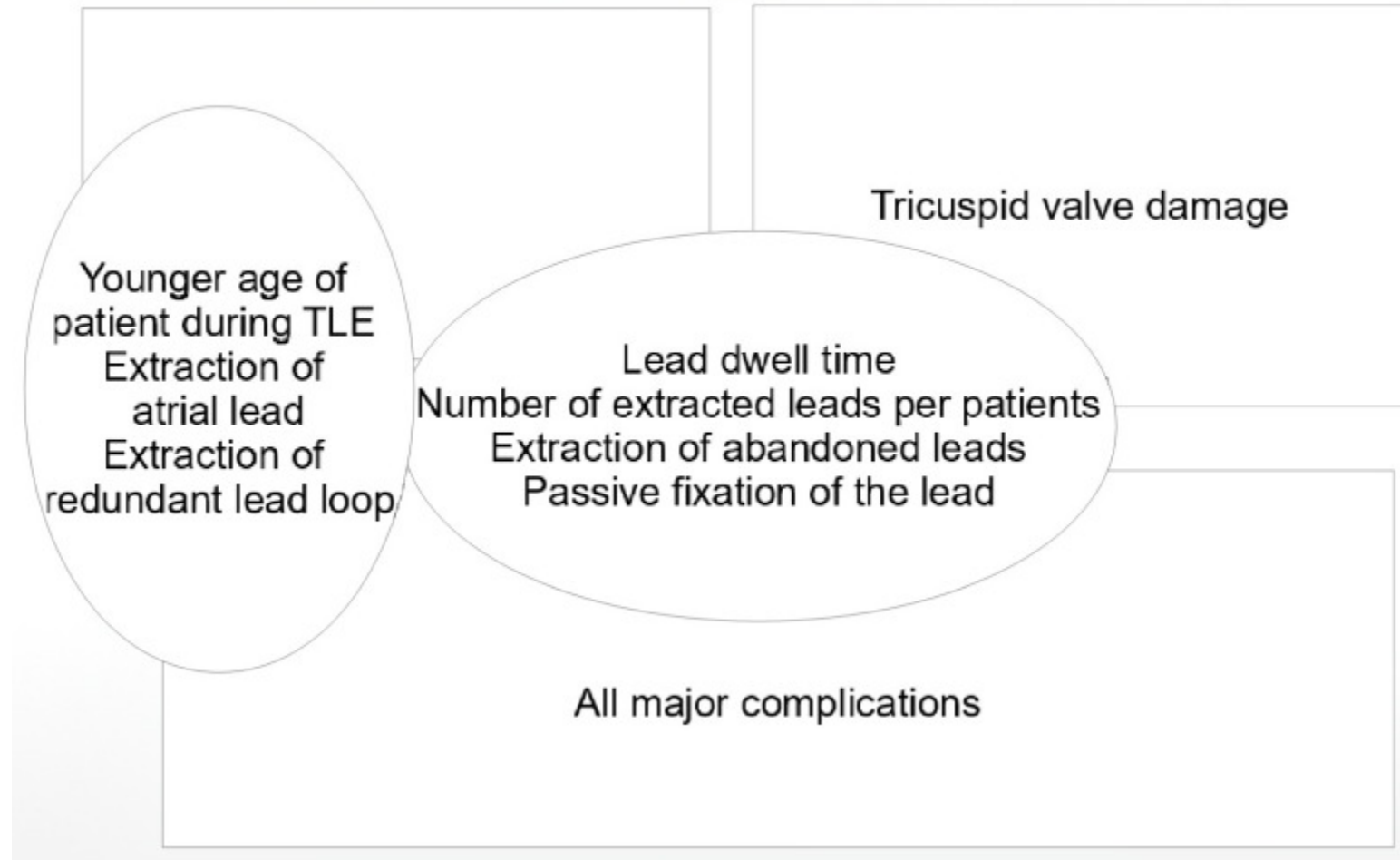




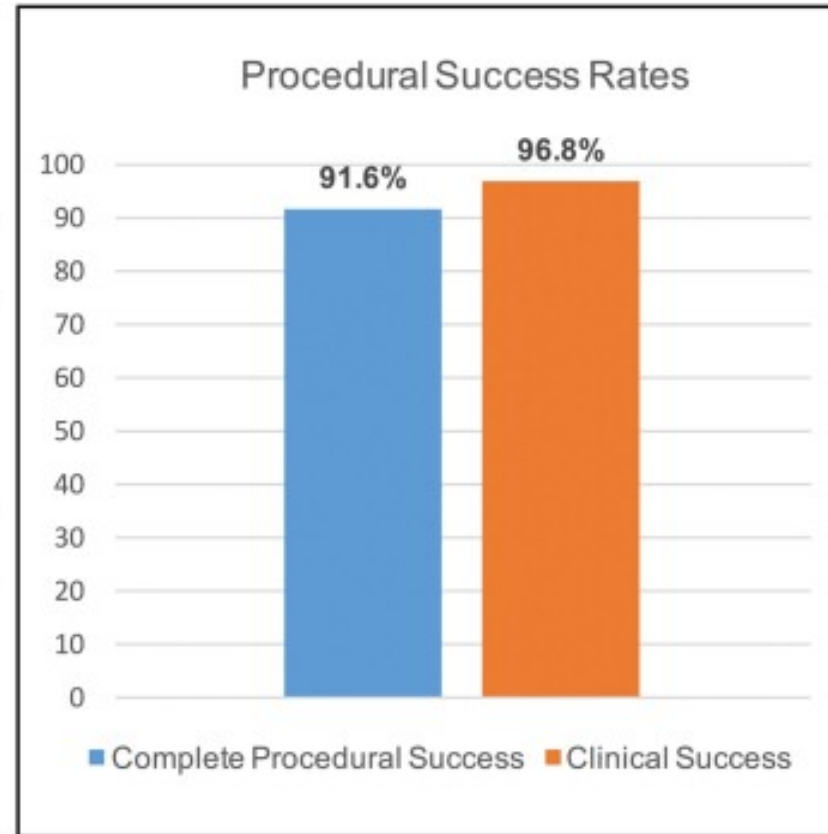
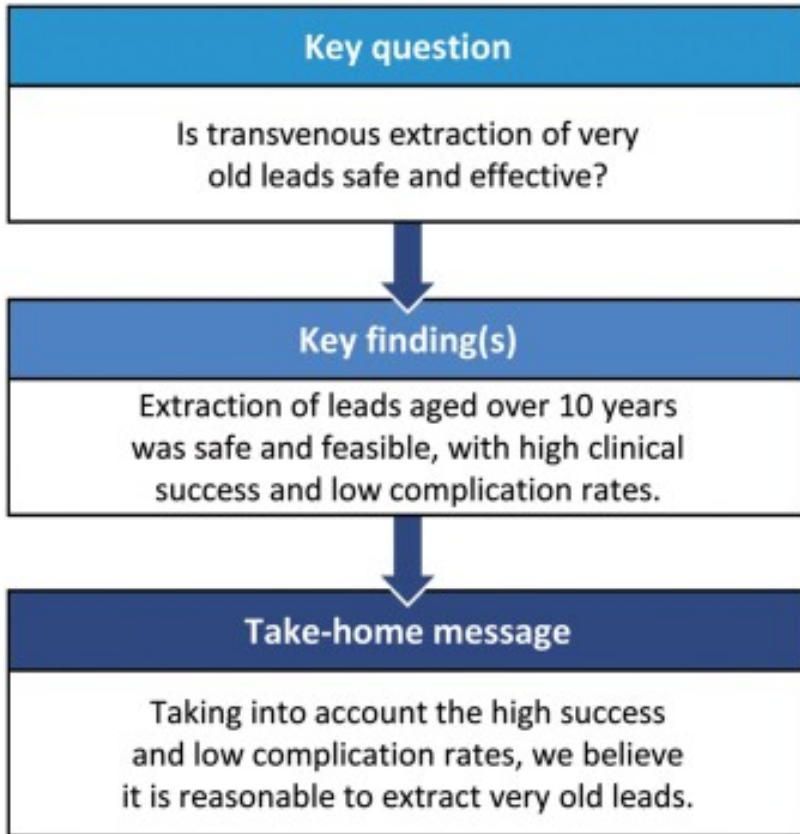
En cas d'infection possibilité de végétations parfois énormes sur les sondes



