

Examen radiologique de dispositifs implantables en cardiologie...



Antoine de Meester
Jolimont, le 1-3-2022



HELORA
PLUS QU'UN RÉSEAU HOSPITALIER

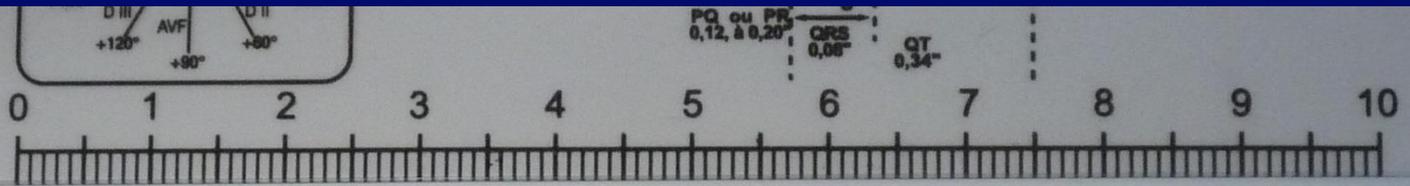
Dispositifs implantables = pacemaker, défibrillateur, ILR (loop Recorder), ... TAVI ...



**Pacemaker
(stimulateur cardiaque)**



**Défibrillateur
automatique interne**



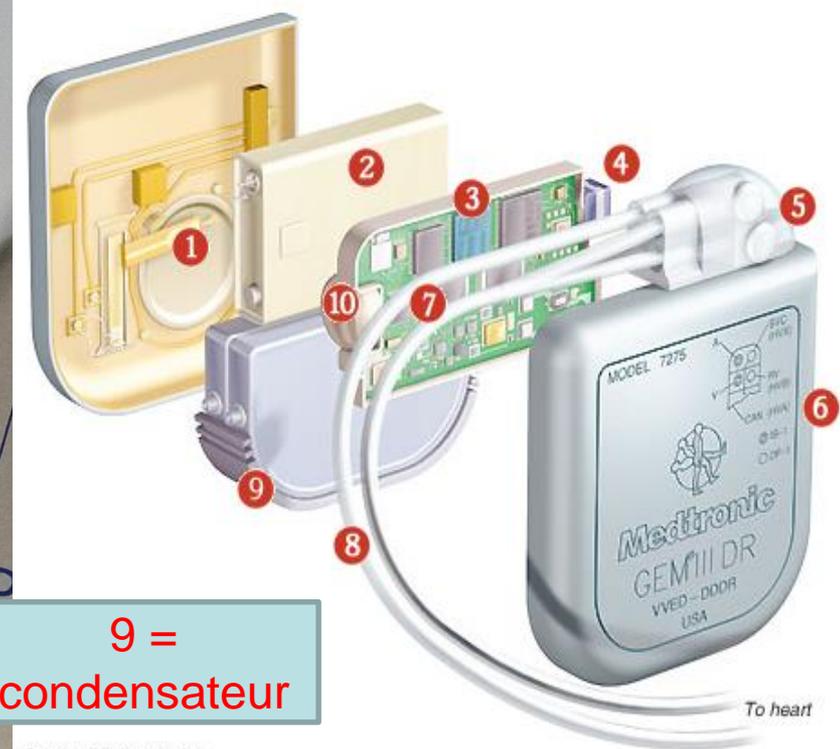
Connecteur

Circuit

Pile



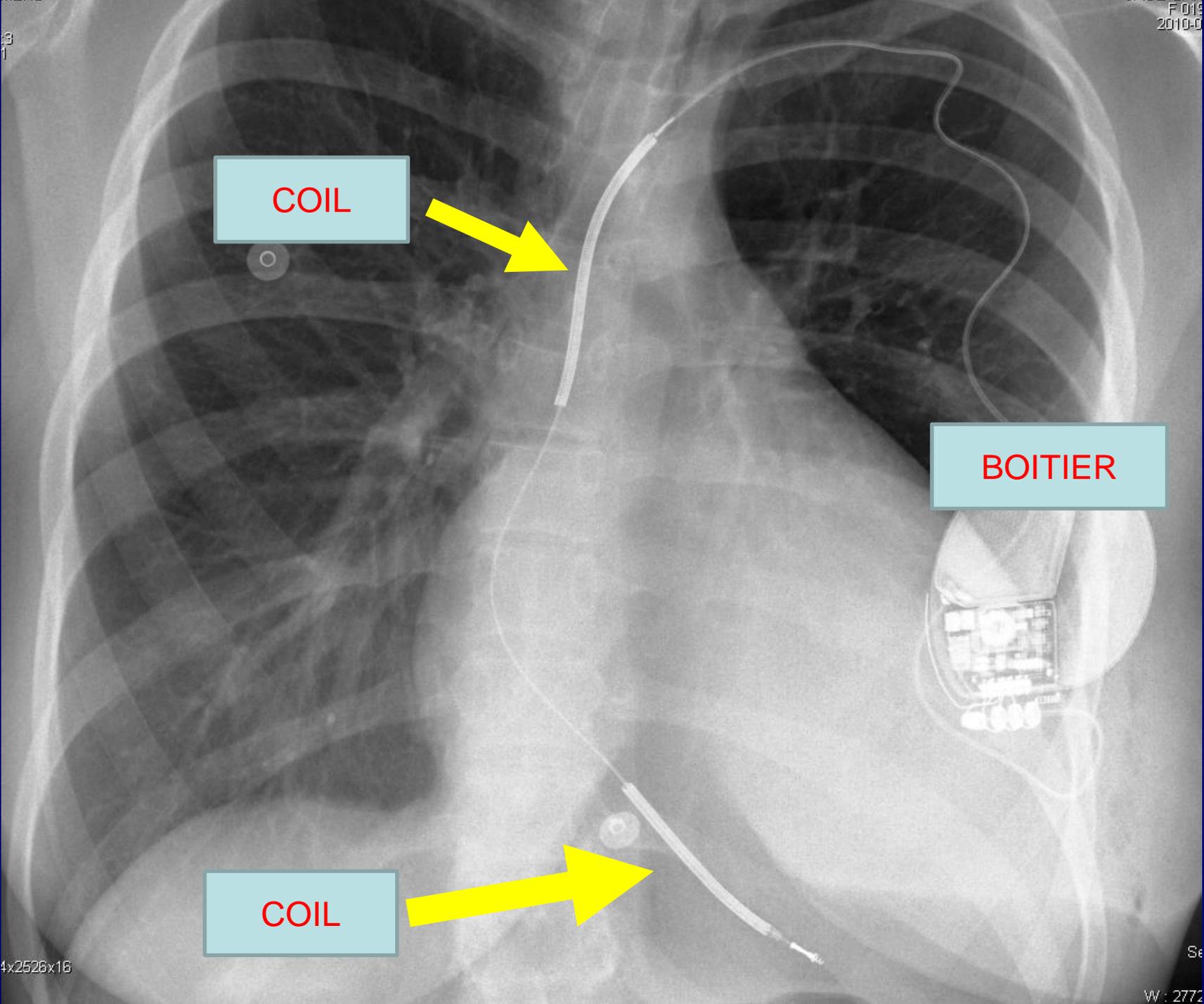
**Pacemaker
(stimulateur cardiaque)**



9 =
condensateur

Source: Medtronic, Inc.

**Défibrillateur
automatique interne**



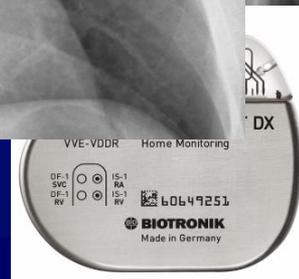
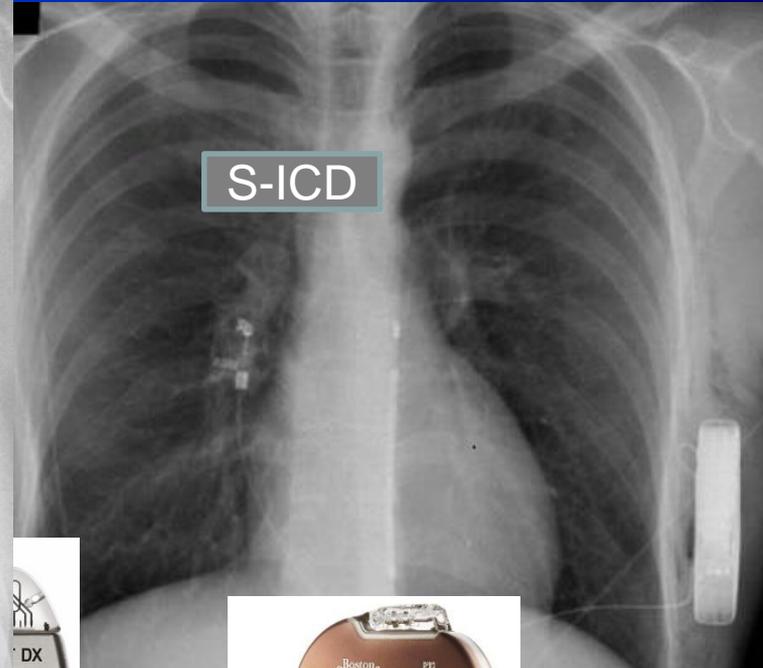
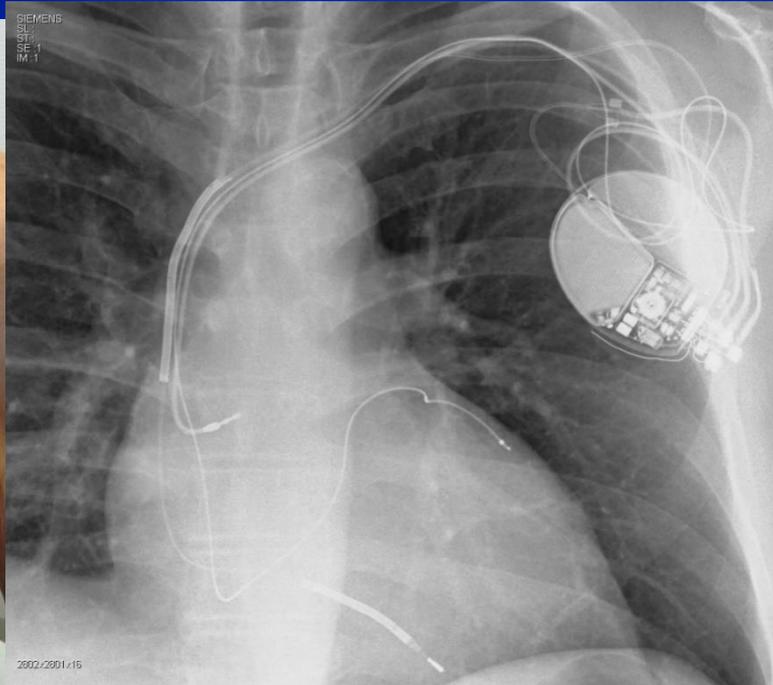
COIL

BOITIER

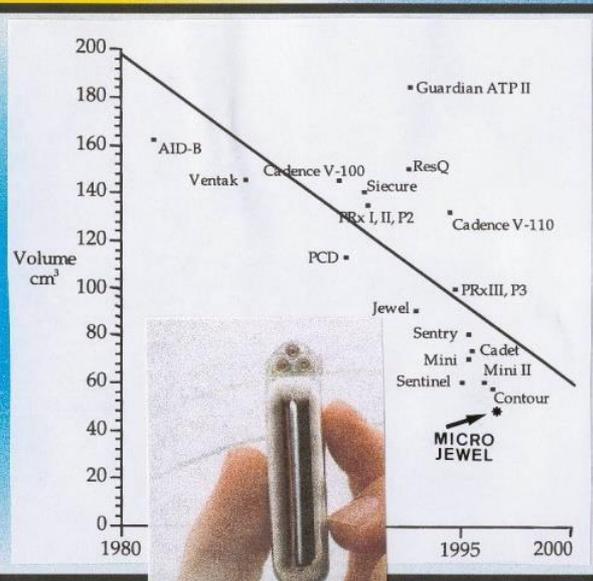
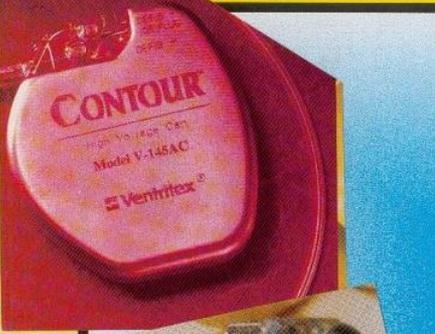
COIL

Prise en charge en urgence de patients avec ICD

Patient connu, carte du défibrillateur,
... radiographie thoracique



Volume des générateurs (1981-1997)



Boitiers plus petits, ... plus ergonomiques

PhysioCurve®

30% reduction in skin pressure¹

Designed with lead wrap in mind: Landing area to minimise additional stress on the lead¹⁶



Tapered at the header and bottom of device to promote patient comfort

Smaller footprint for a smaller incision



10 mm



11 mm



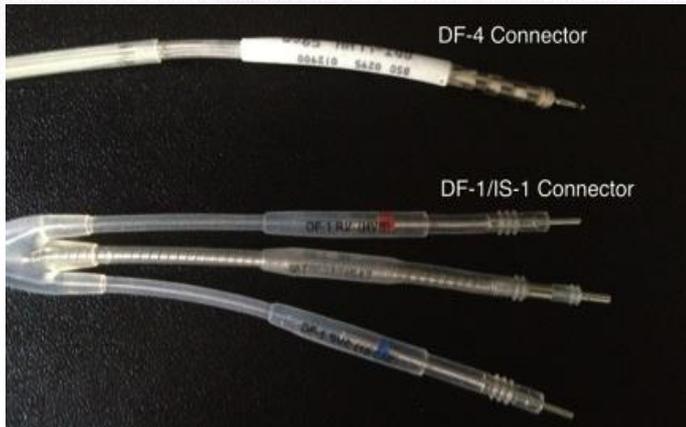
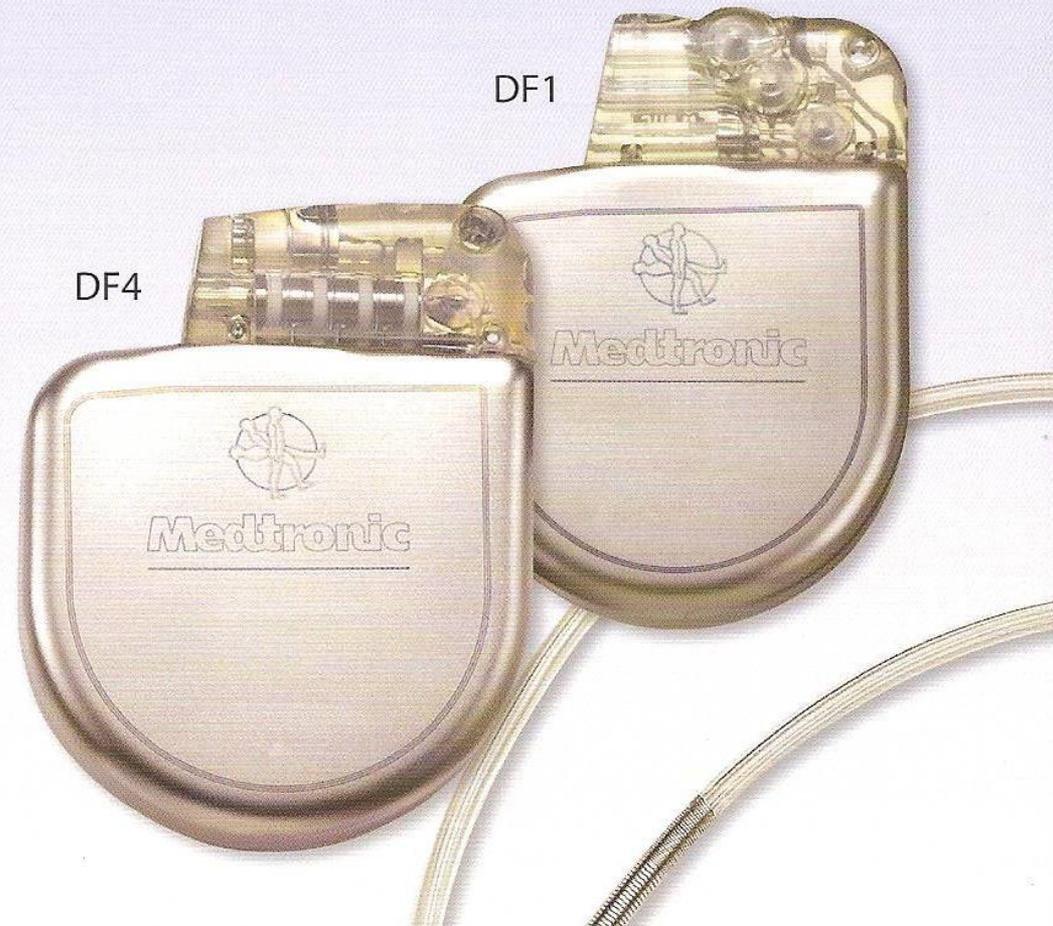
31.2 cc
(VR 1240 model)

Innovative Design. Extensive Testing.