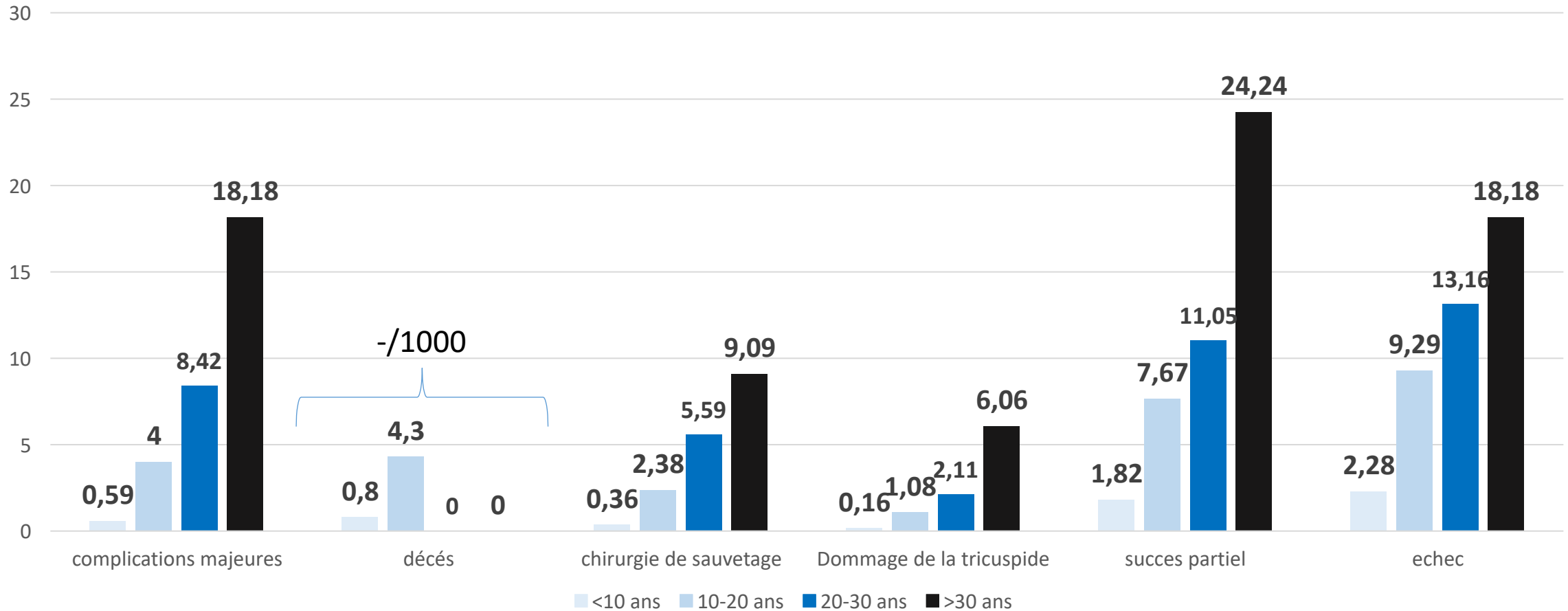
RISK FACTORS OF MAJOR COMPLICATIONS OF TLE



Safety and efficacy of transvenous lead extraction of very old leads



complications en fonction de l'âge des sondes



Je pense à l'extraction



COMMENT ?

Les techniques d'extraction

Dans un centre expérimenté

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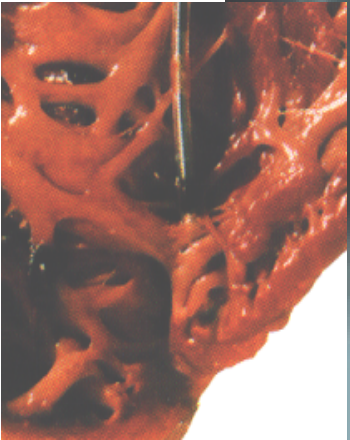
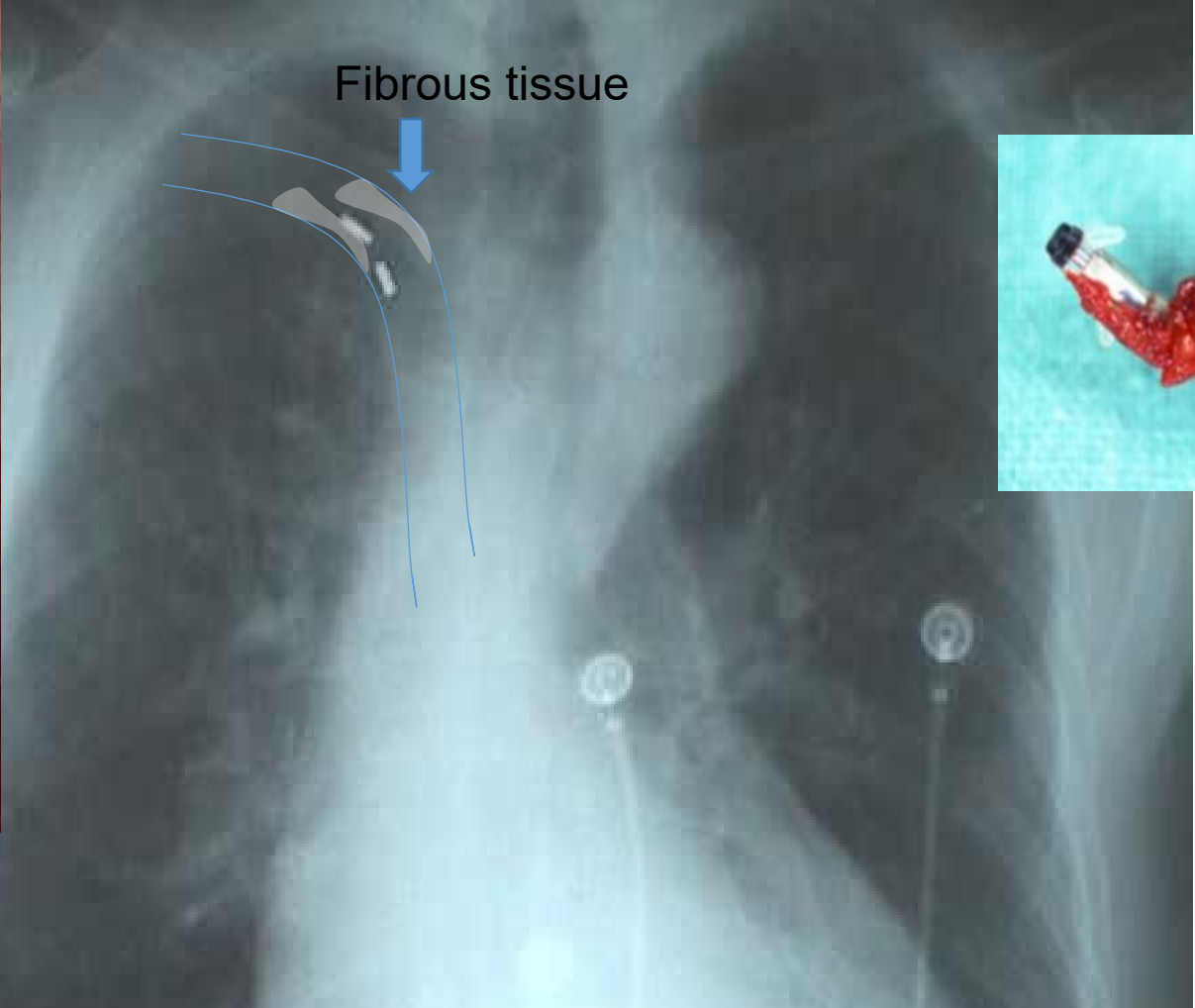
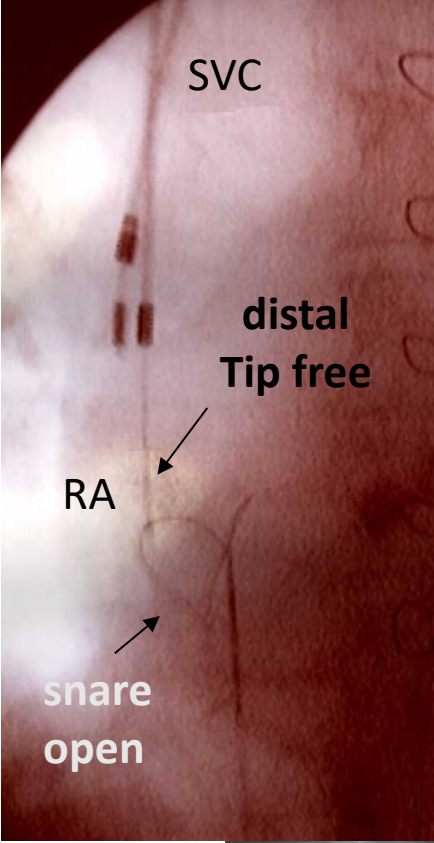
- **Le back-up chirurgical est obligatoire**
- dans un bloc opératoire permettant une chirurgie cardiaque
- Patient préparé pour un abord chirurgical éventuel
- mise en place d'un ballon de protection de la veine cave supérieur

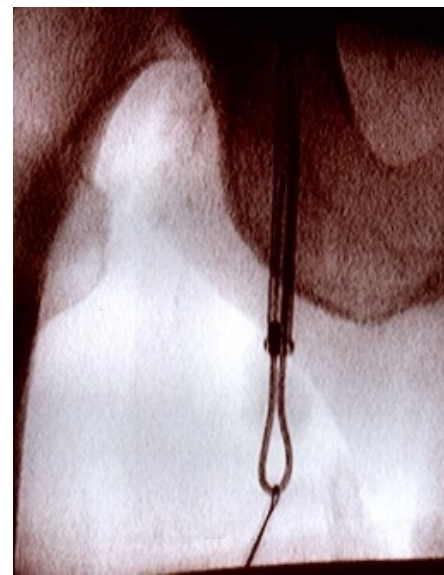
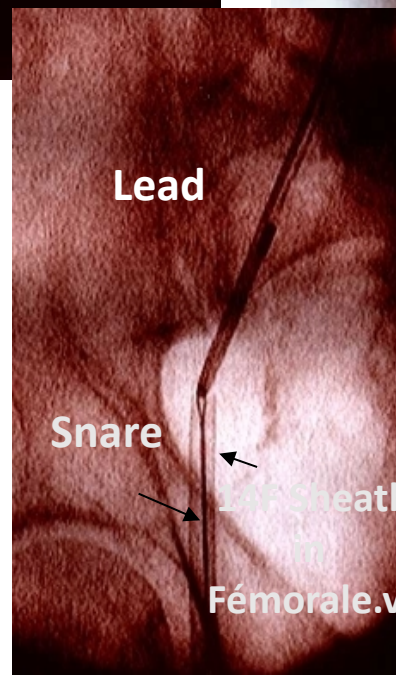
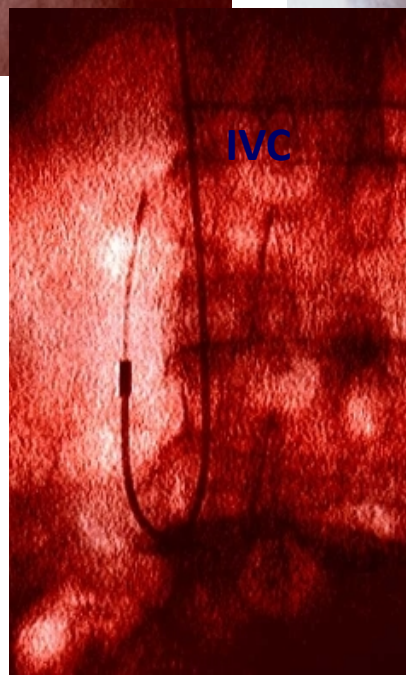
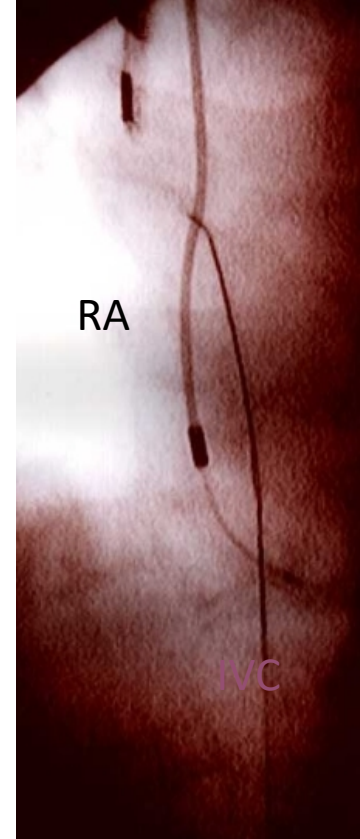
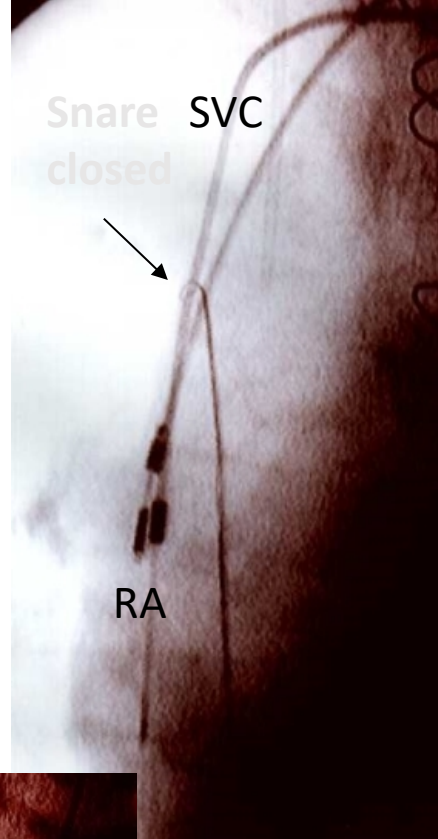
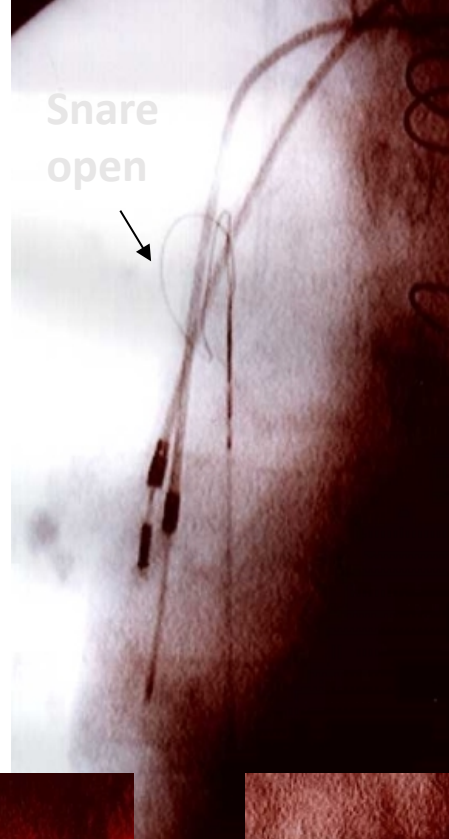
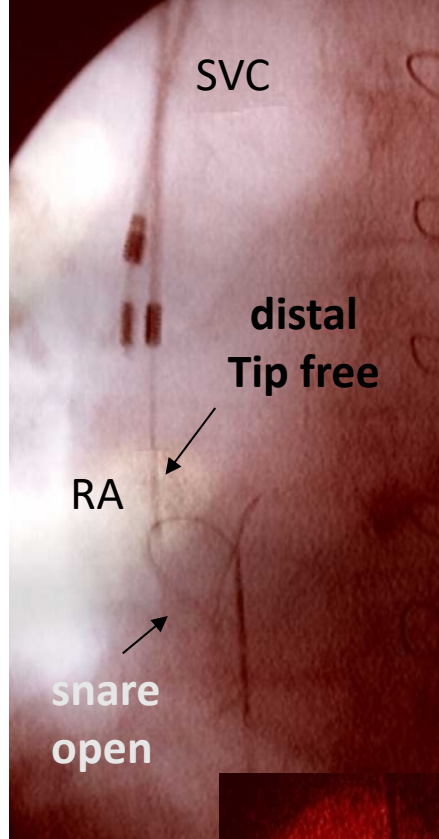
On a prévu la suite !!!!!

- Antibiothérapie si infection
- Quel nouveau matériel implanté après l'extraction

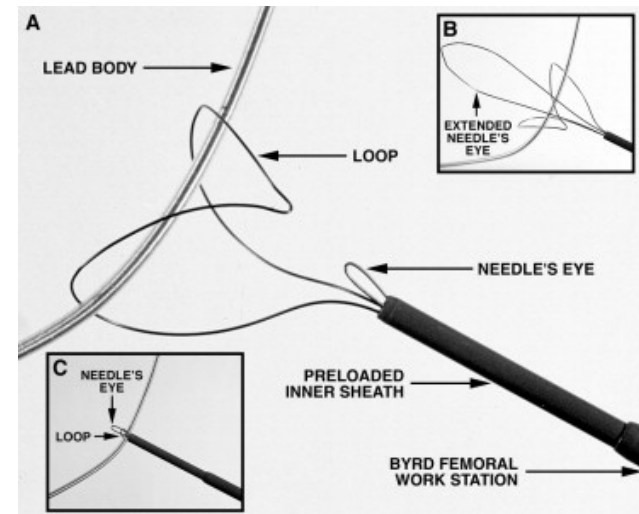
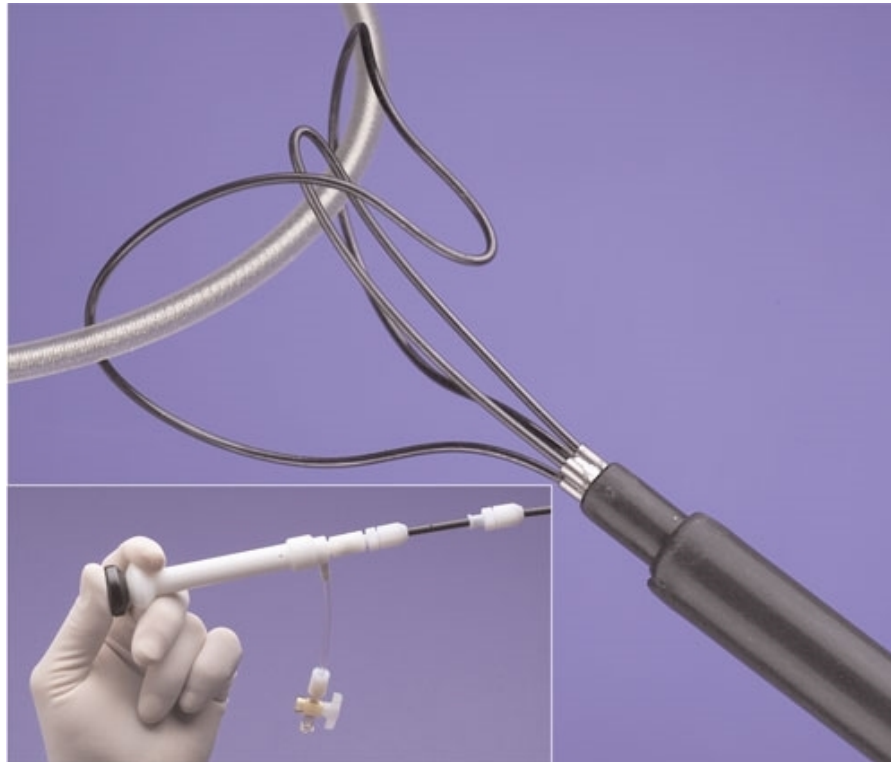