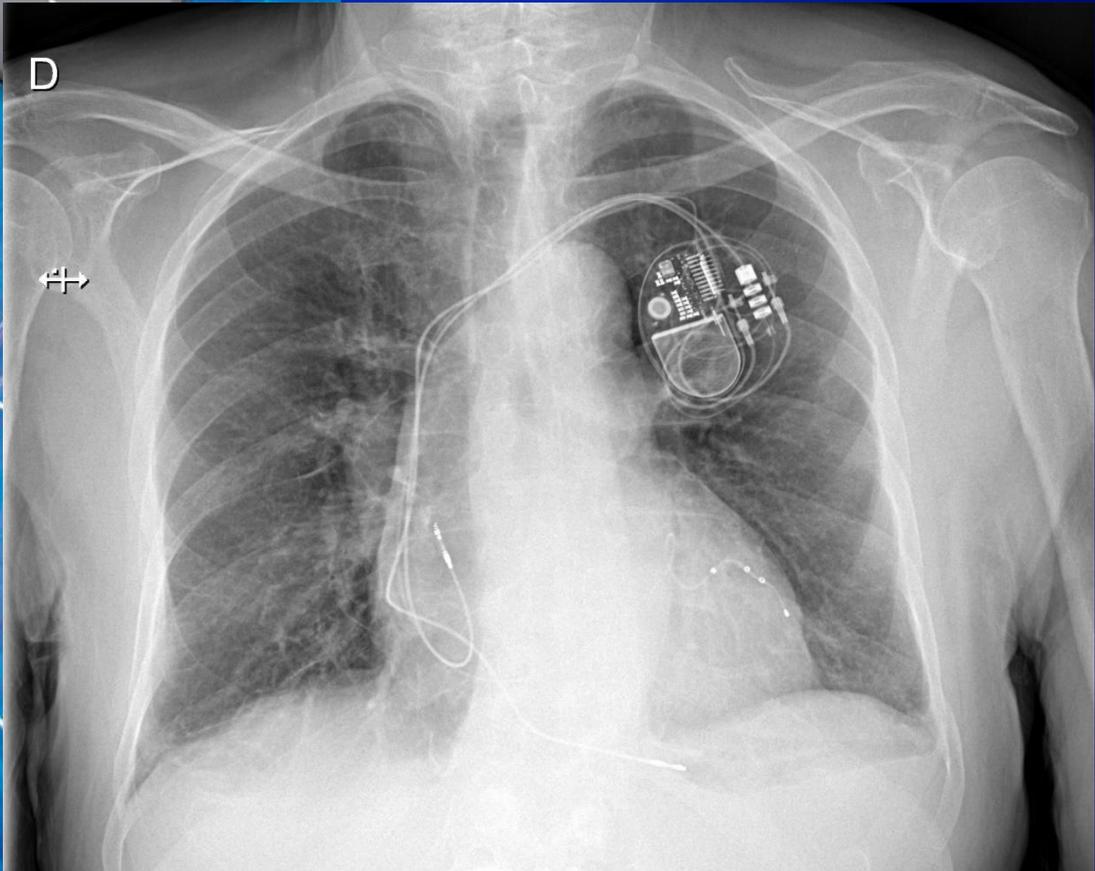
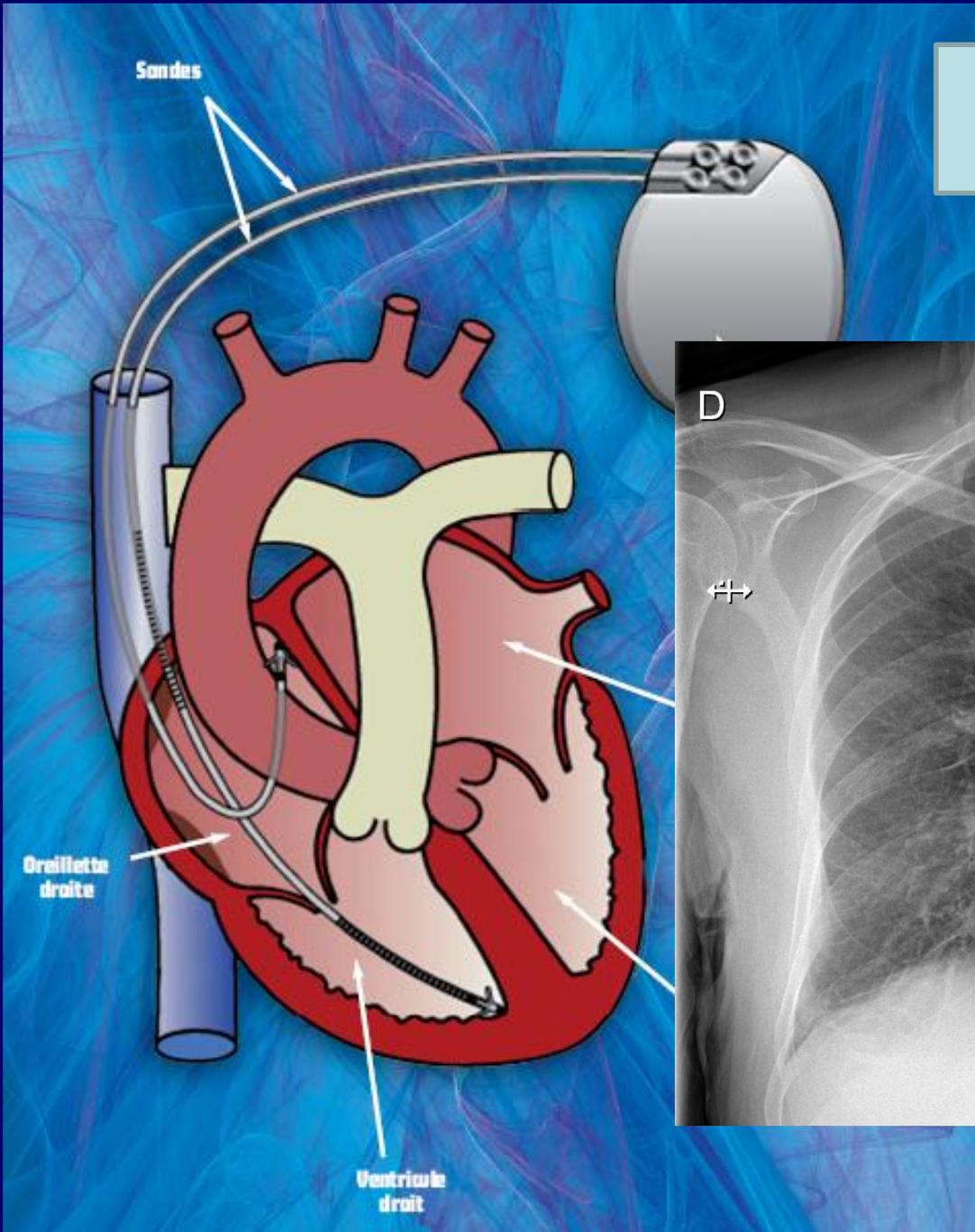
Single set screw on the RV port

No potential connection errors between SVC and RV coil

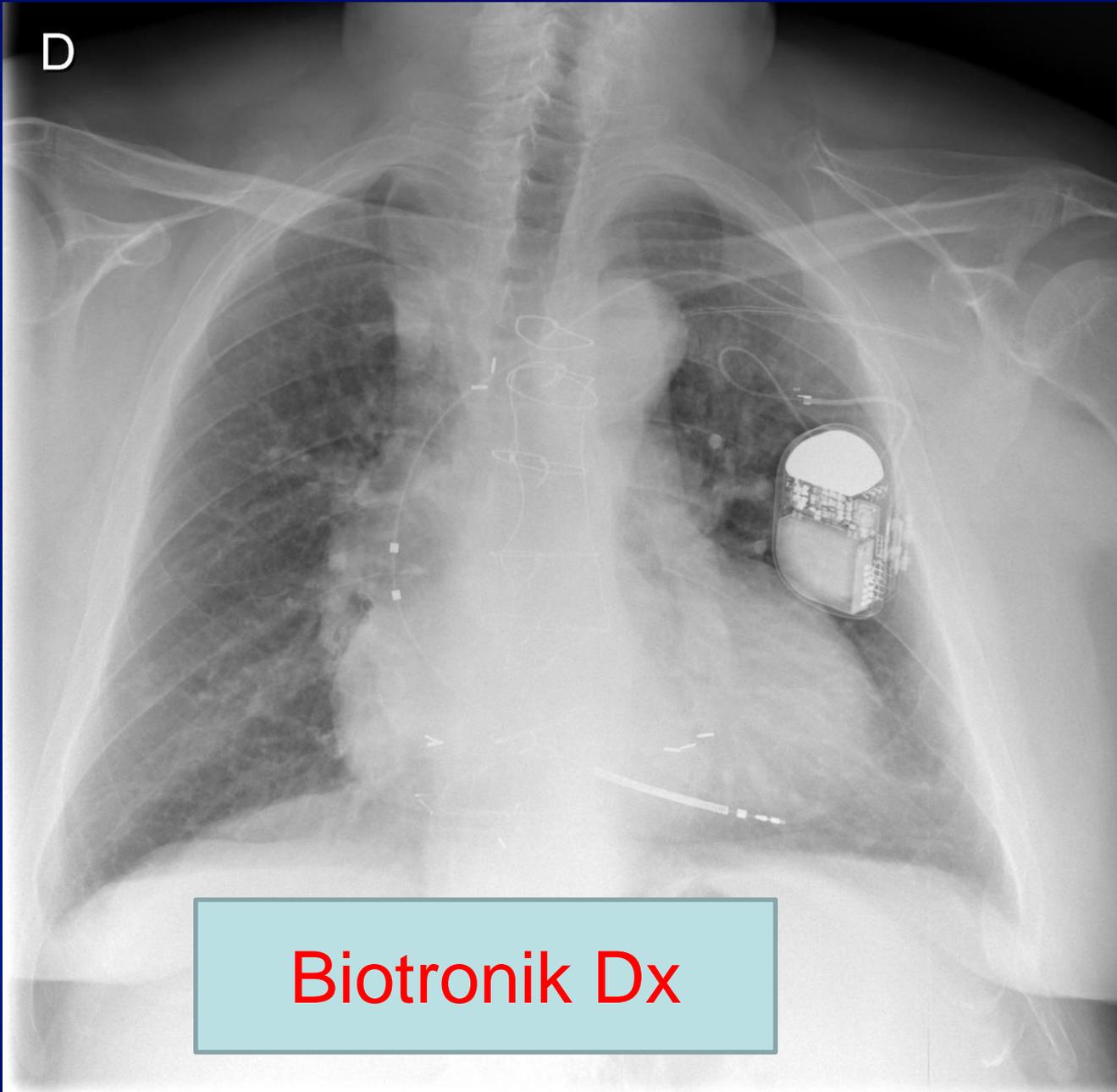
Up to 58% reduction in lead volume¹



1-2-3 sondes

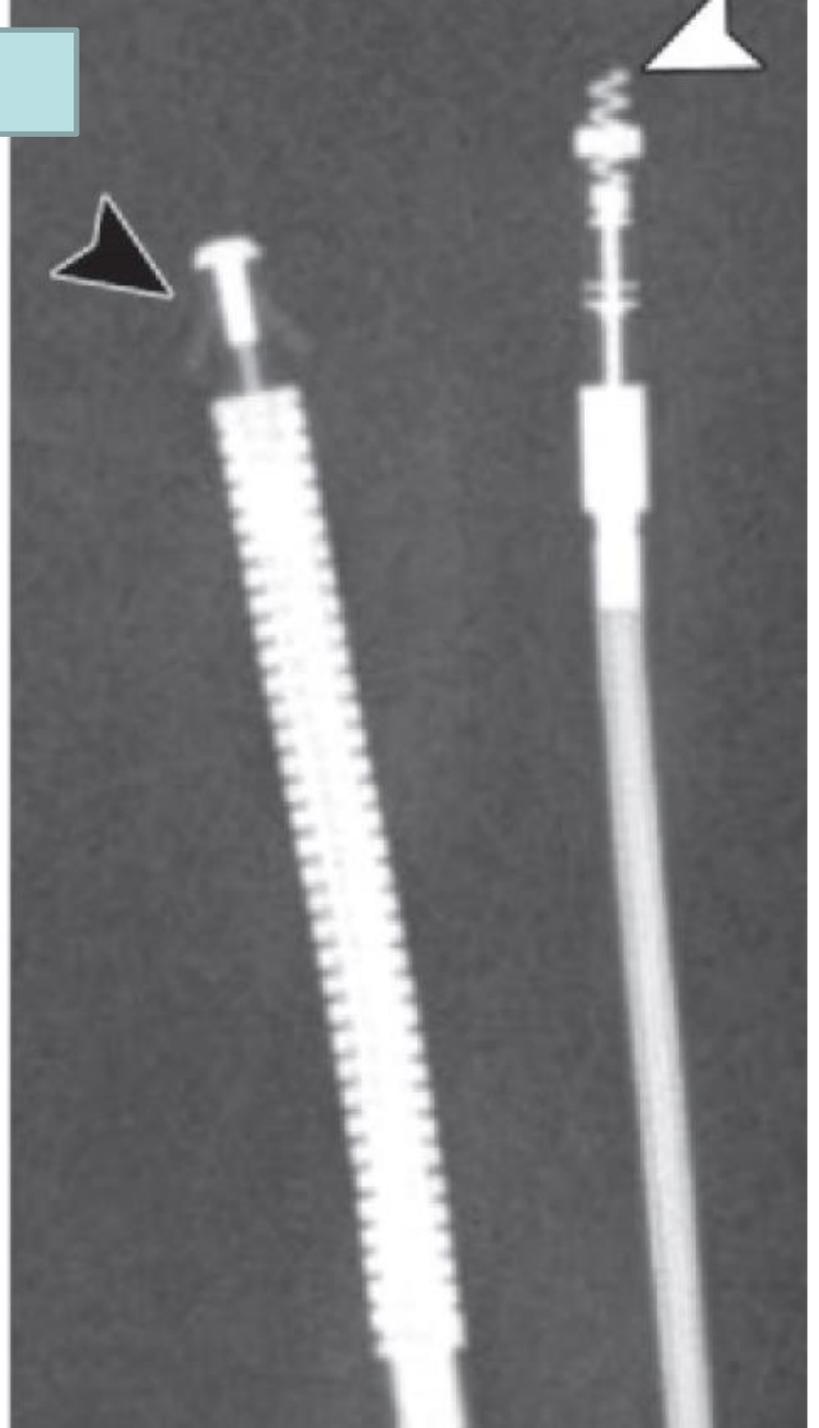


D

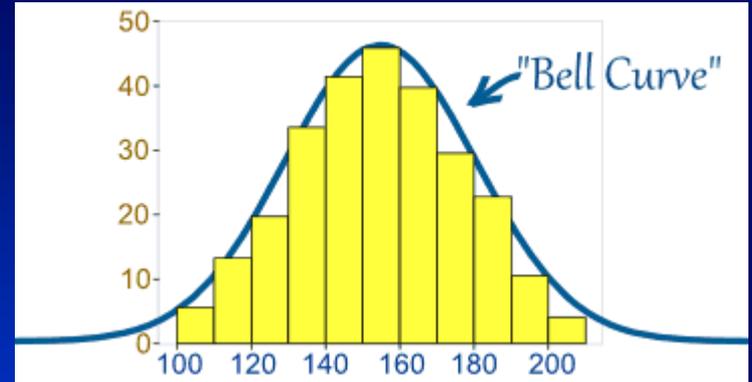


Biotronik Dx

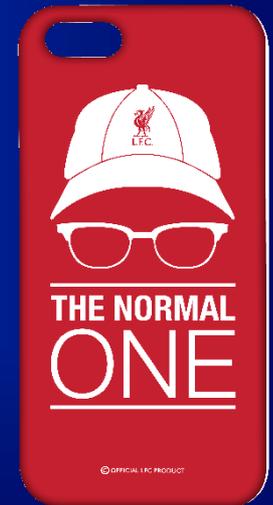
Sondes passives ou à visser

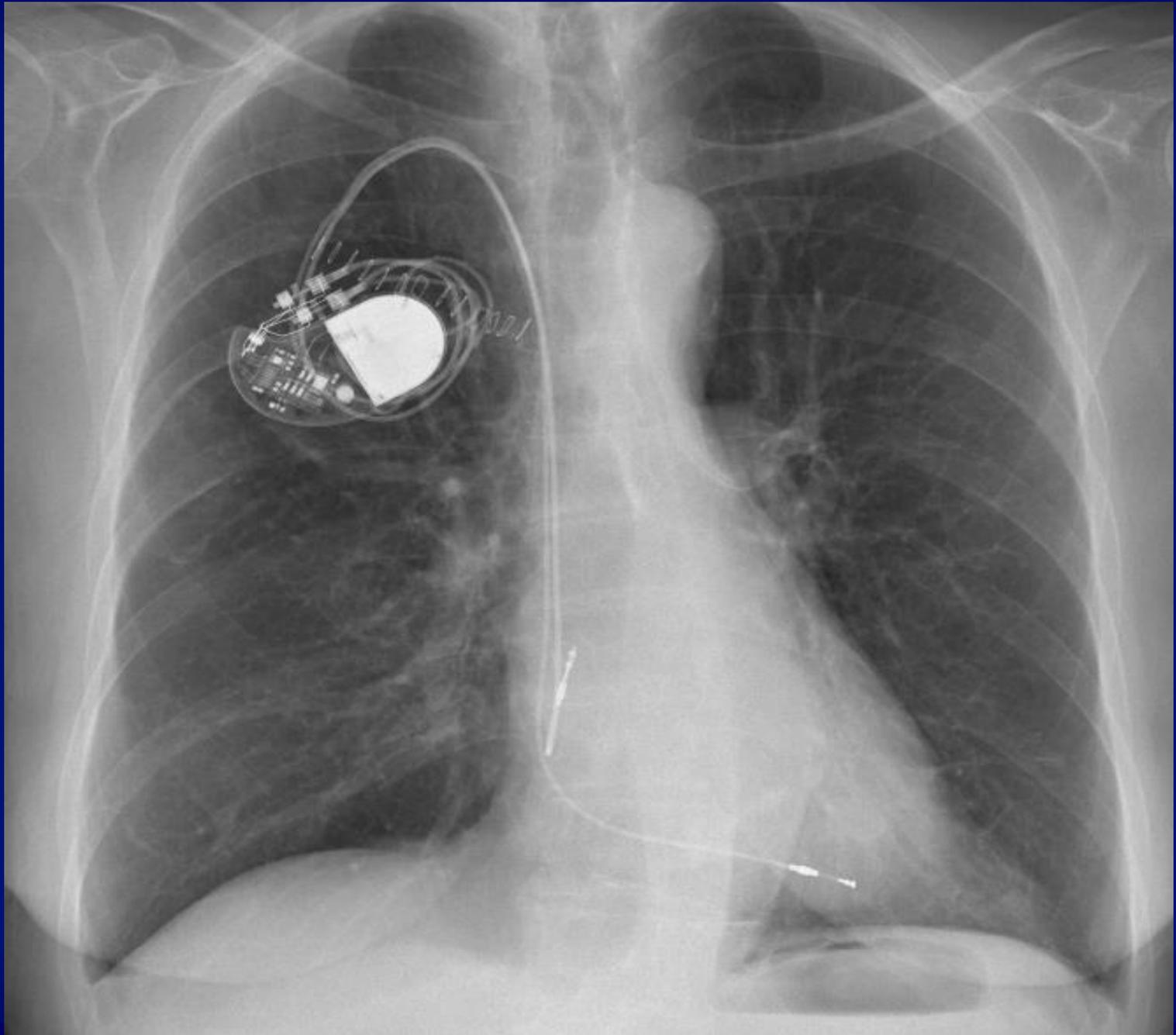


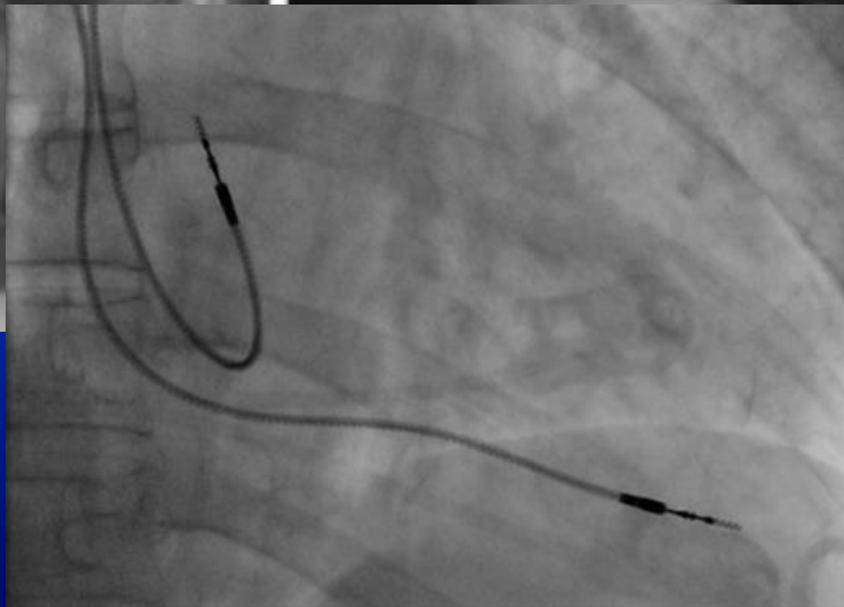
NORMAL



What is NORMAL?



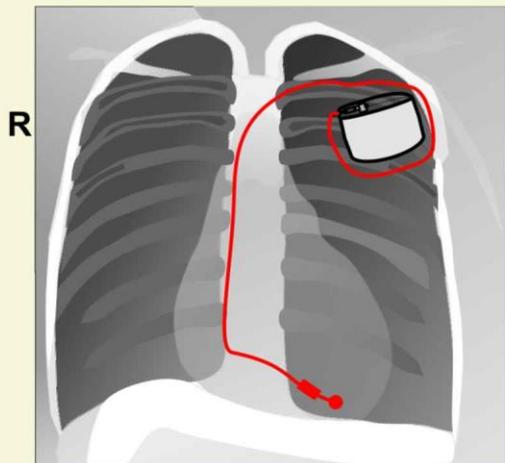




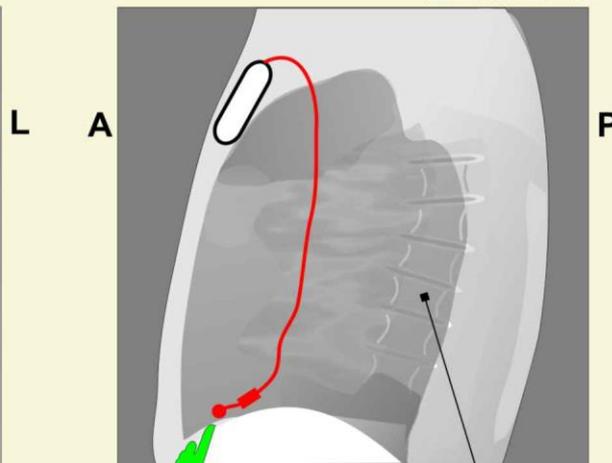
Ventricular lead in right ventricular apex

Step by Step

FRONTAL

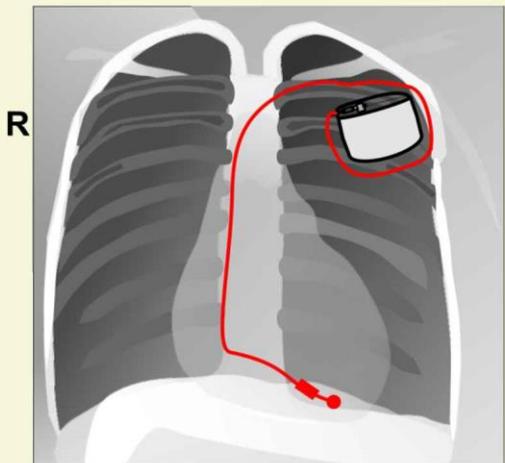


L. LATERAL



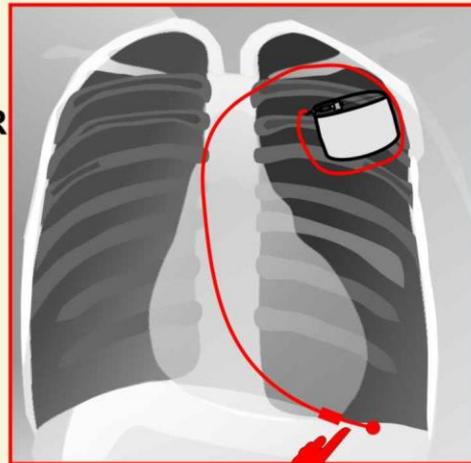
The RV lead is anterior because the right ventricle is anterior

FRONTAL



The RV lead may plunge below the diaphragmatic shadow. This is normal and may not be interpreted as perforation without other findings !!!

FRONTAL



PERFORATION !
The lead is clearly beyond the cardiac shadow !

SCHEMATIC REPRESENTATION OF LEAD POSITION FOR VVI PACING

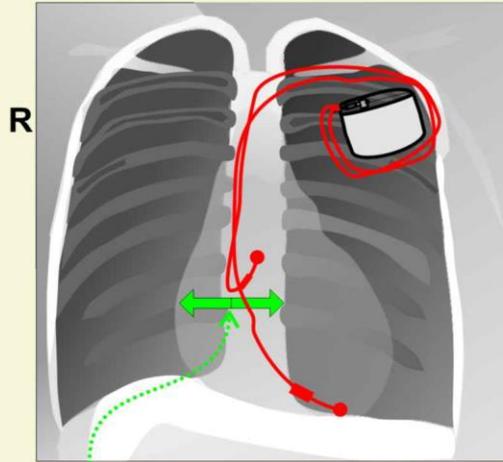
An Illustrated Guide

A. F. Sinnaeve

Step by Step

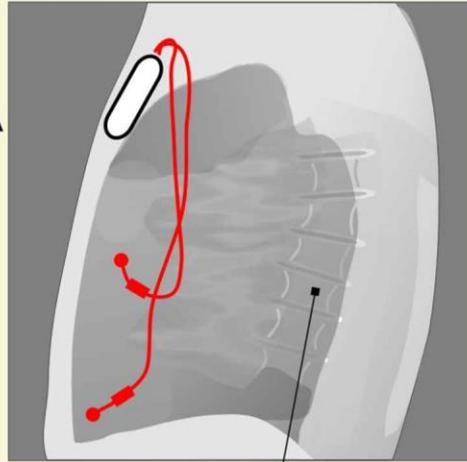
**Atrial lead in right atrial appendage
(J lead with passive fixation)**

FRONTAL



Windscreen wiper movement of atrial lead

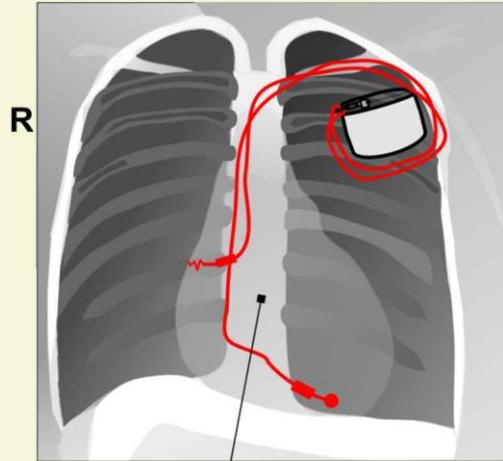
LATERAL



spine

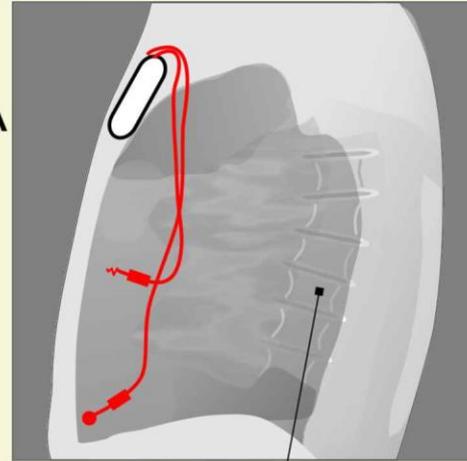
**Atrial screw-in lead in the mid-lateral wall
(active fixation)**

FRONTAL



spine

LATERAL



spine

SCHEMATIC REPRESENTATION OF LEAD POSITIONS FOR DUAL CHAMBER PACING

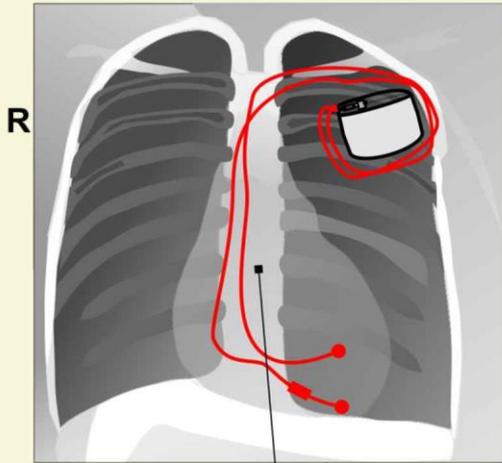
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Step by Step