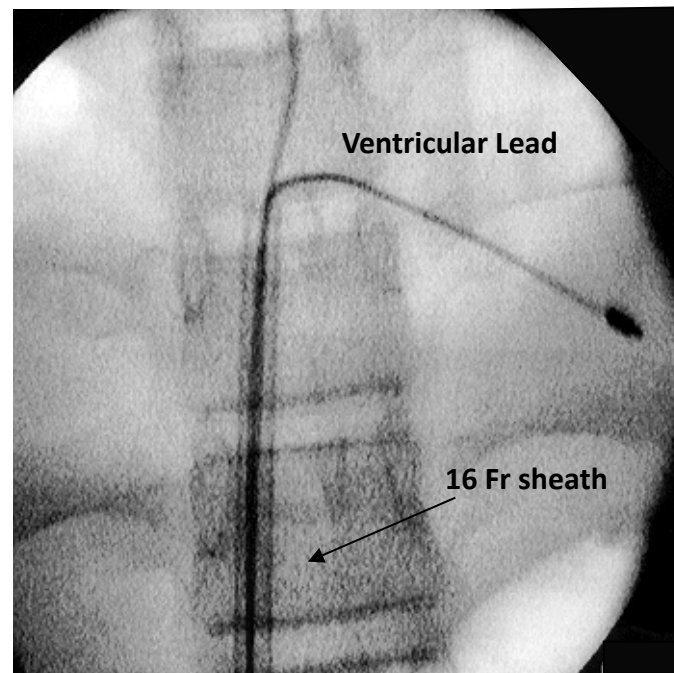
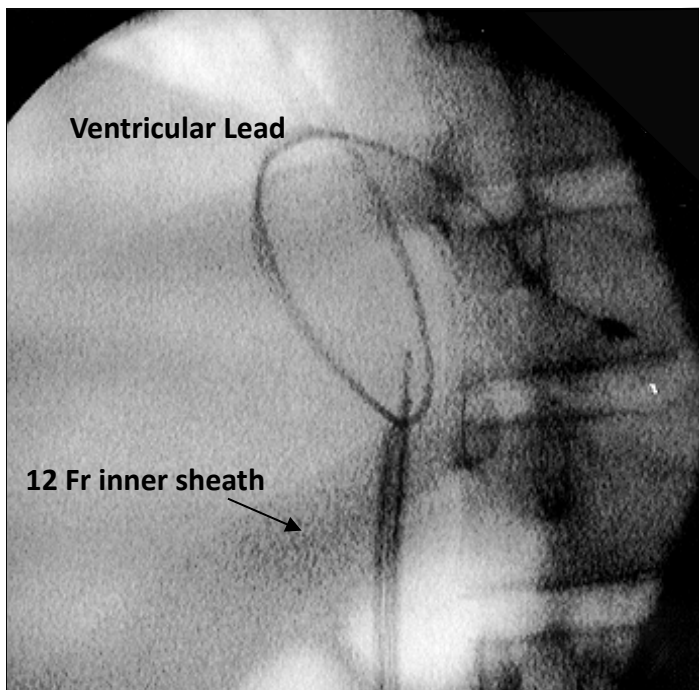
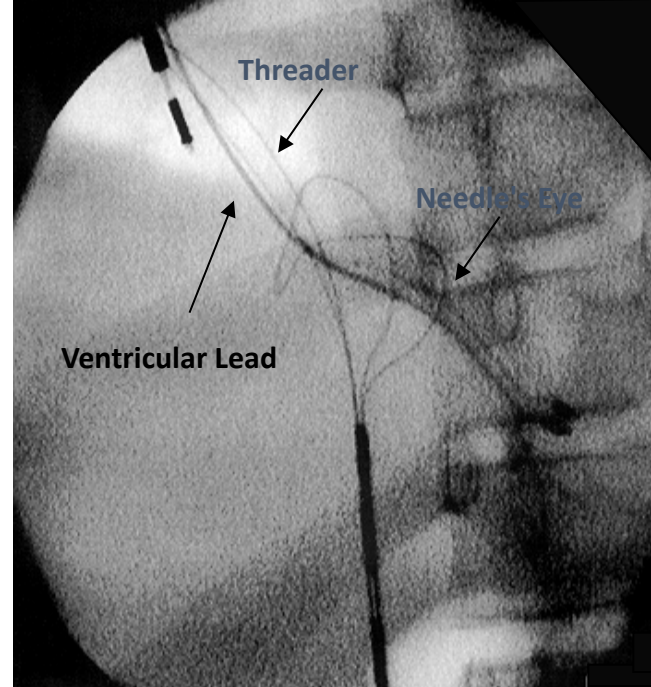
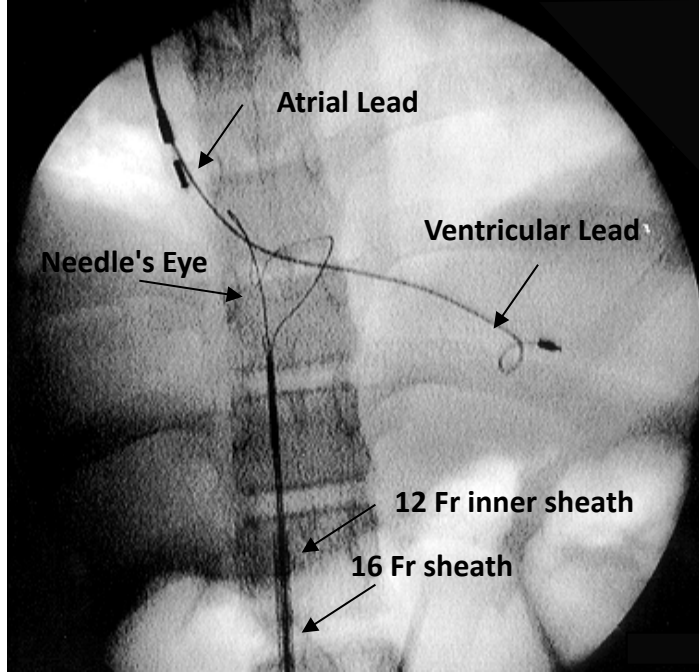
Les extractions par voie basse

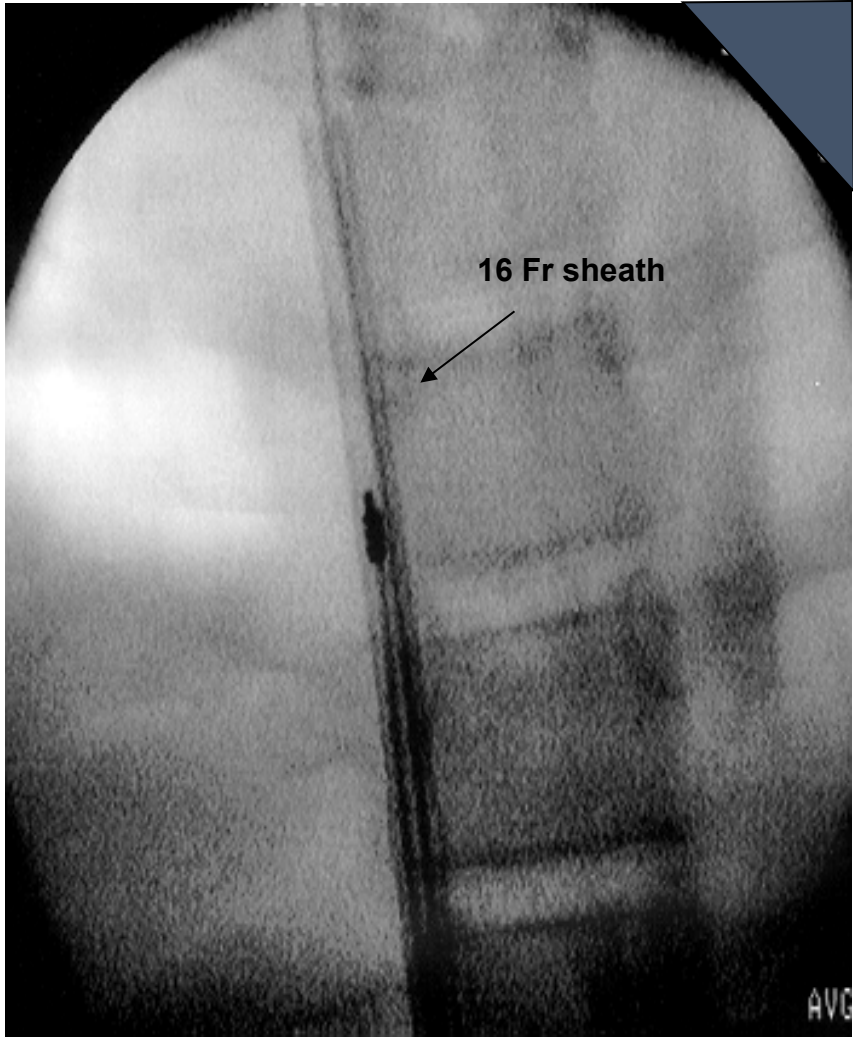
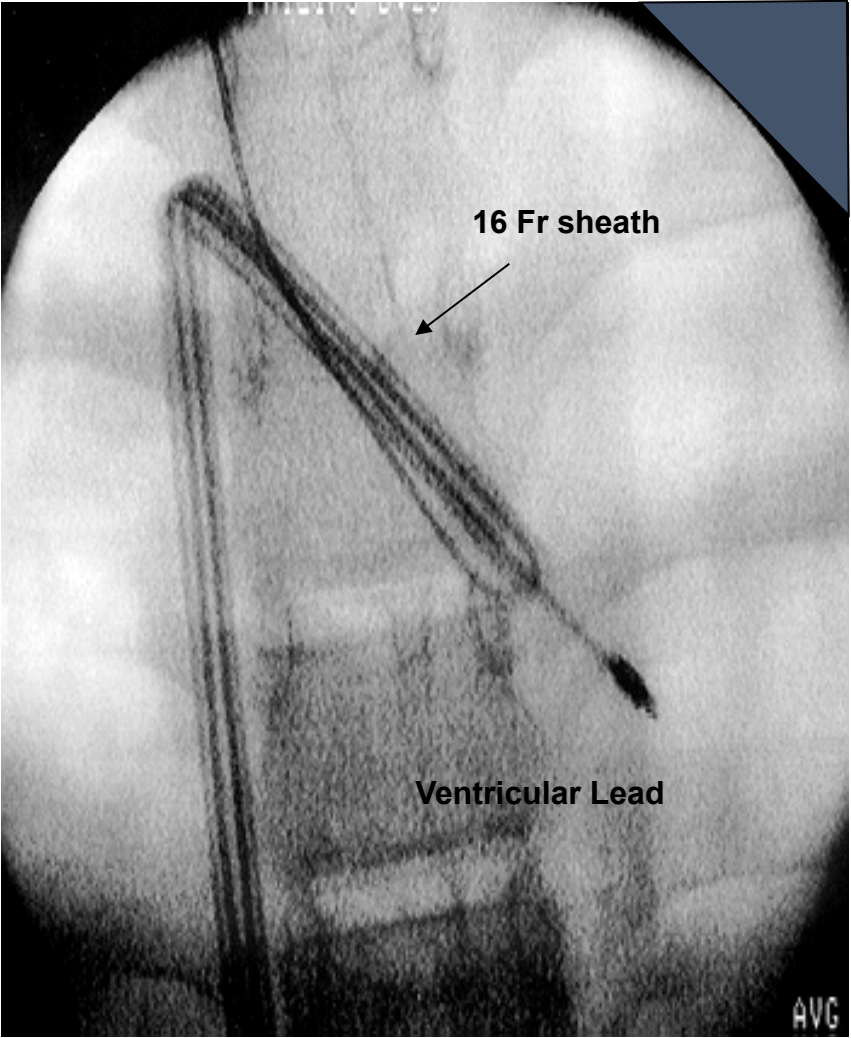




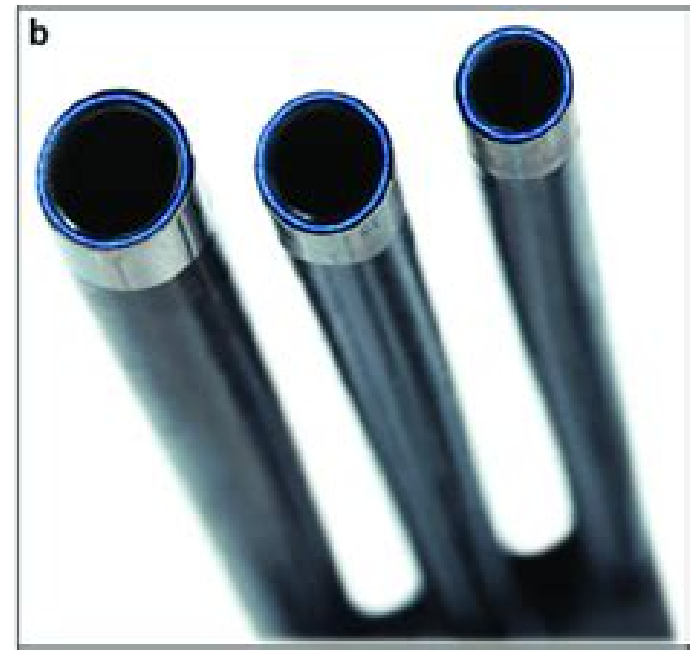
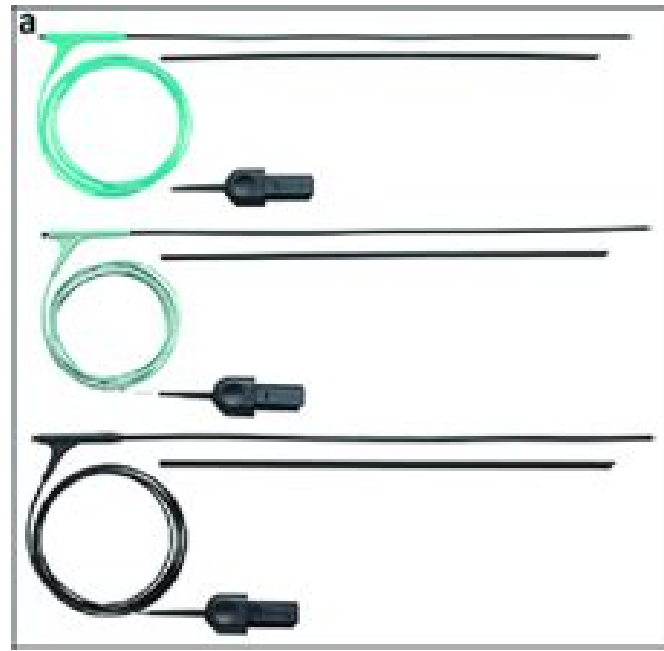
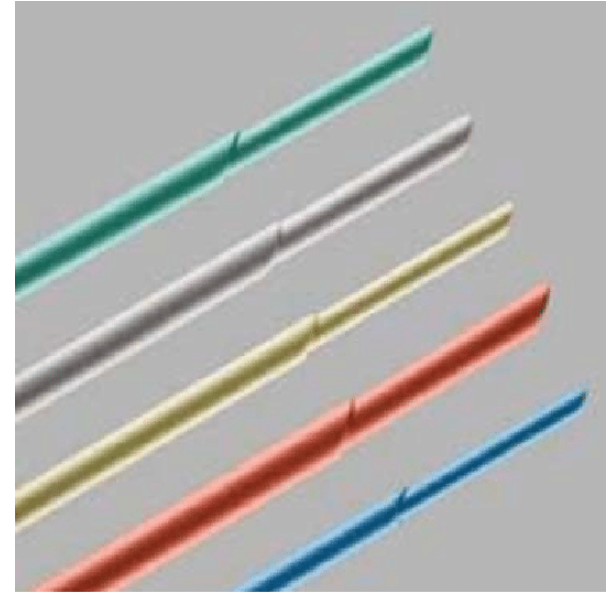
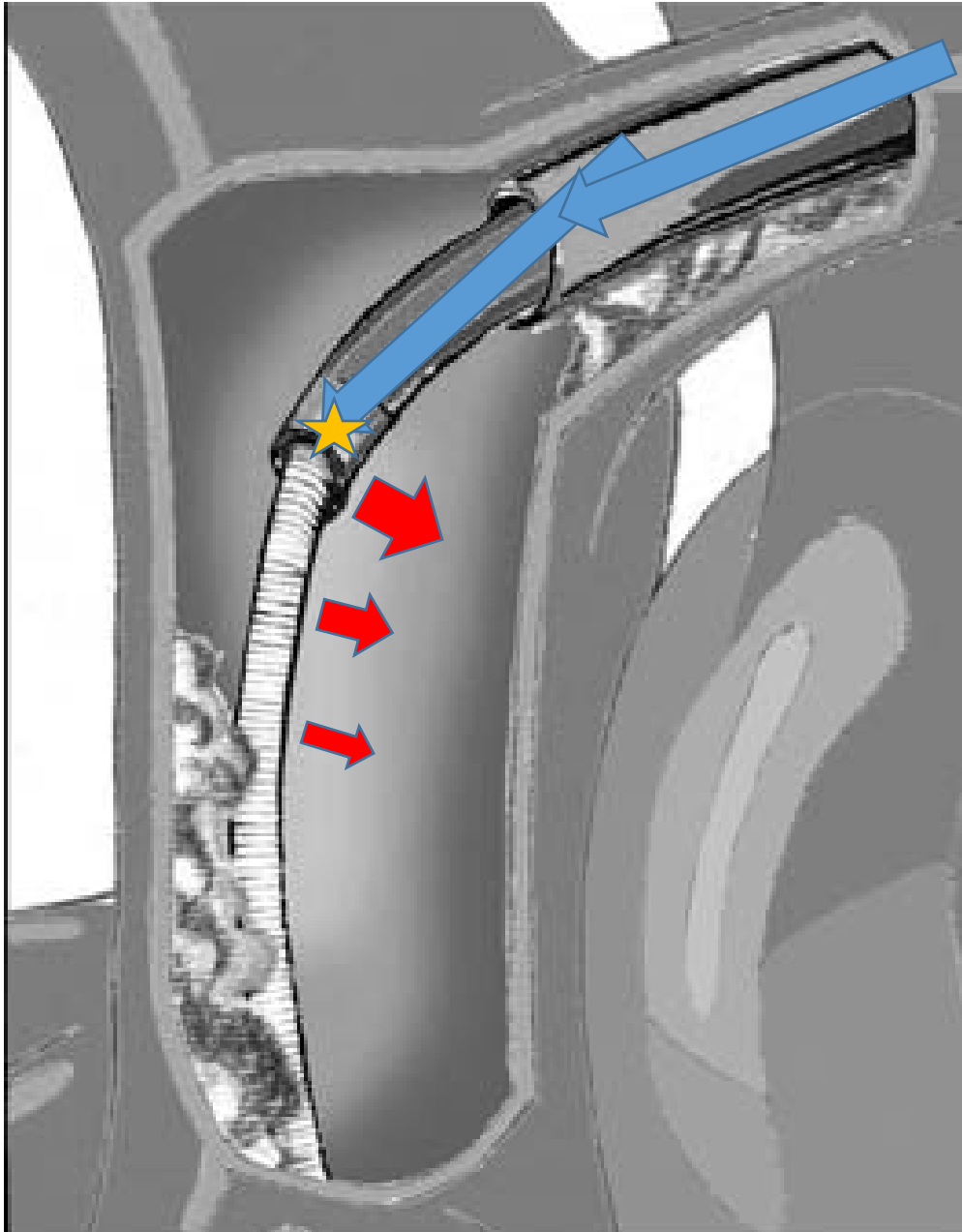
If the distal fixation can not be free