ATRIAL LEAD IN CORONARY SINUS

FRONTAL

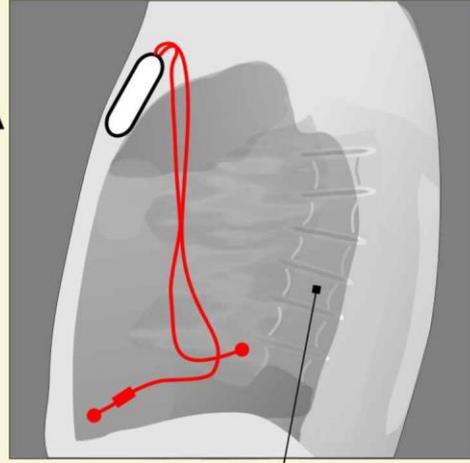


L

A

spine

LATERAL

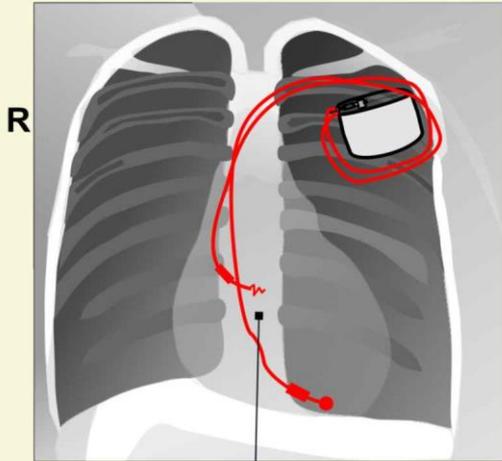


P

spine

INTRA-ATRIAL SEPTAL PACING

FRONTAL

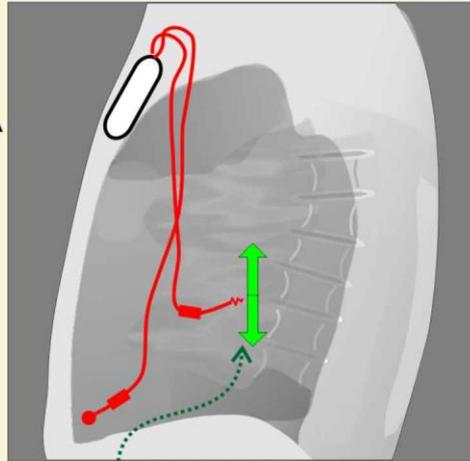


L

A

spine

LATERAL



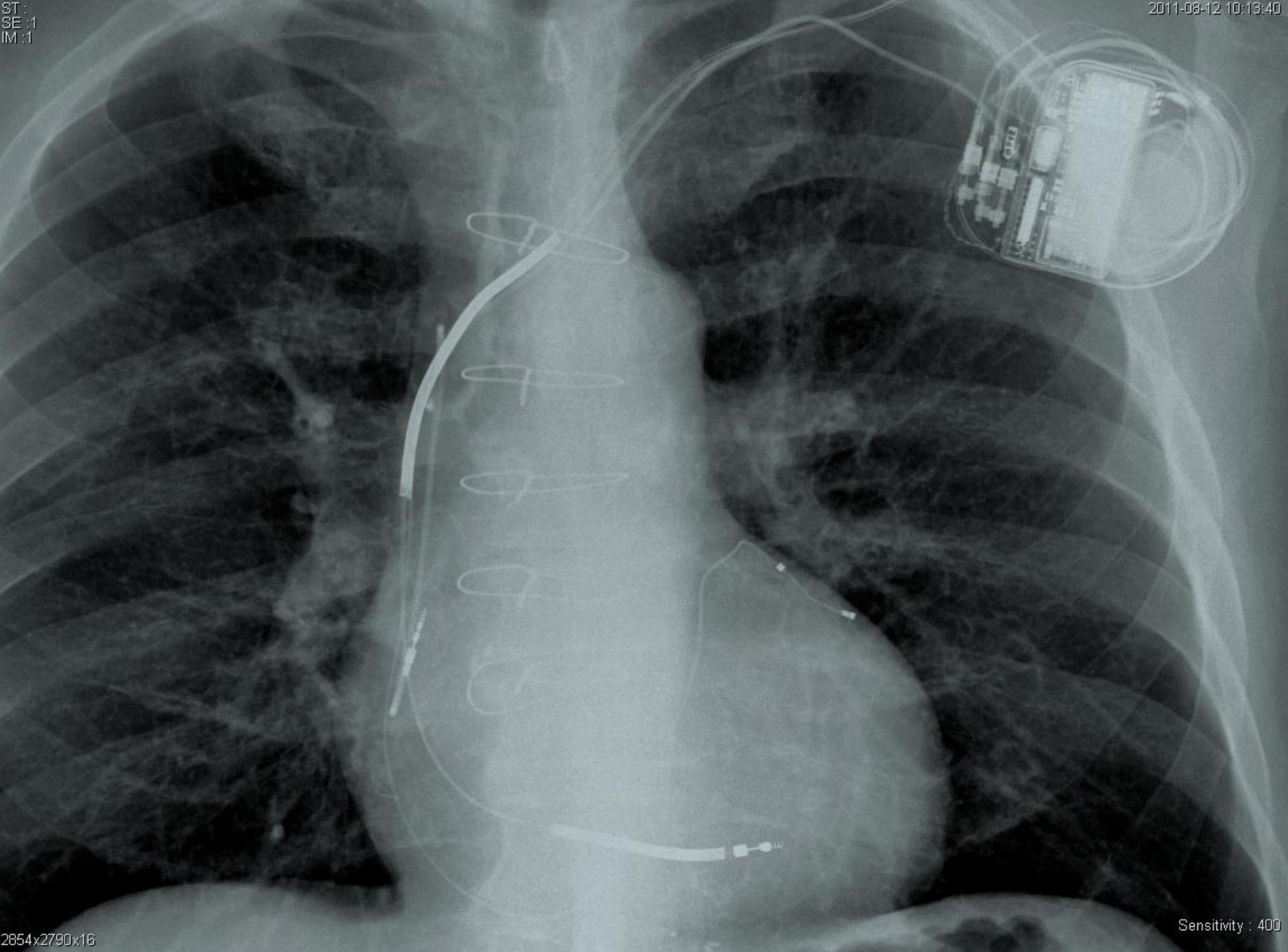
P

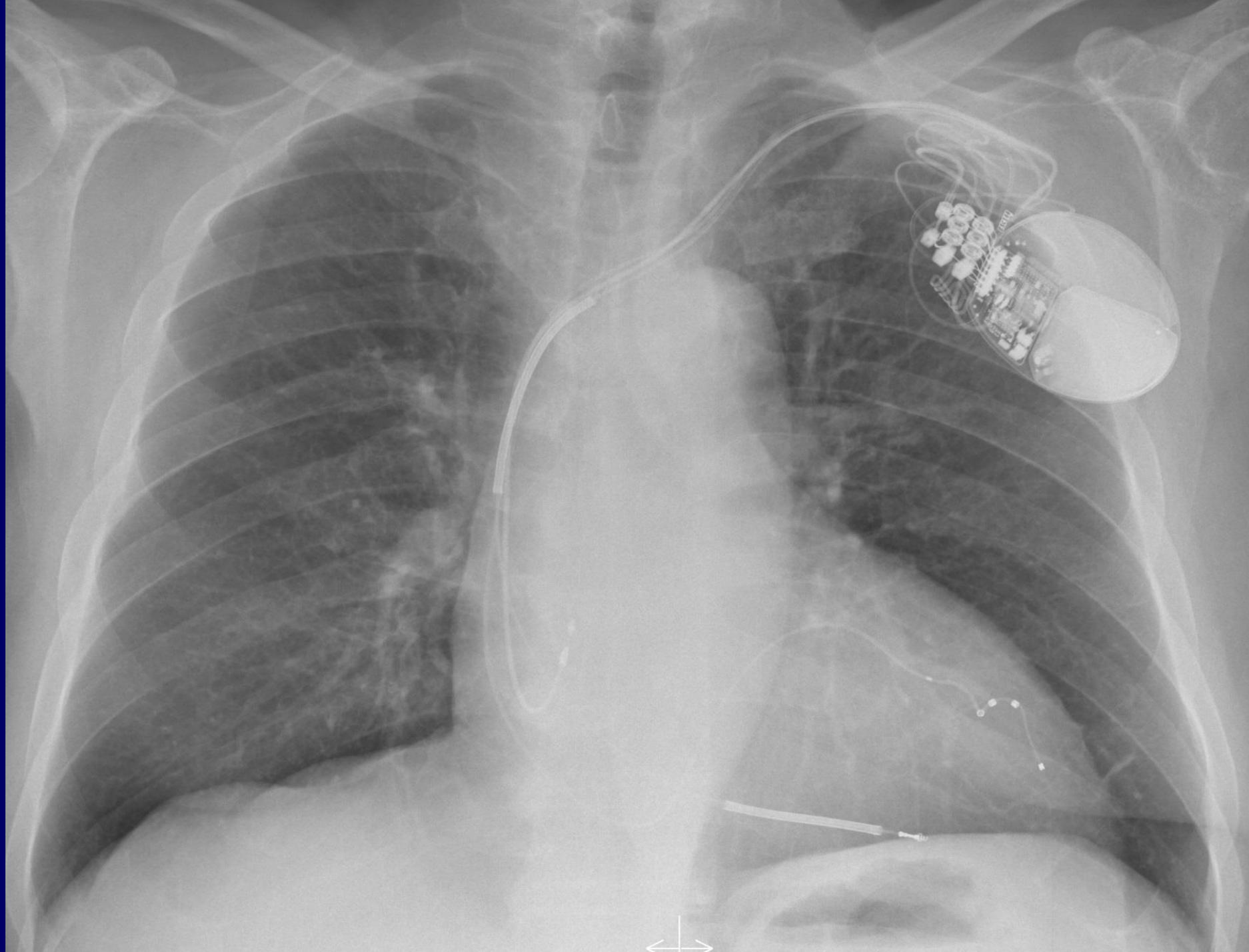
Up-and-down movement of atrial lead

SCHEMATIC REPRESENTATION OF LEAD POSITIONS FOR DUAL CHAMBER PACING

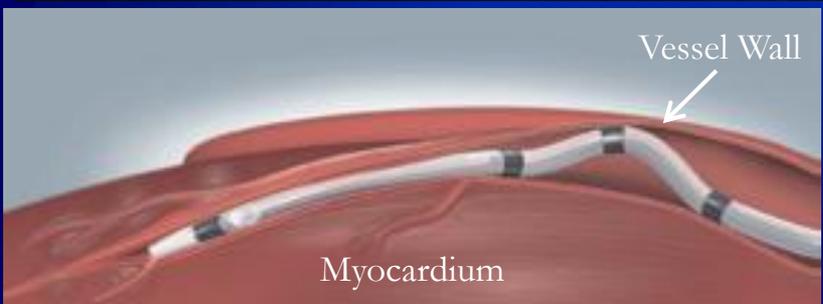
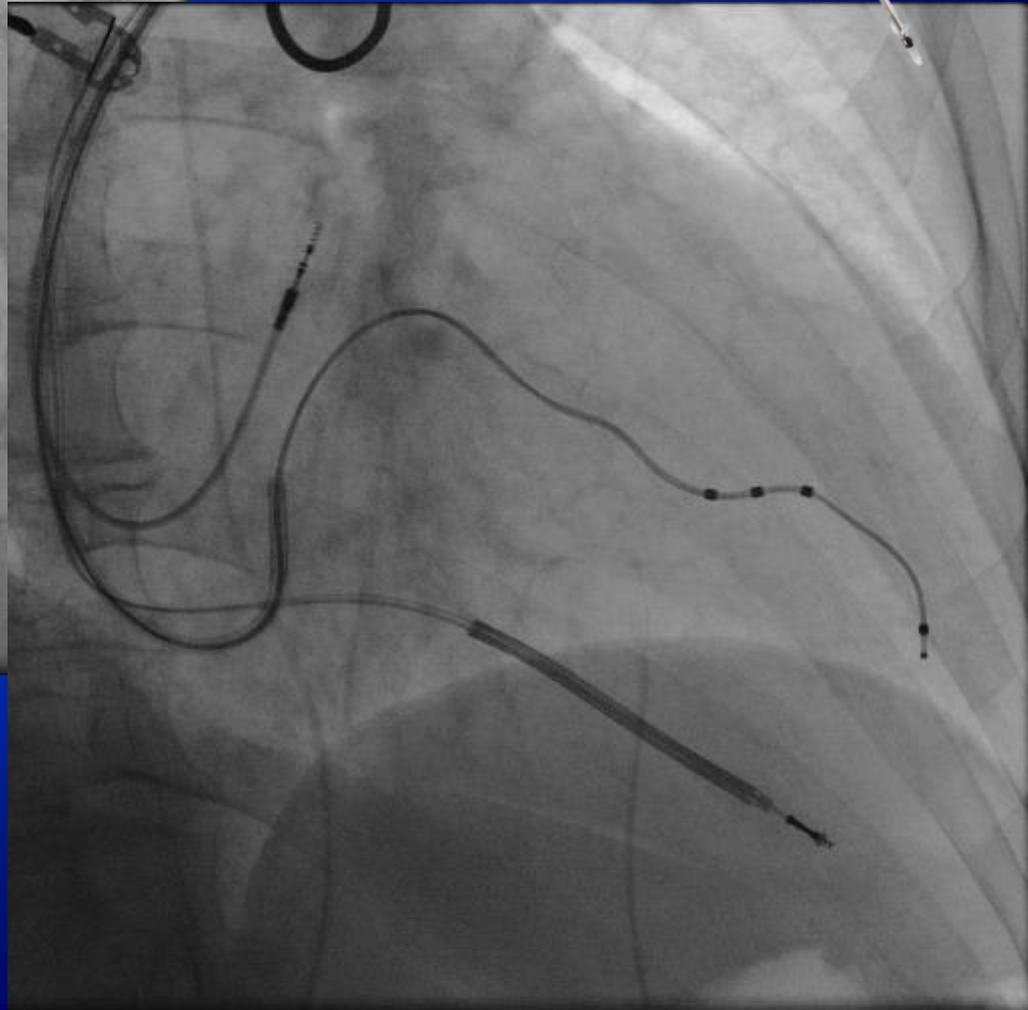
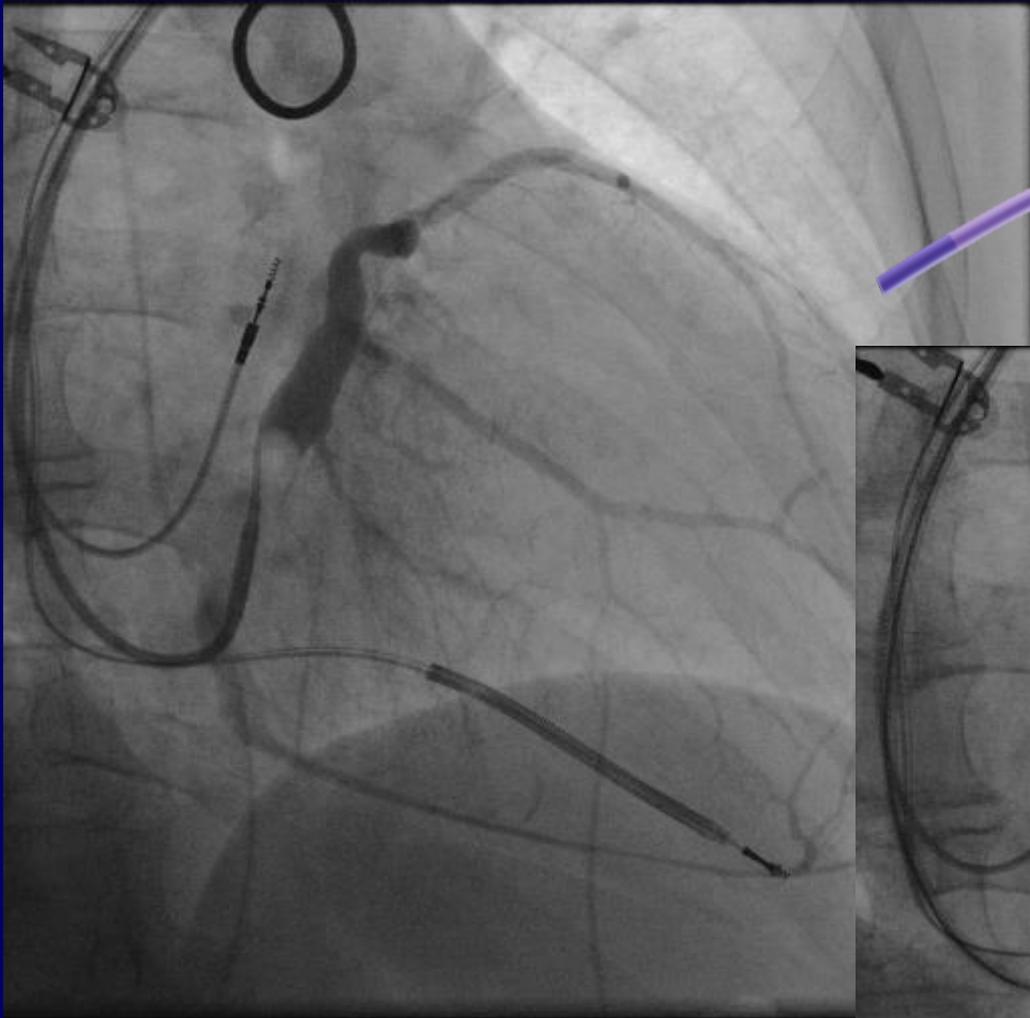
An Illustrated Guide

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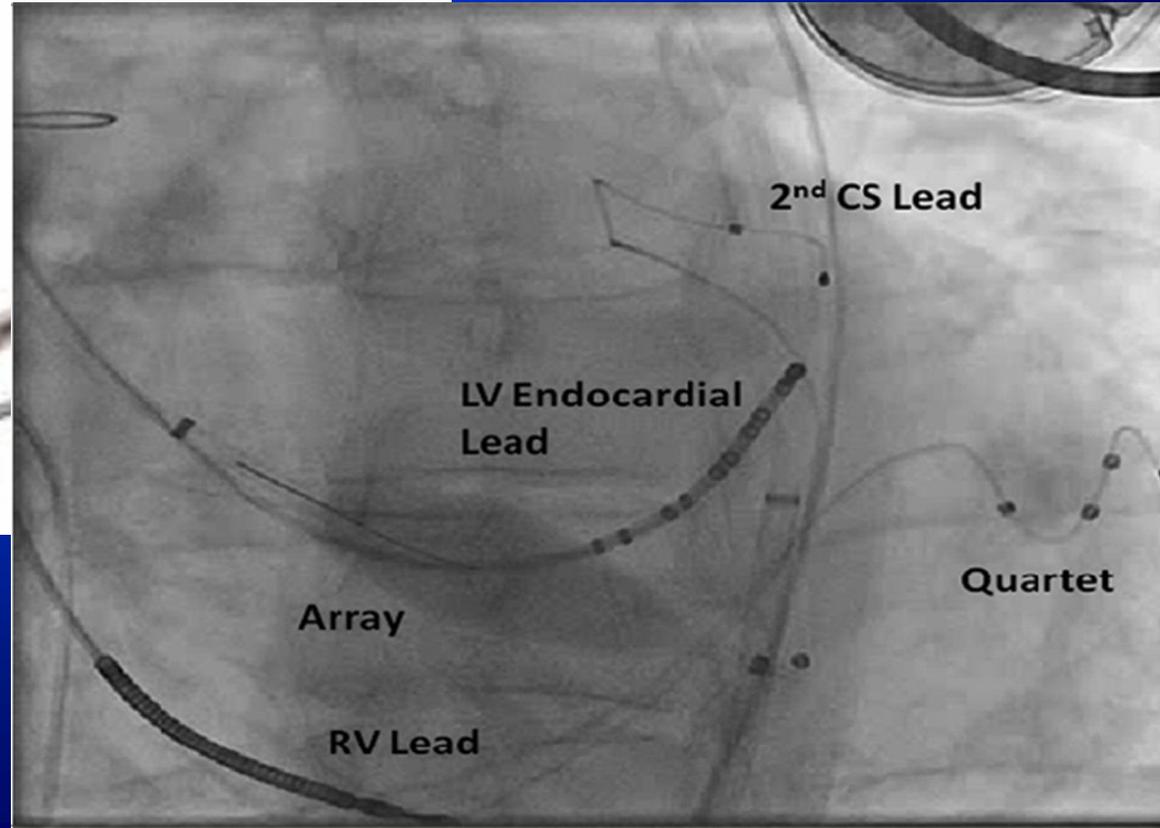


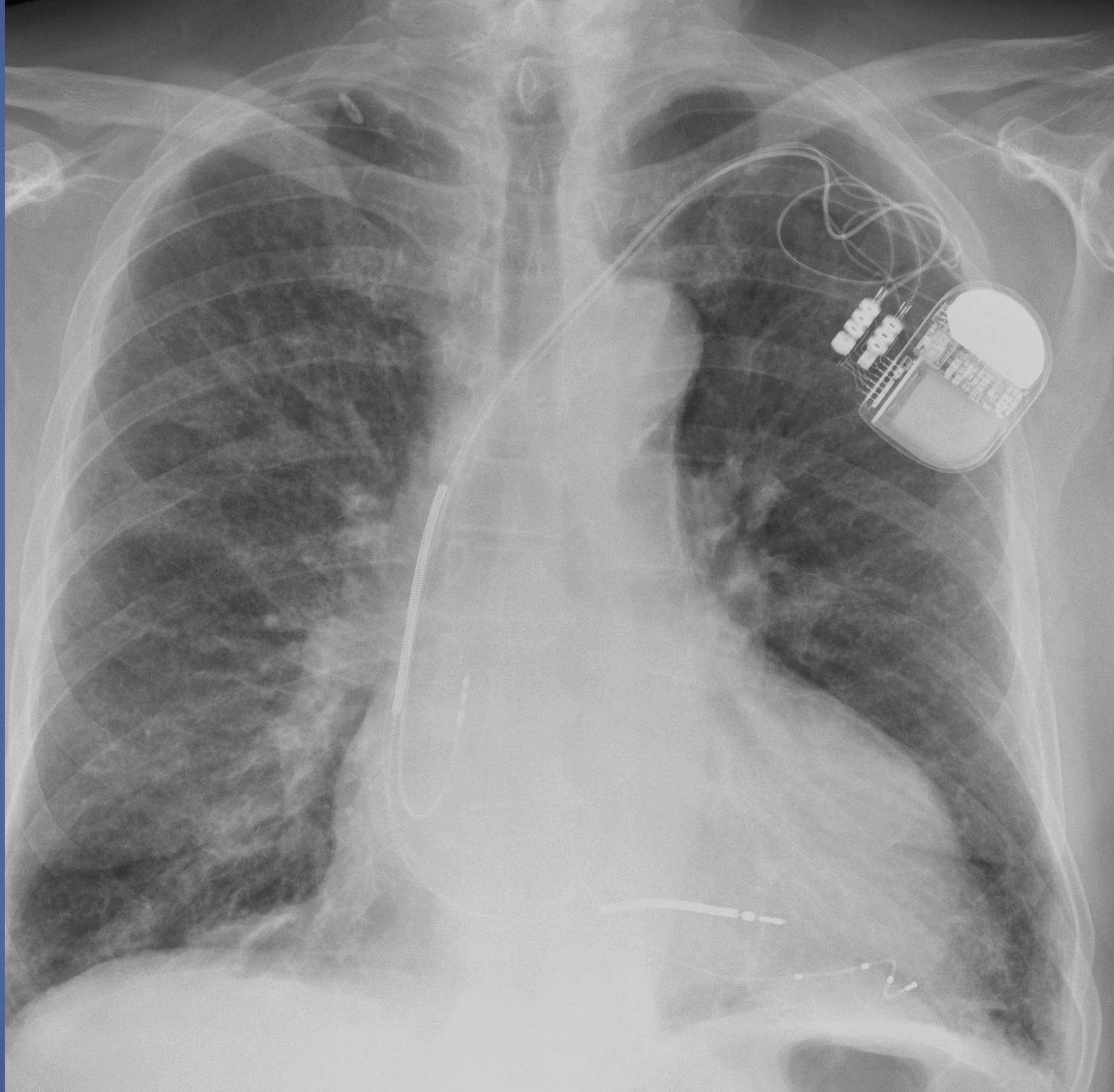


Vessel Wall



Myocardium







CX



« CRT-P vs CRT-D ... soit quand prescrire une Rolls-Royce ou une Bentley ? »