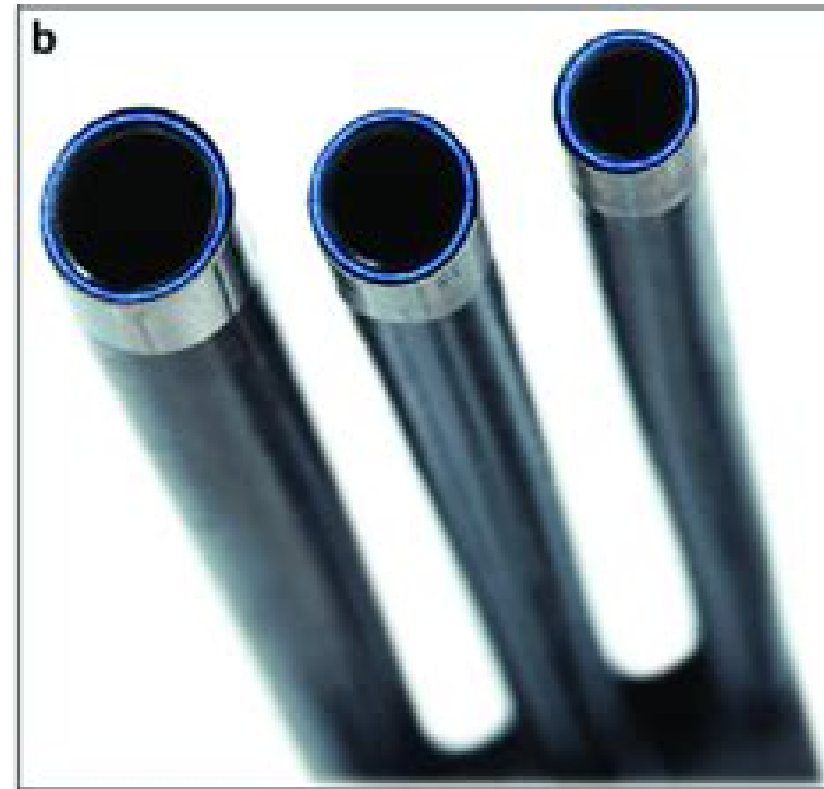


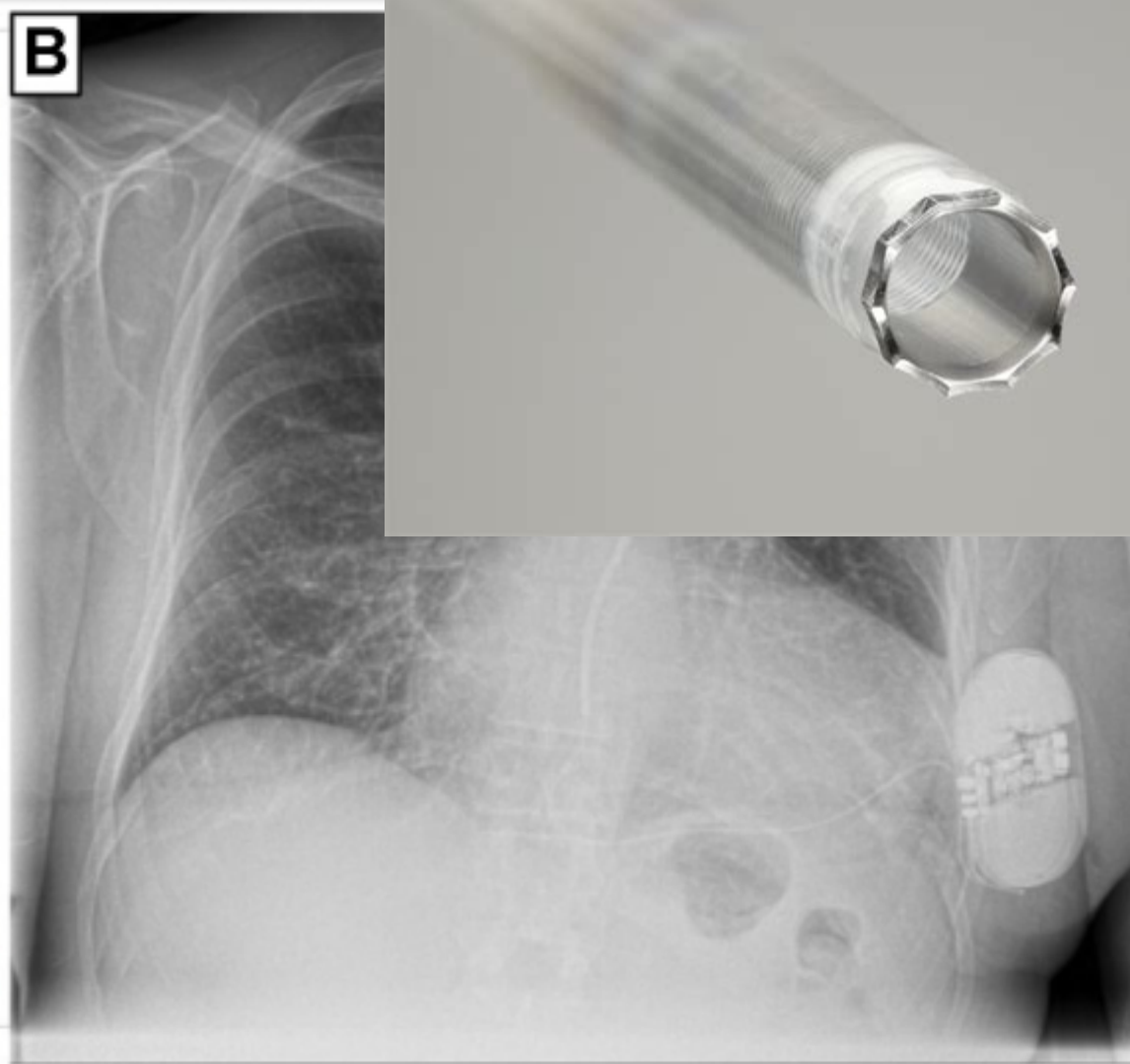
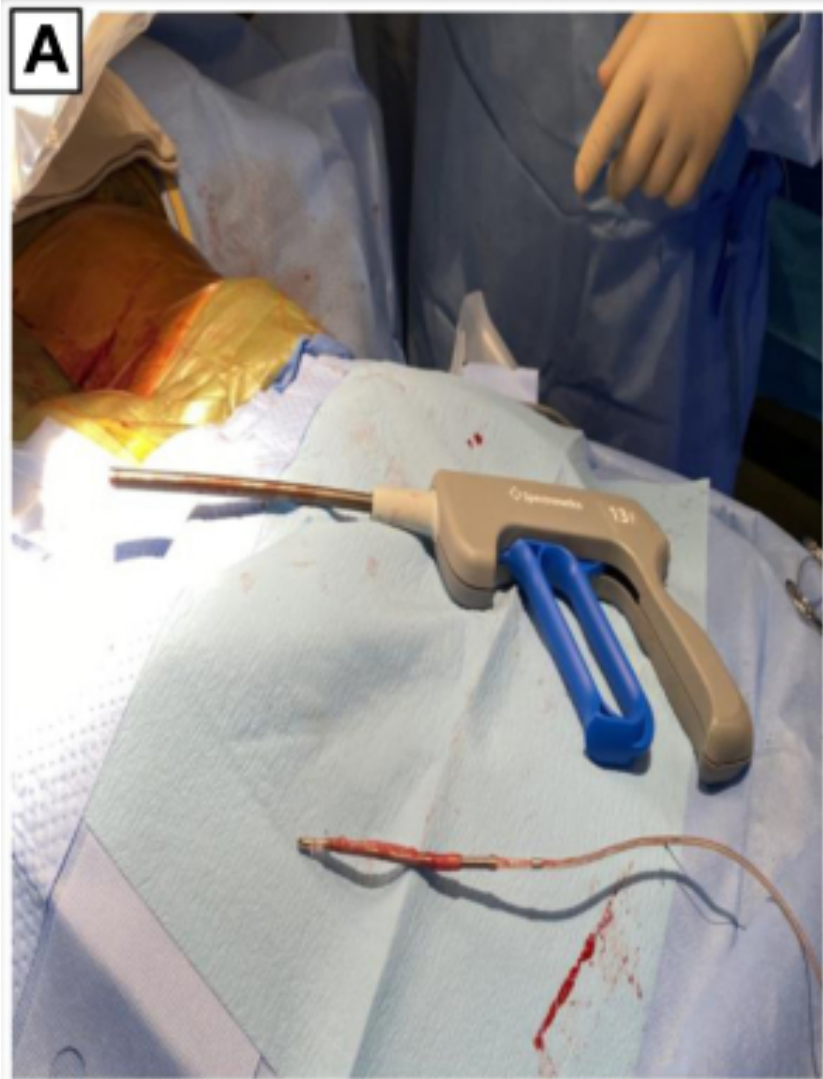


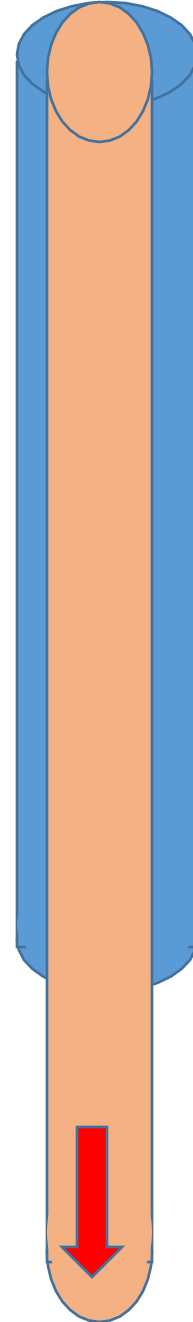
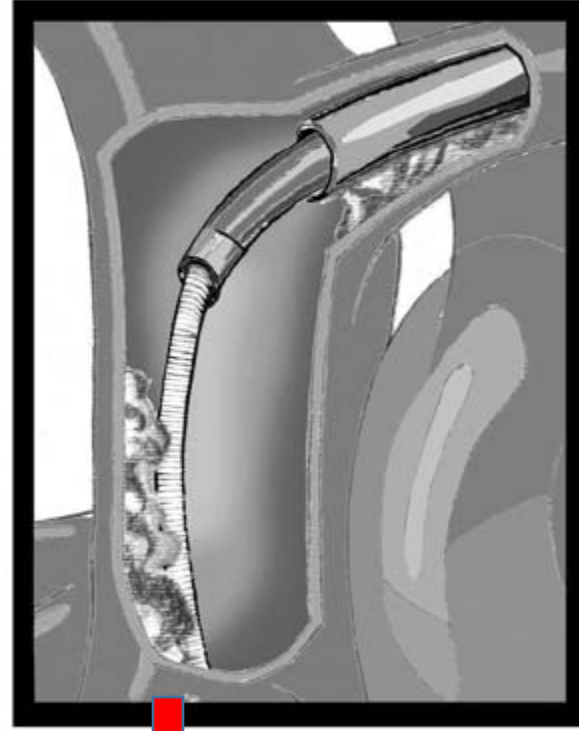
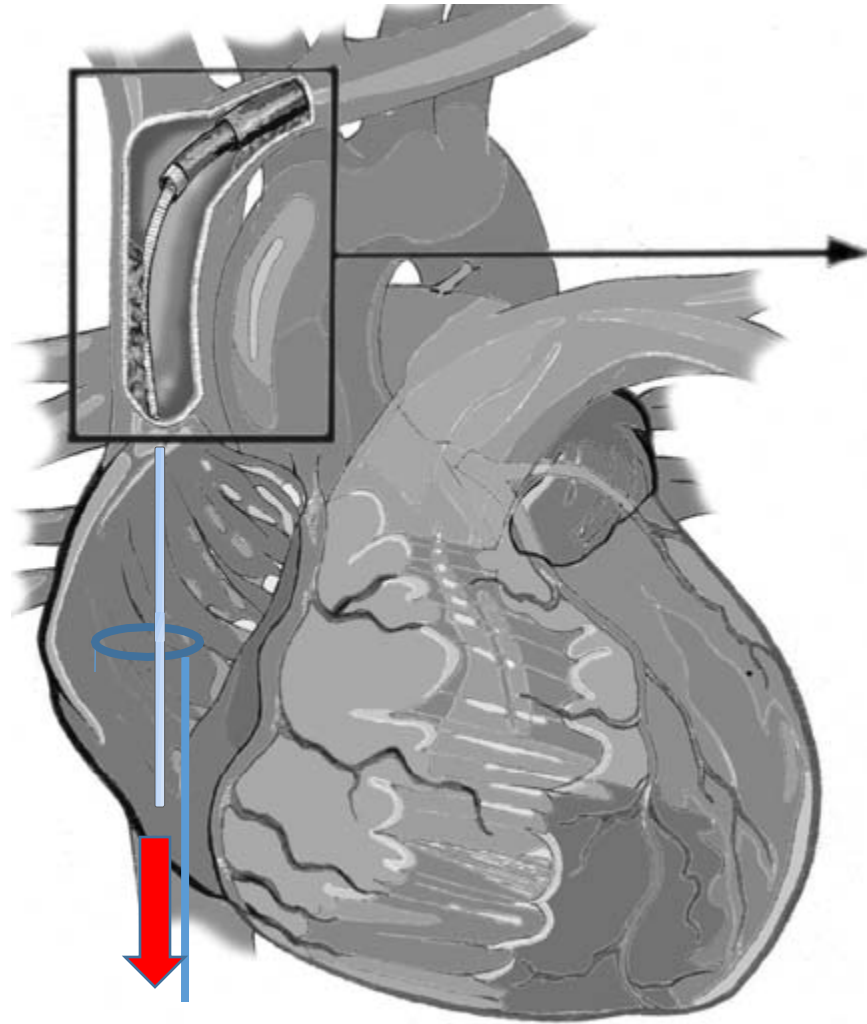
Les extractions par voie haute