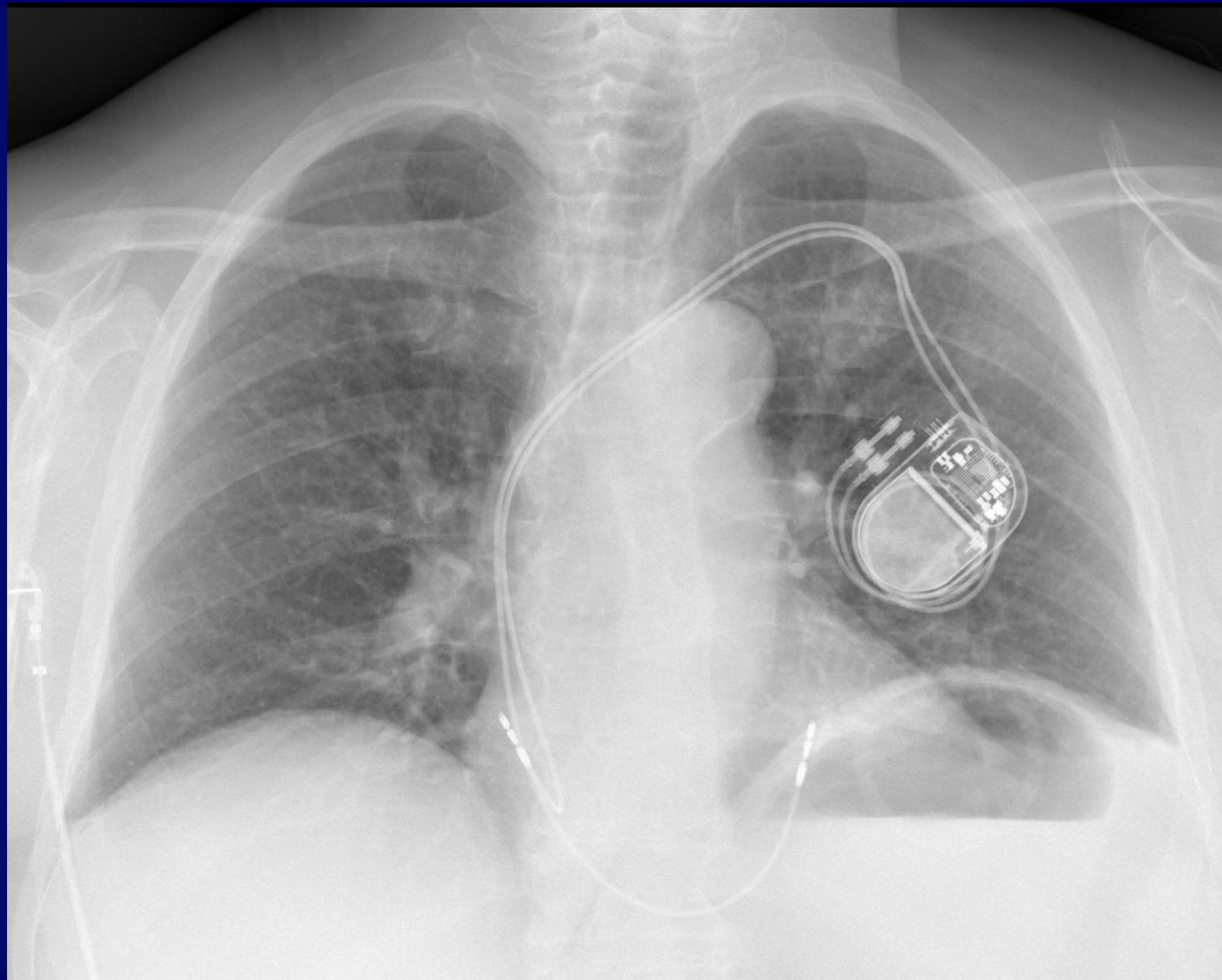


CRT-P
4.400 €

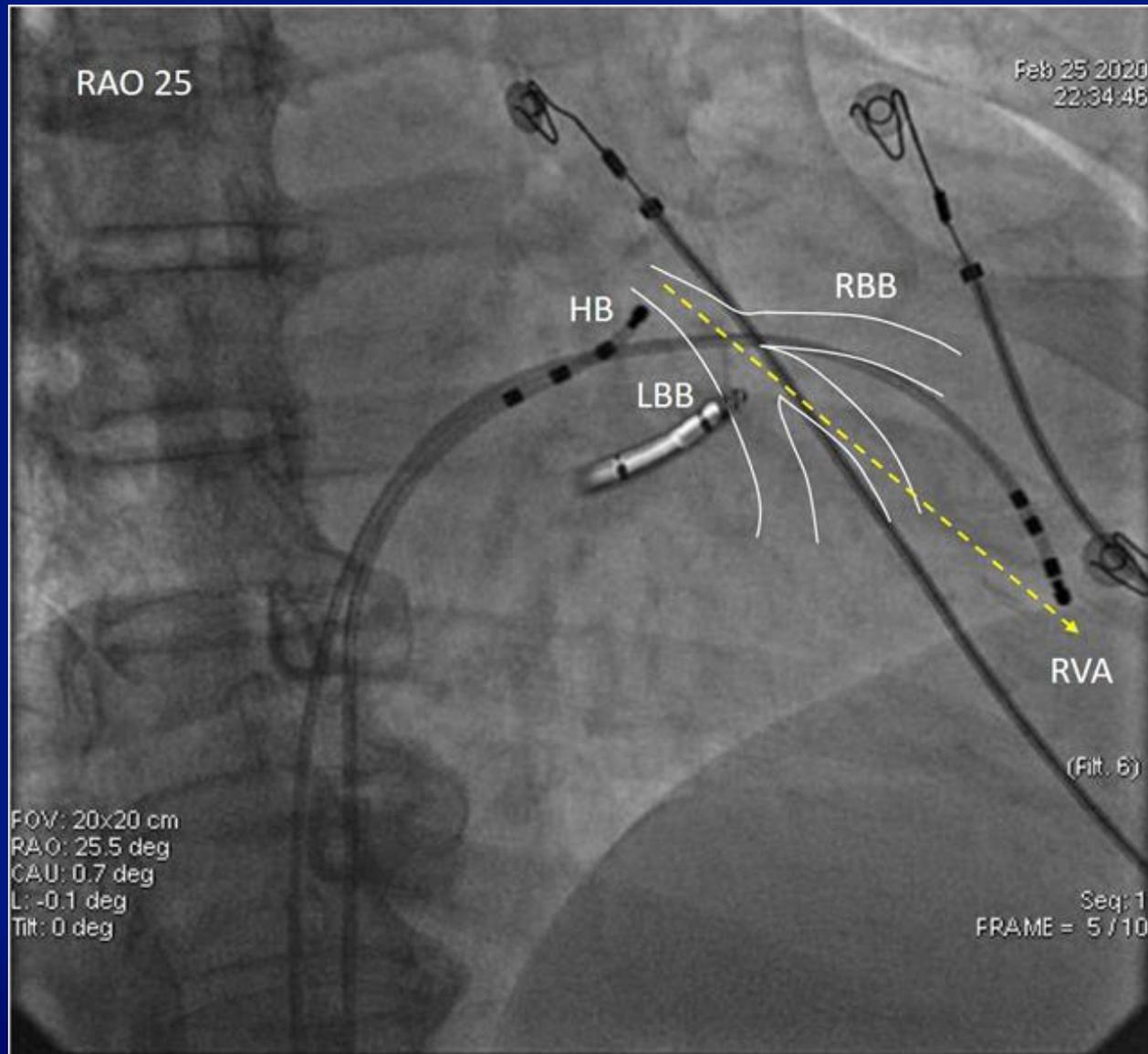


CRT-D
16.500 €





Stimulation LBB = plus physiologique



CHERCHEZ

LE GRAND JEU DE LA

SAISON
2

PETITE DIFFERENCE

L'ERREUR!

ÉMISSION
TELEMAQUE



Cherchez L'erreur

Episode 1

CHERCHEZ

LE GRAND JEU DE LA PETITE DIFFERENCE

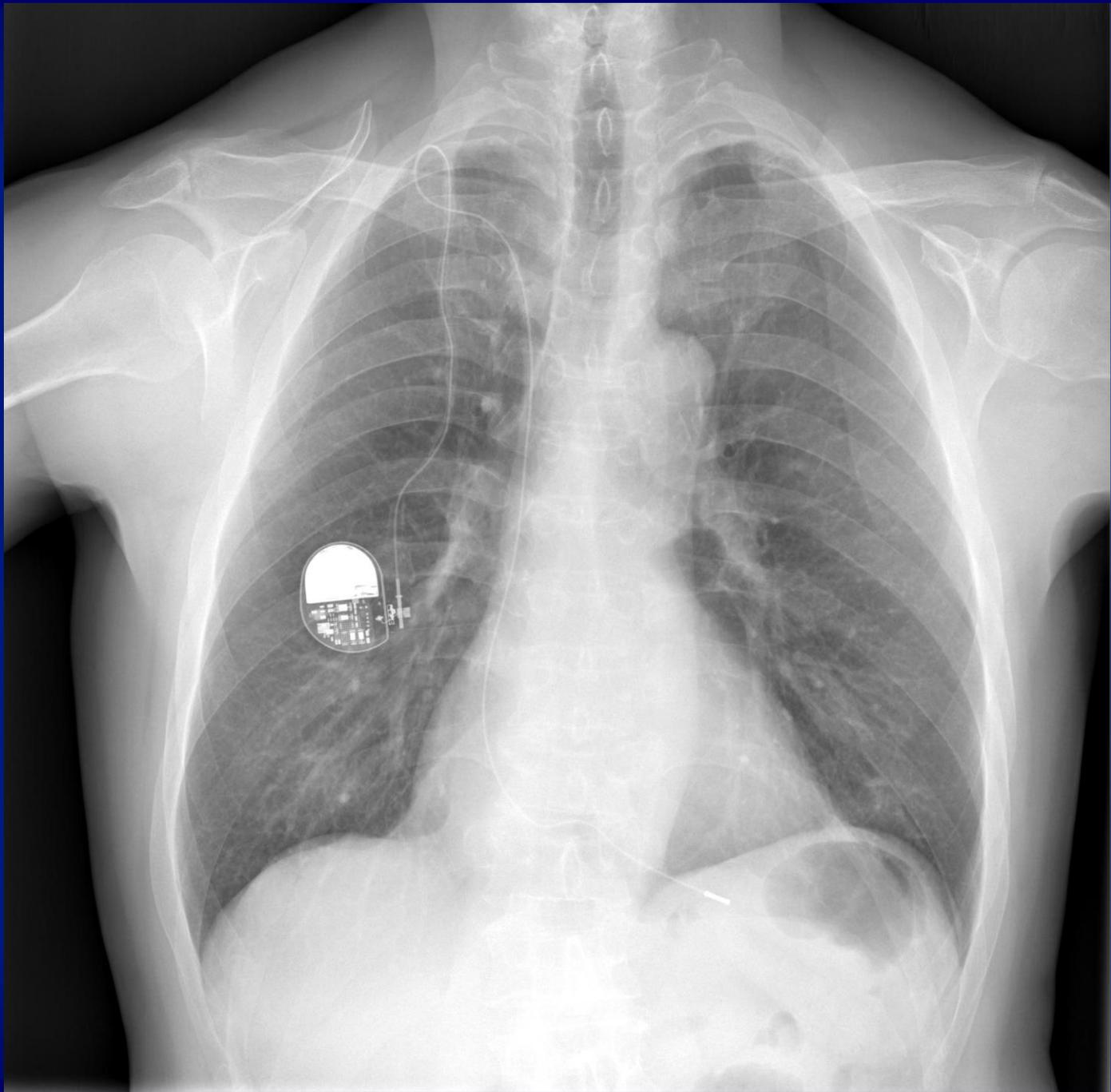
L'ERREUR!



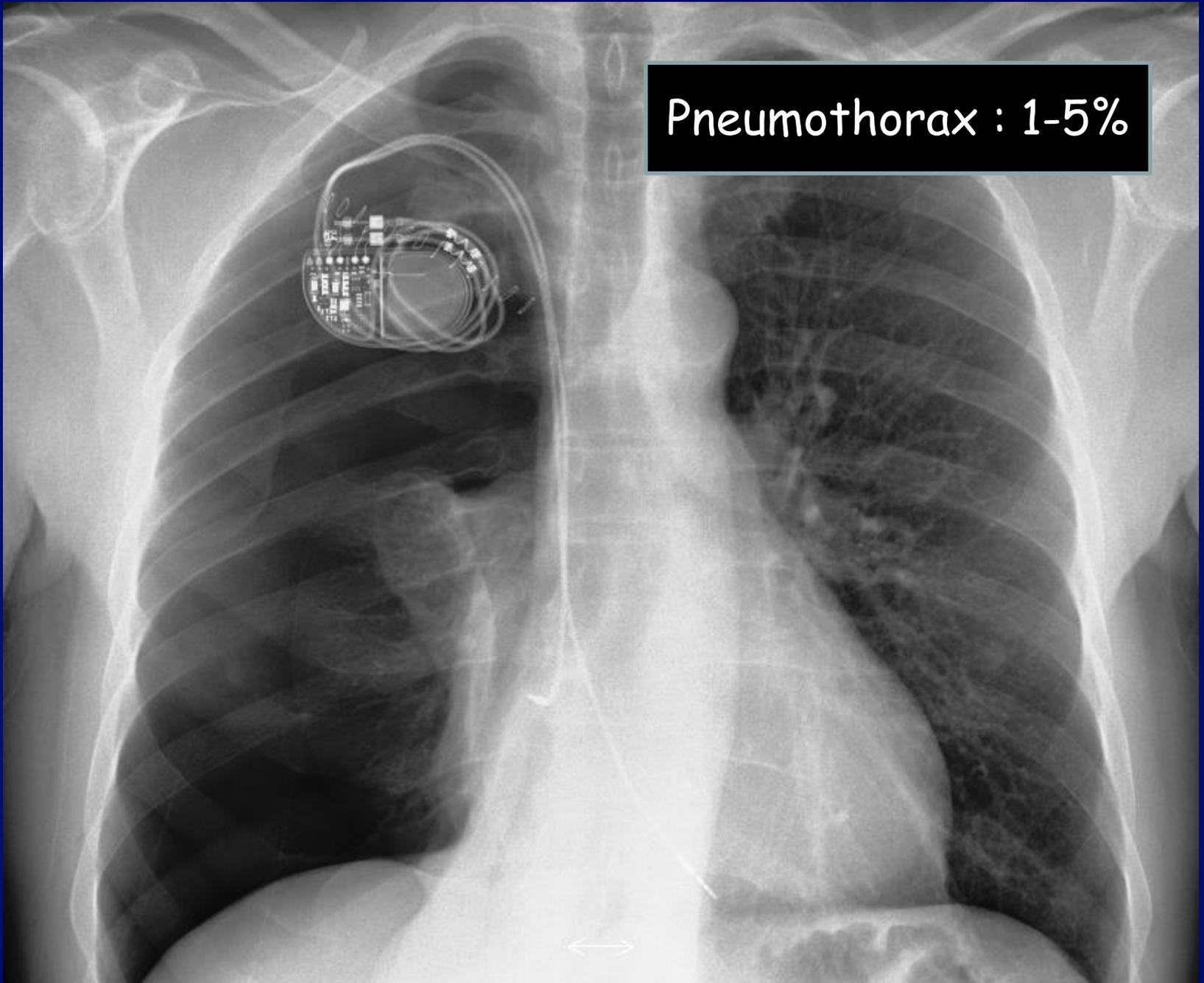


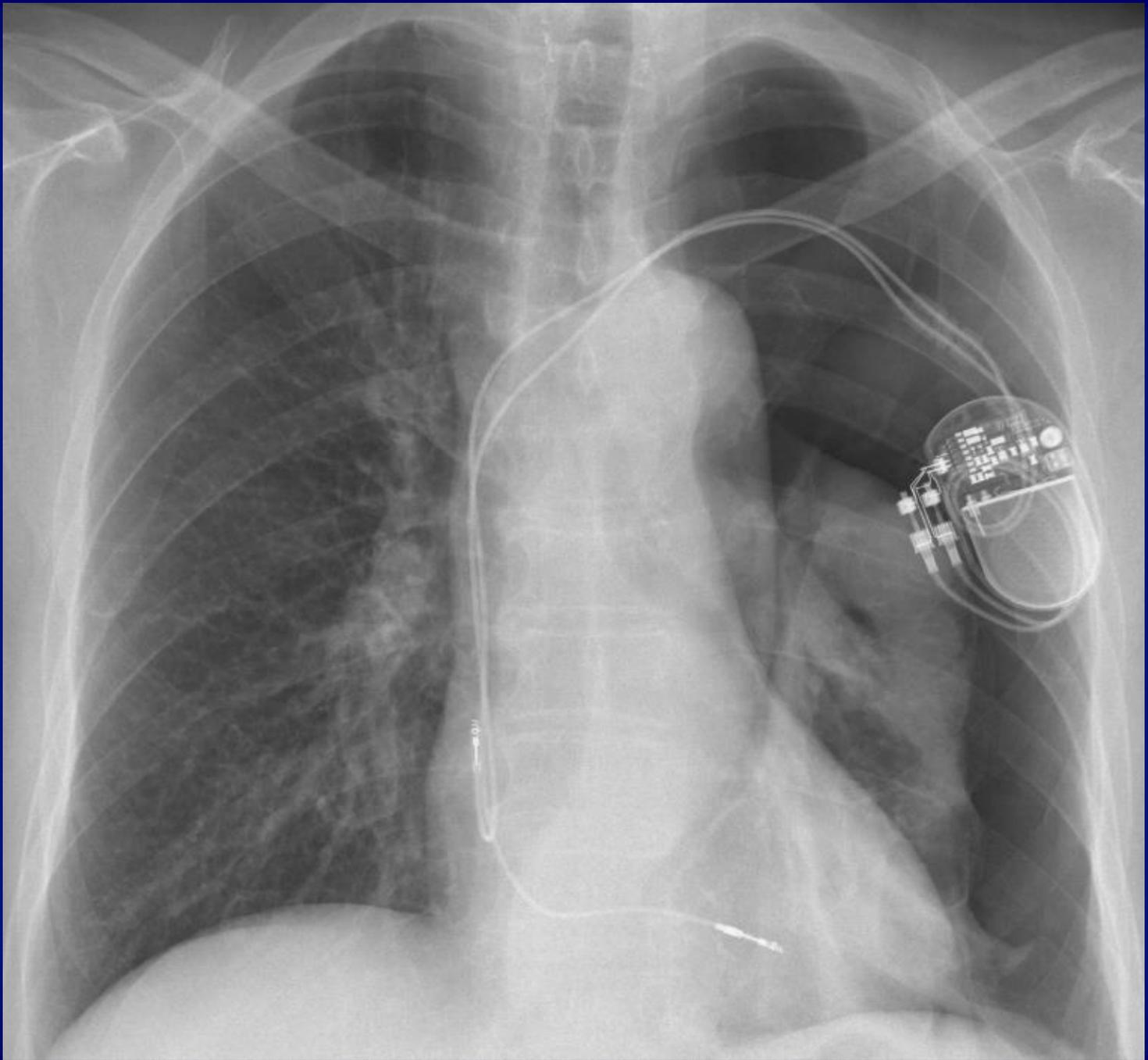
« Tout » se passe en salle d'EEP ou d'opération !!!