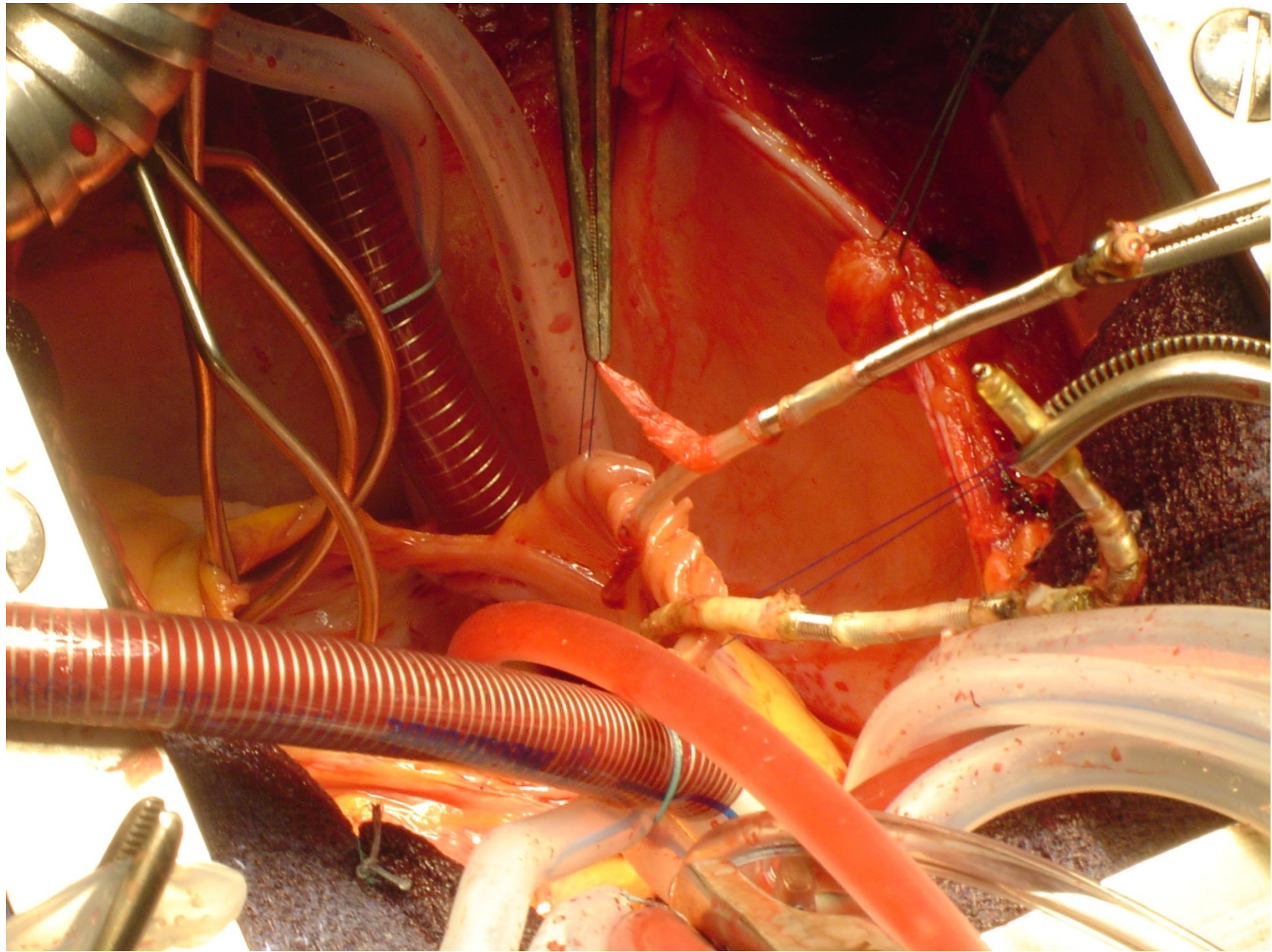


Gaines laser









Lead-related infective endocarditis: factors influencing the formation of large vegetations.

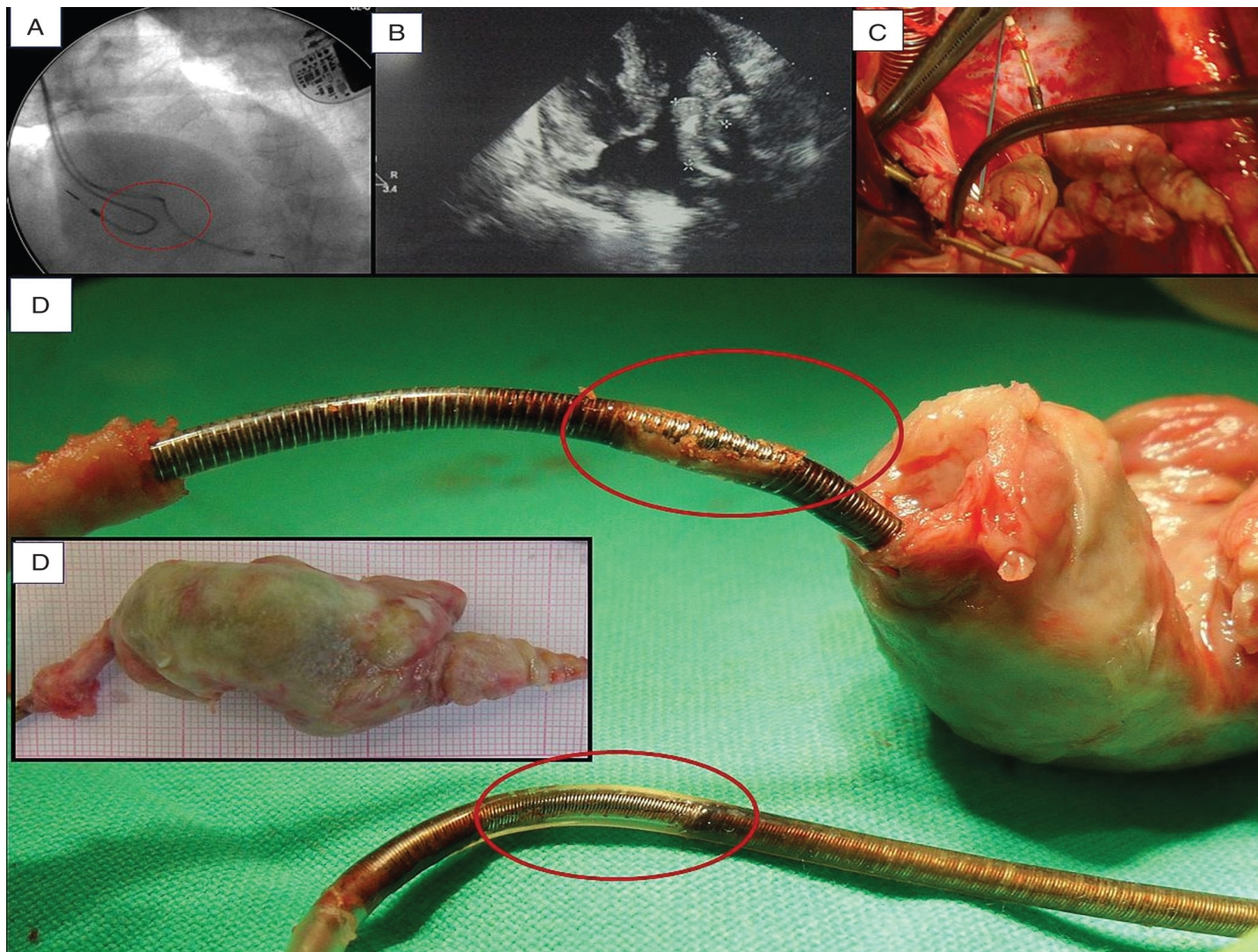
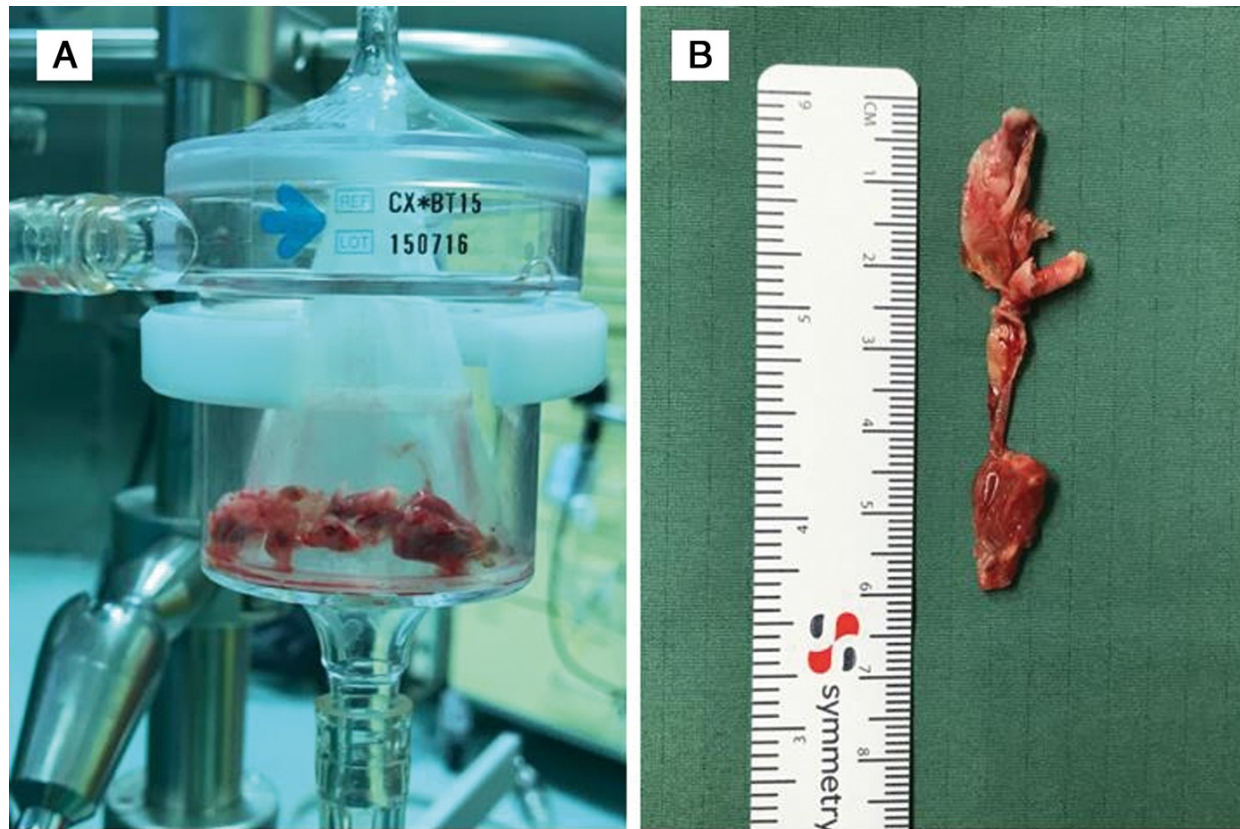


Figure 3 Result of a percutaneous aspiration procedure of vegetations using the AngioVac system.



L'extraction des sondes

- Dans un centre expert
- Avec un back-up chirurgical
- Une discussion sur l'ensemble de la prise en charge mêlant l'indication d'extraction, les techniques utilisées, les outils nécessaires et le matériel à réimplanter