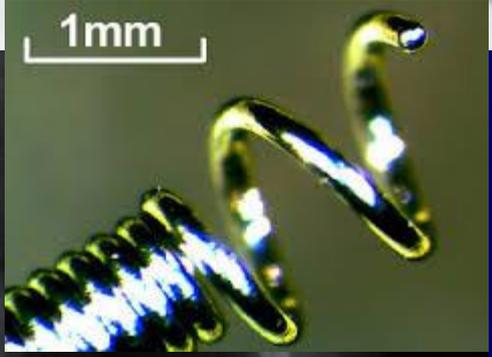
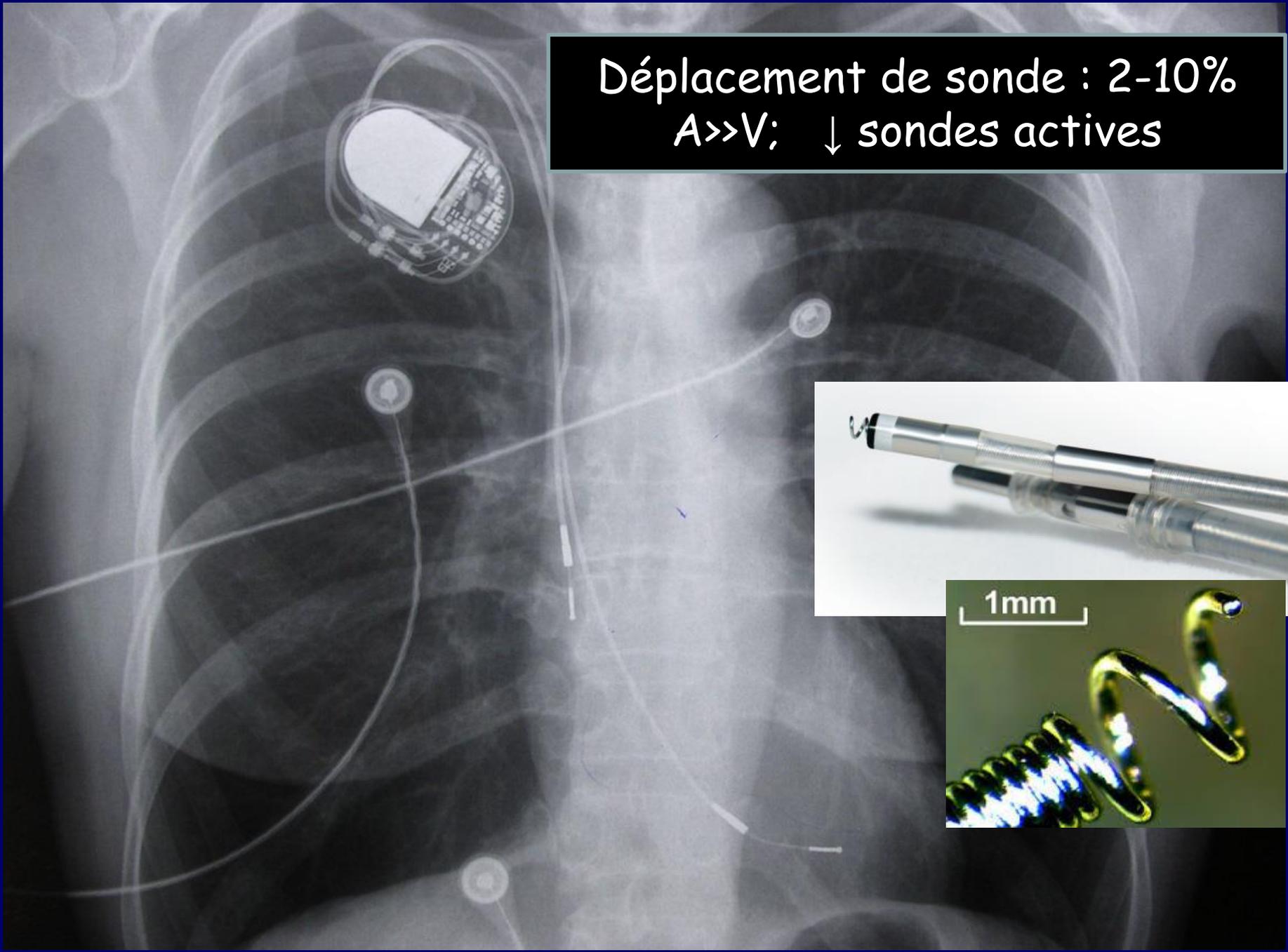


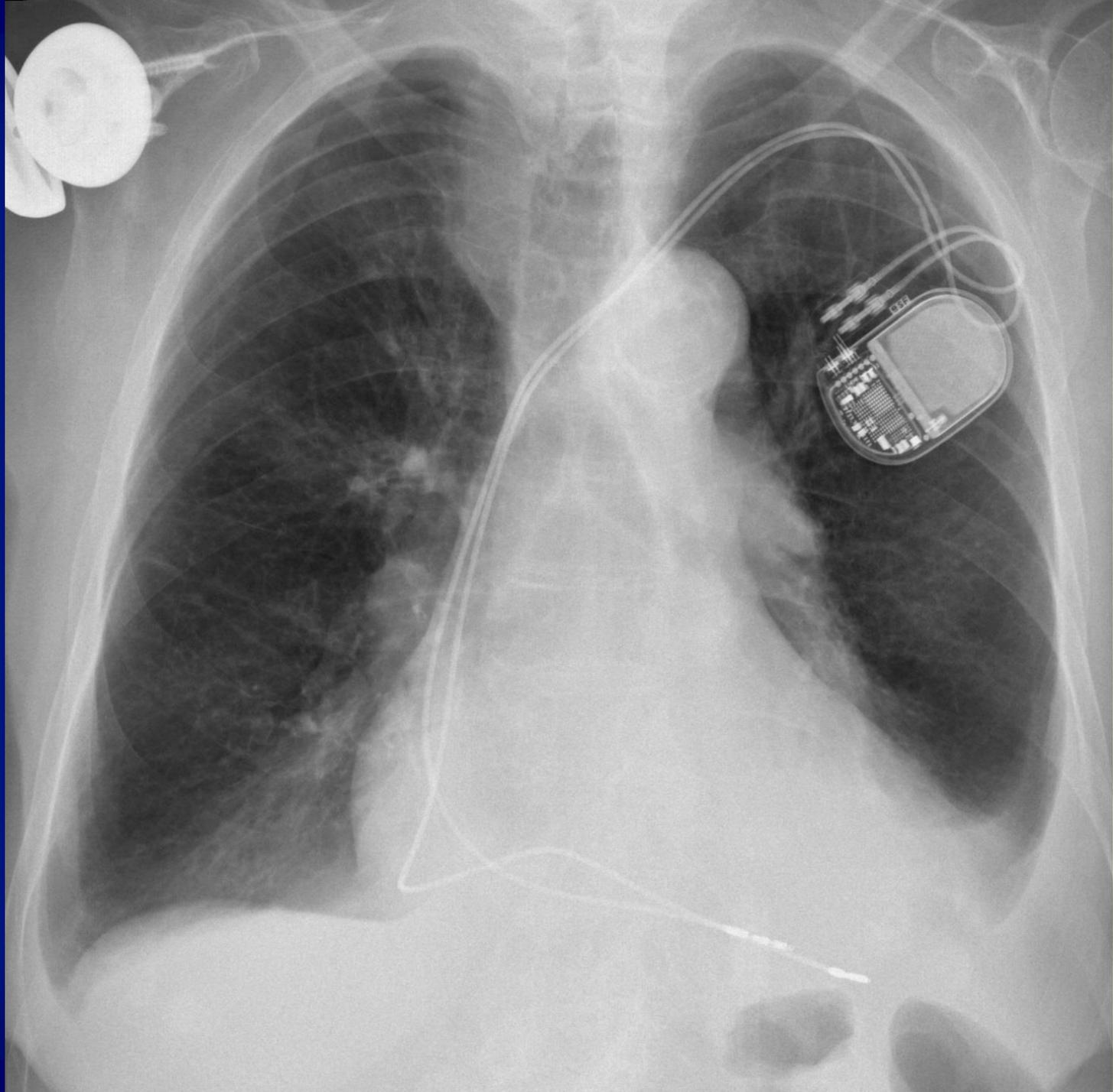
Pneumothorax : 1-5%

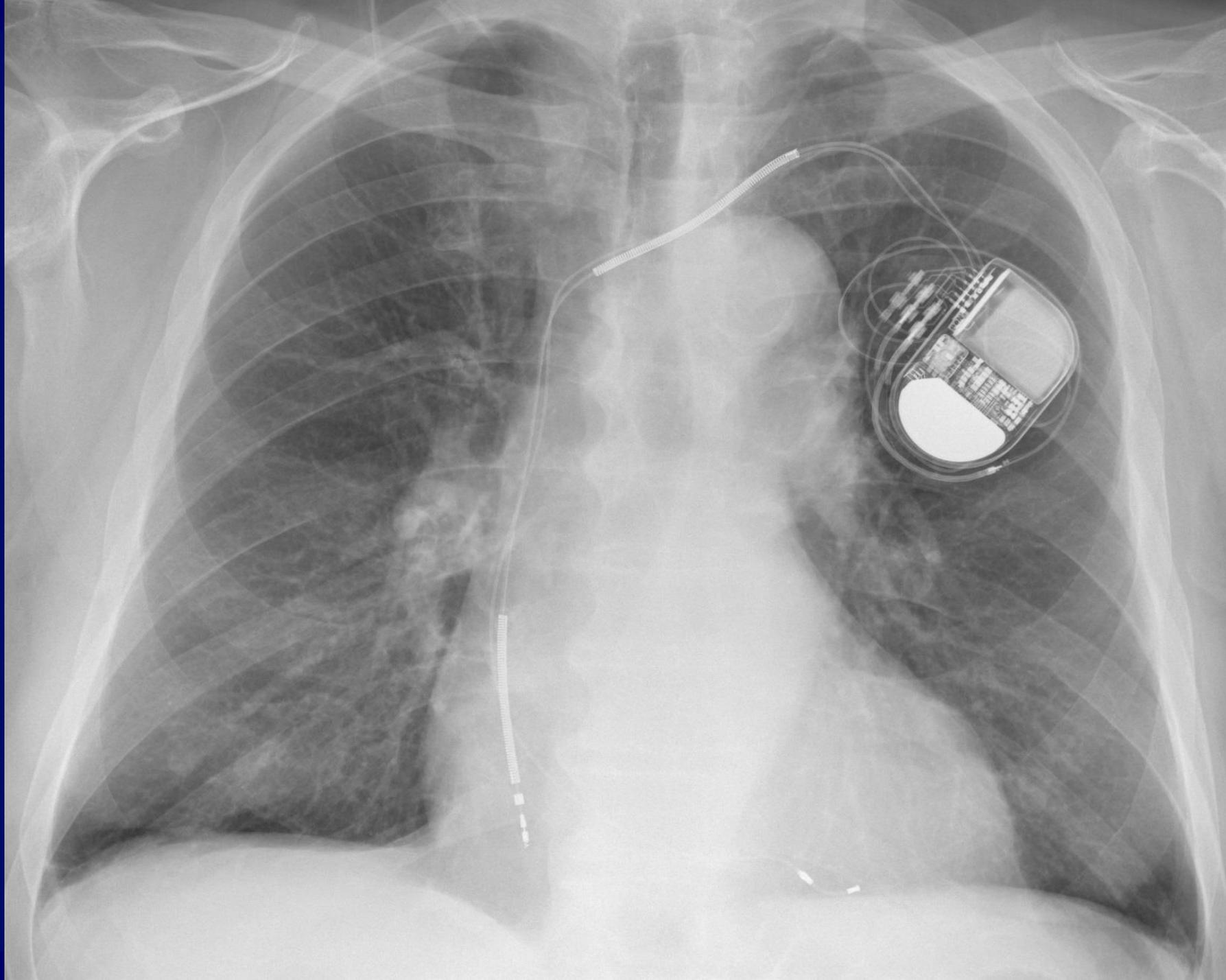




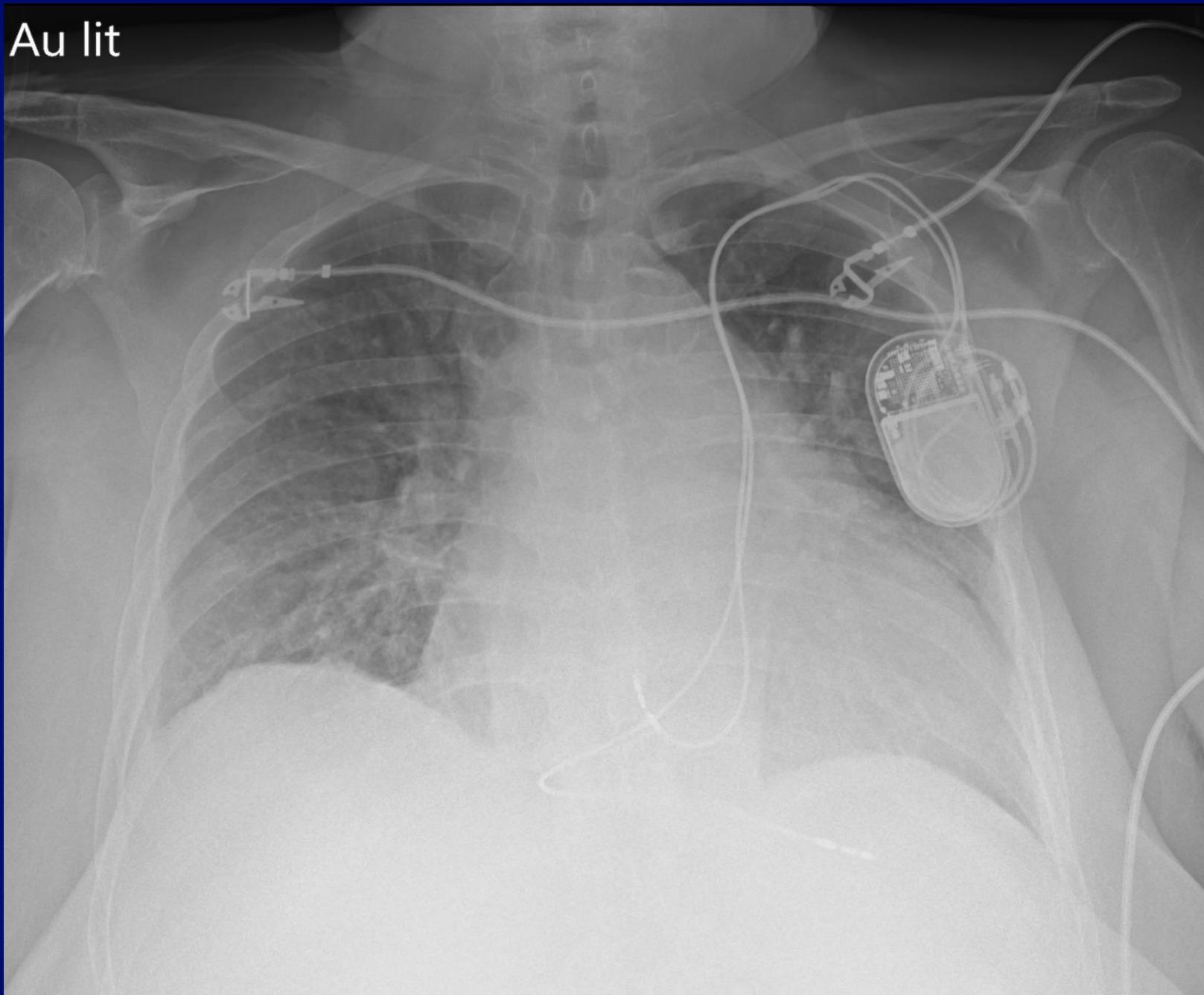
Déplacement de sonde : 2-10%
A>>V; ↓ sondes actives



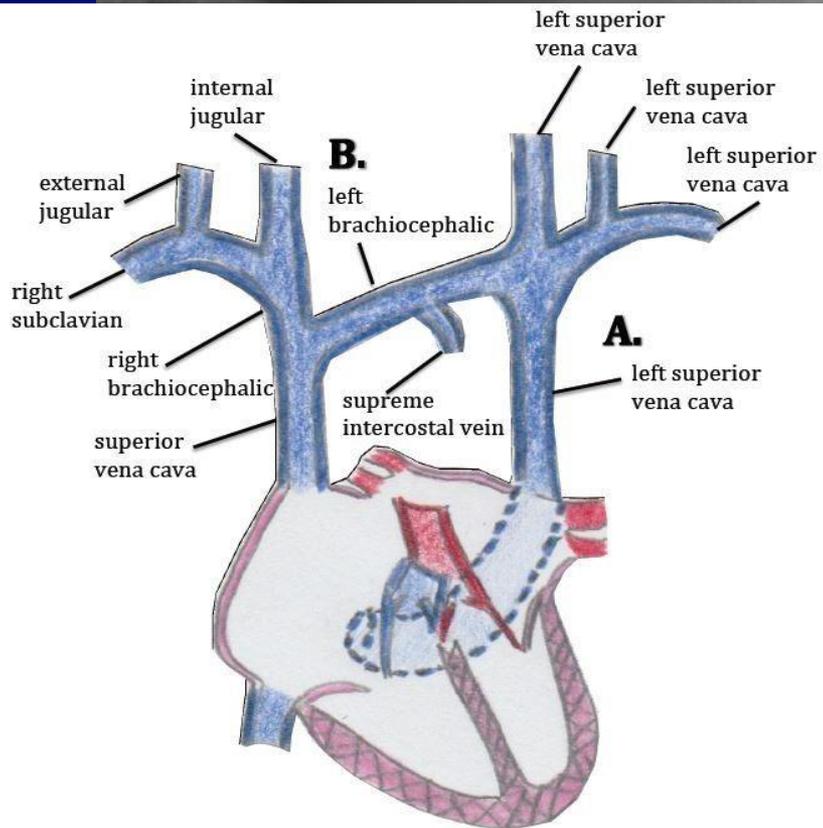




Au lit

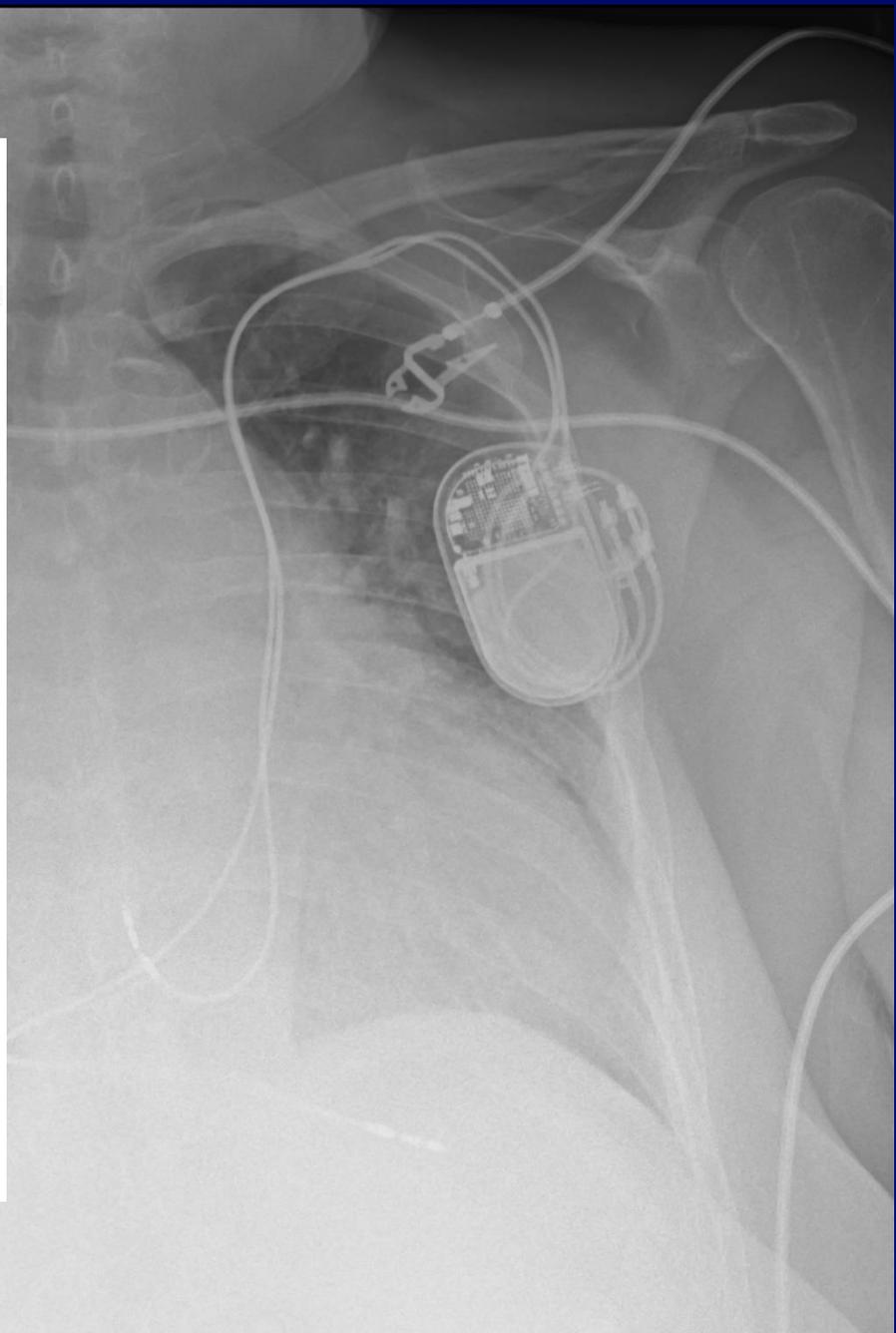


Au lit



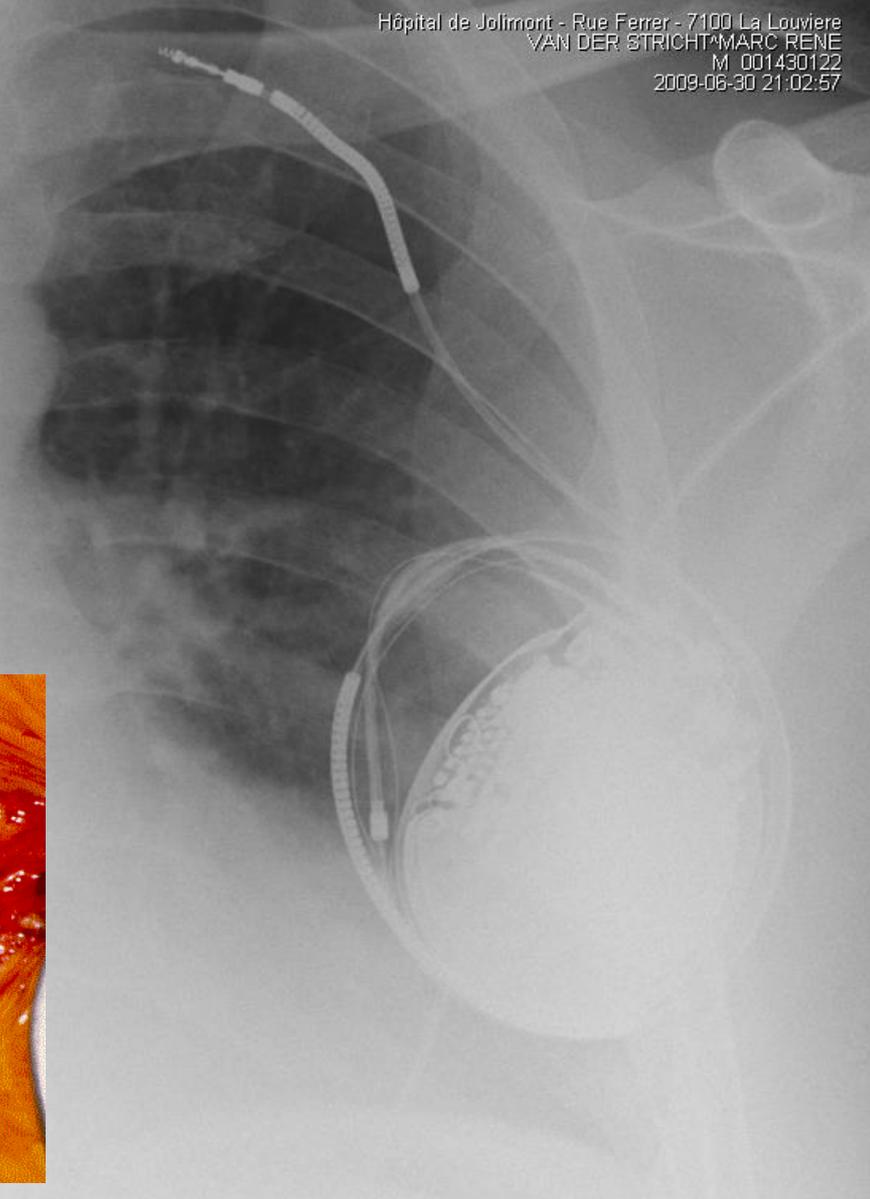
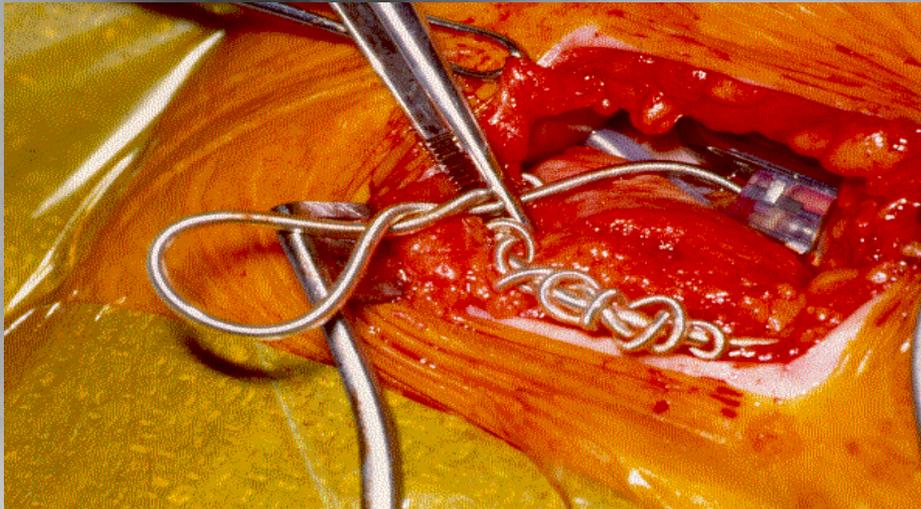
A. A common congenital variation is a persistent left-sided vena cava.

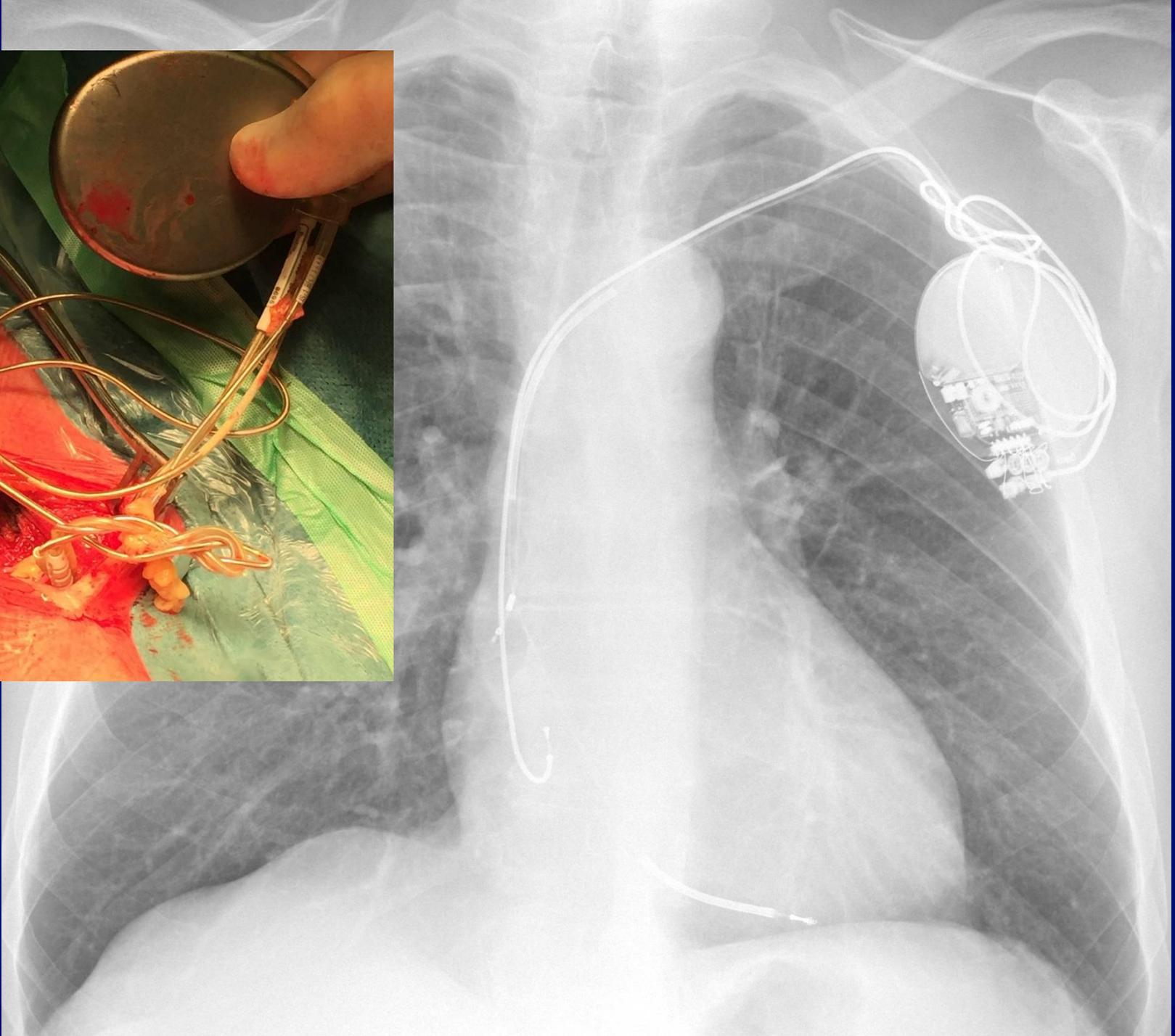
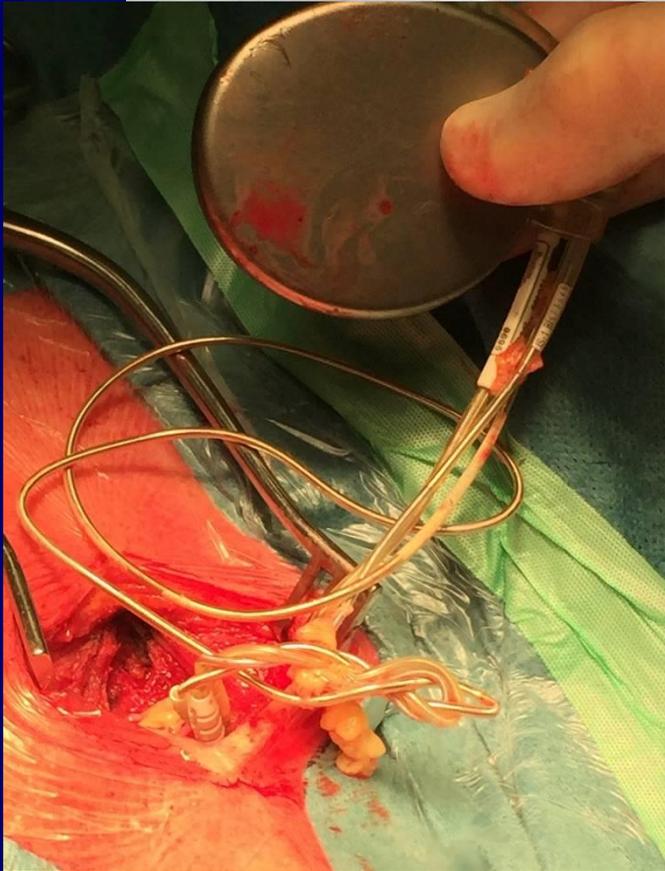
B. Malpositioning is more common if cannulation is attempted via the left side of the neck or thorax due to the long left brachiocephalic vessel, the more oblique course, and the presence of small tributaries.



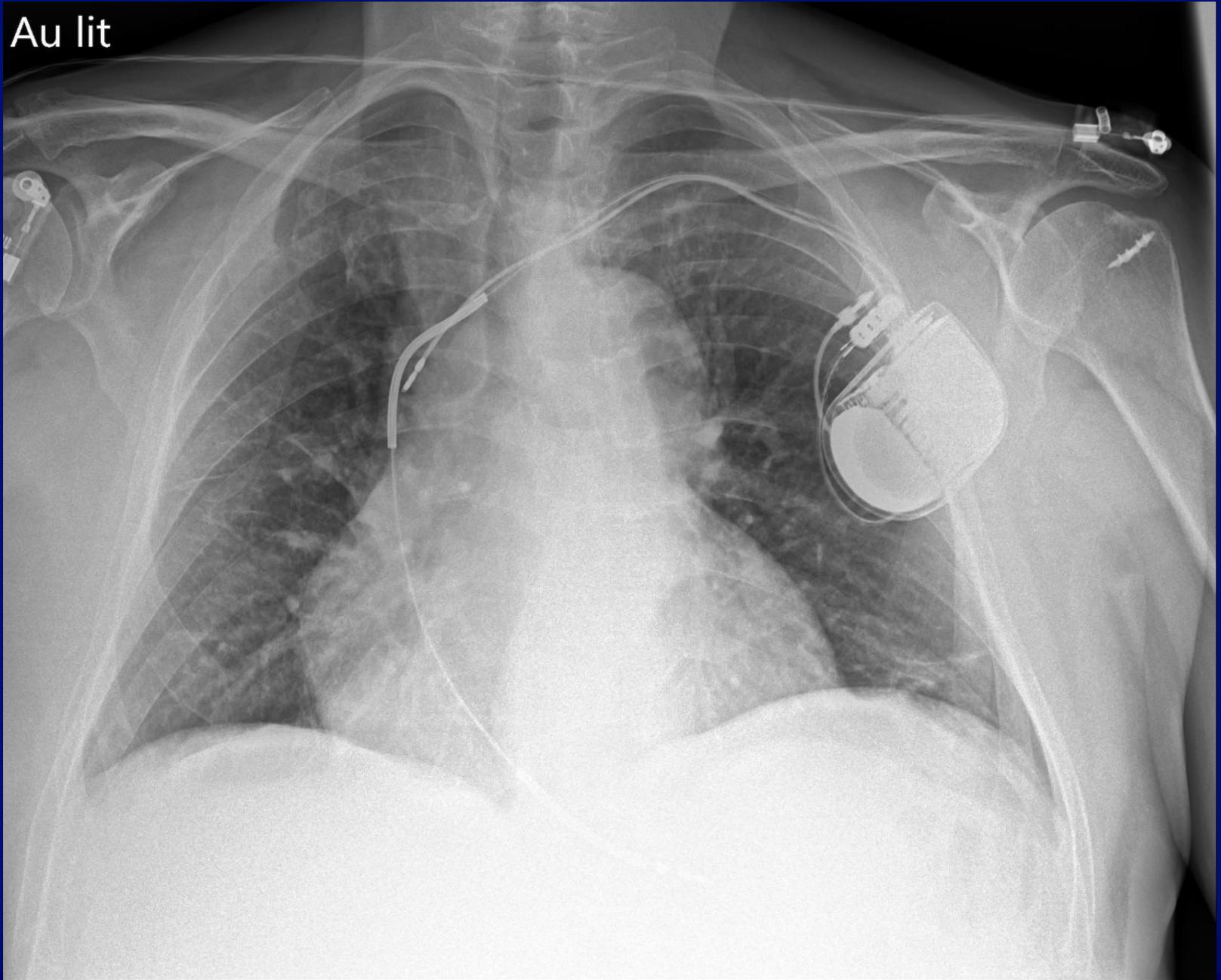
Twiddler syndrome

Hôpital de Jolimont - Rue Ferrer - 7100 La Louvière
VAN DER STRICHT*
MARC RENE
M 001430122
2009-06-30 21:02:57

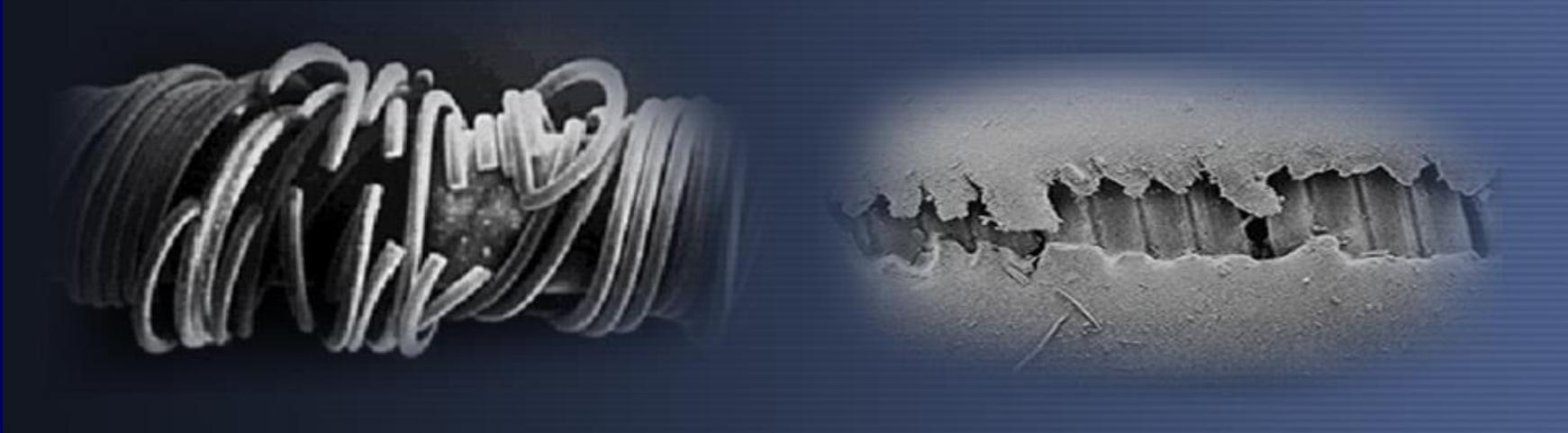
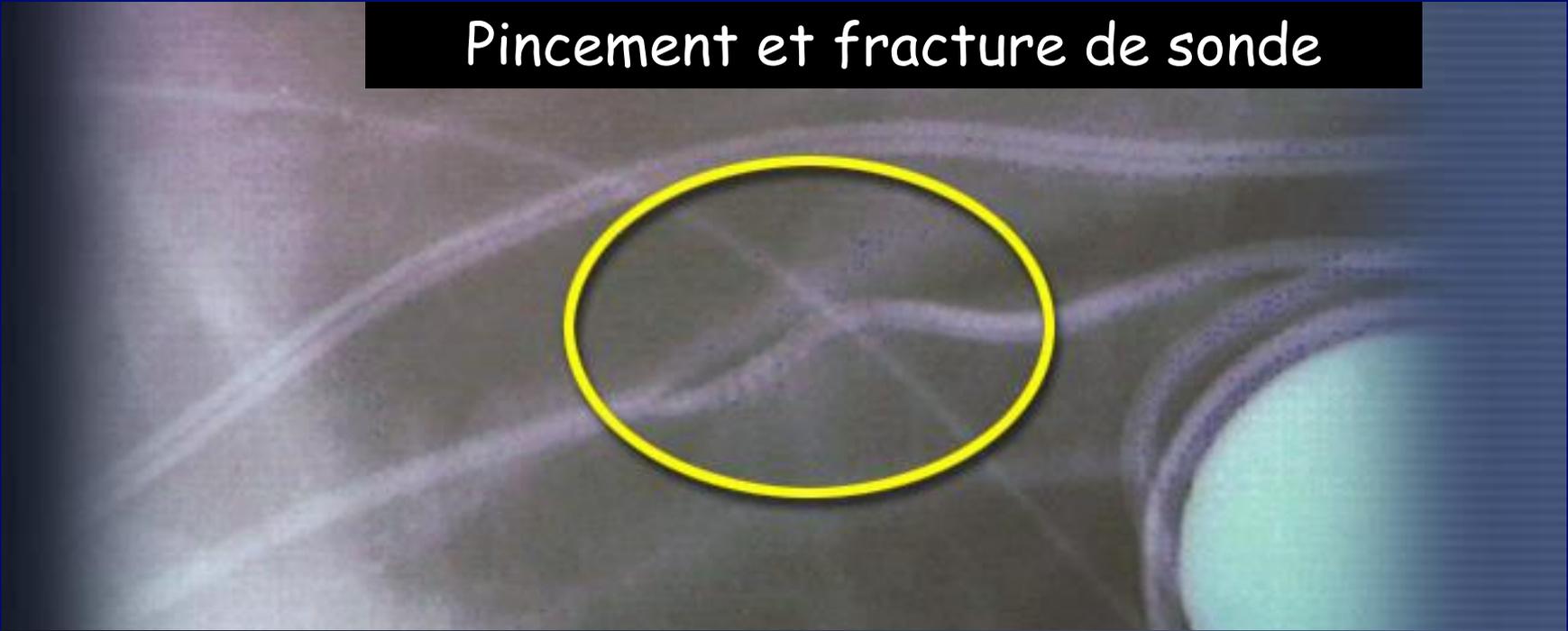




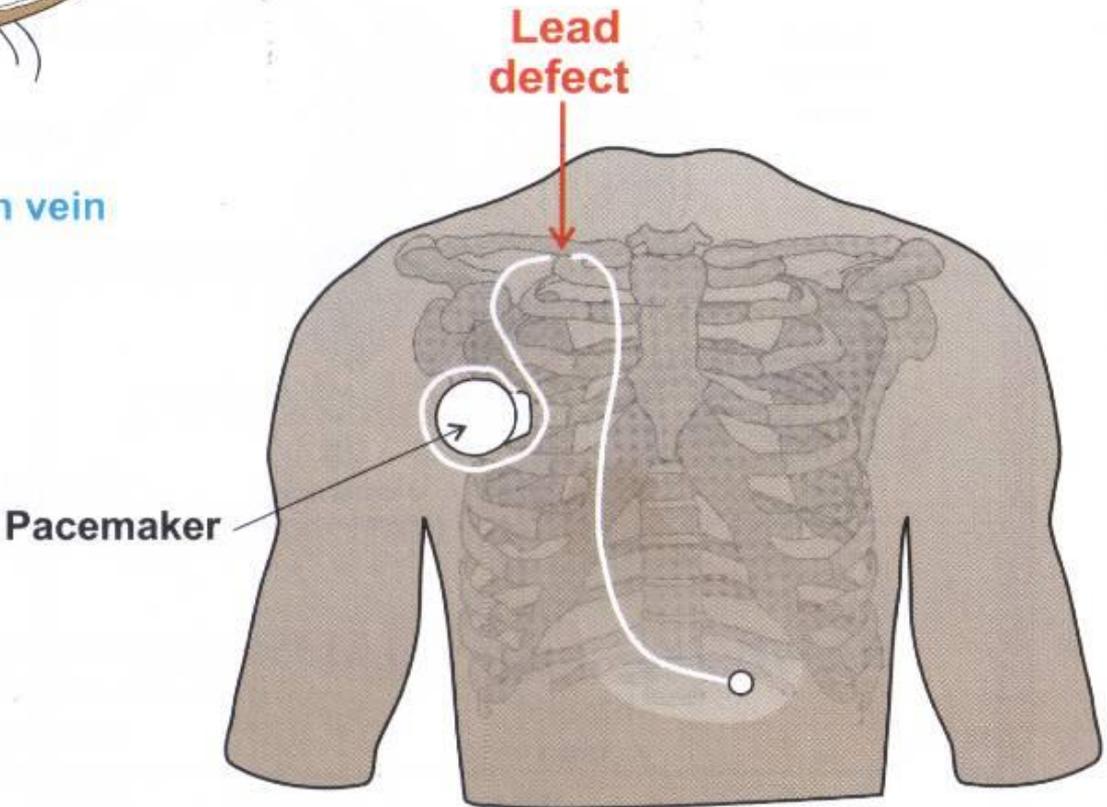
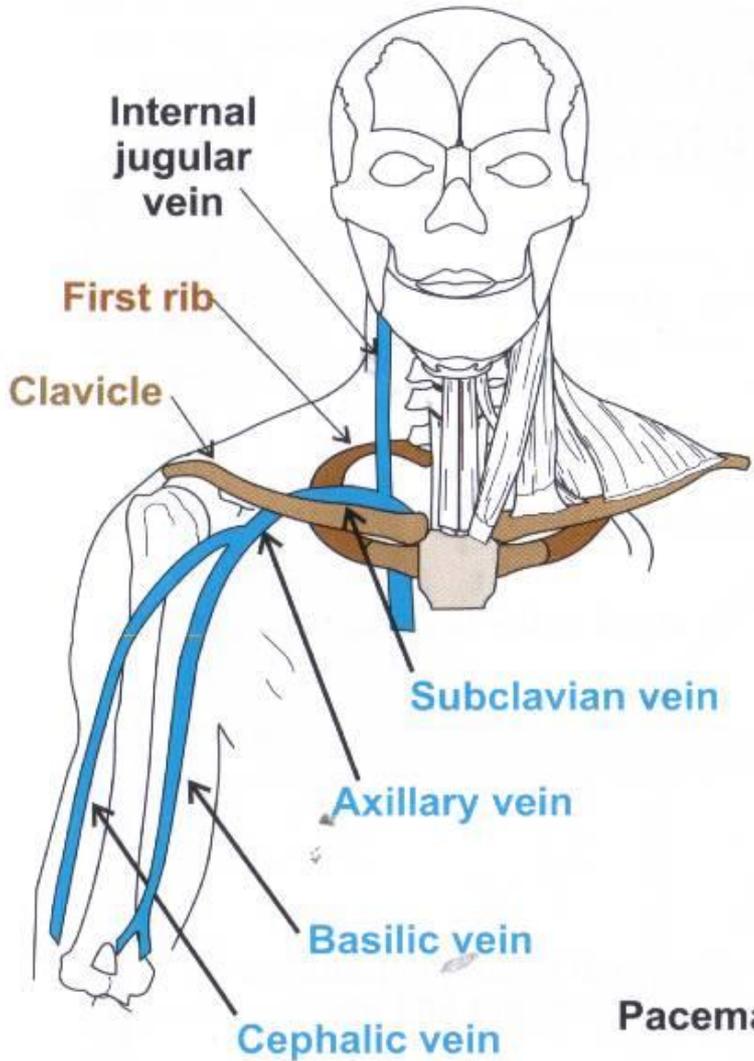
Au lit

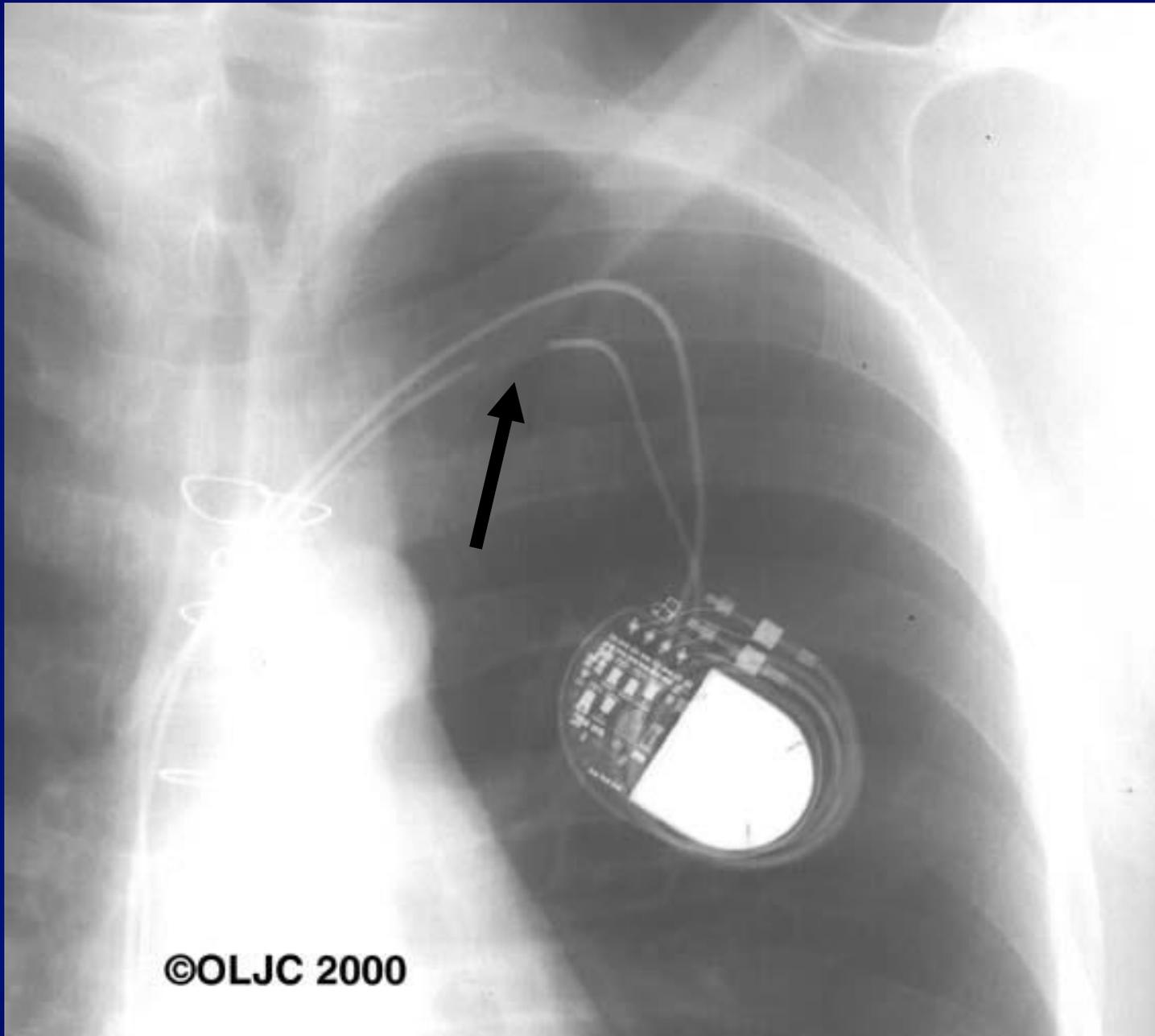


Pincement et fracture de sonde

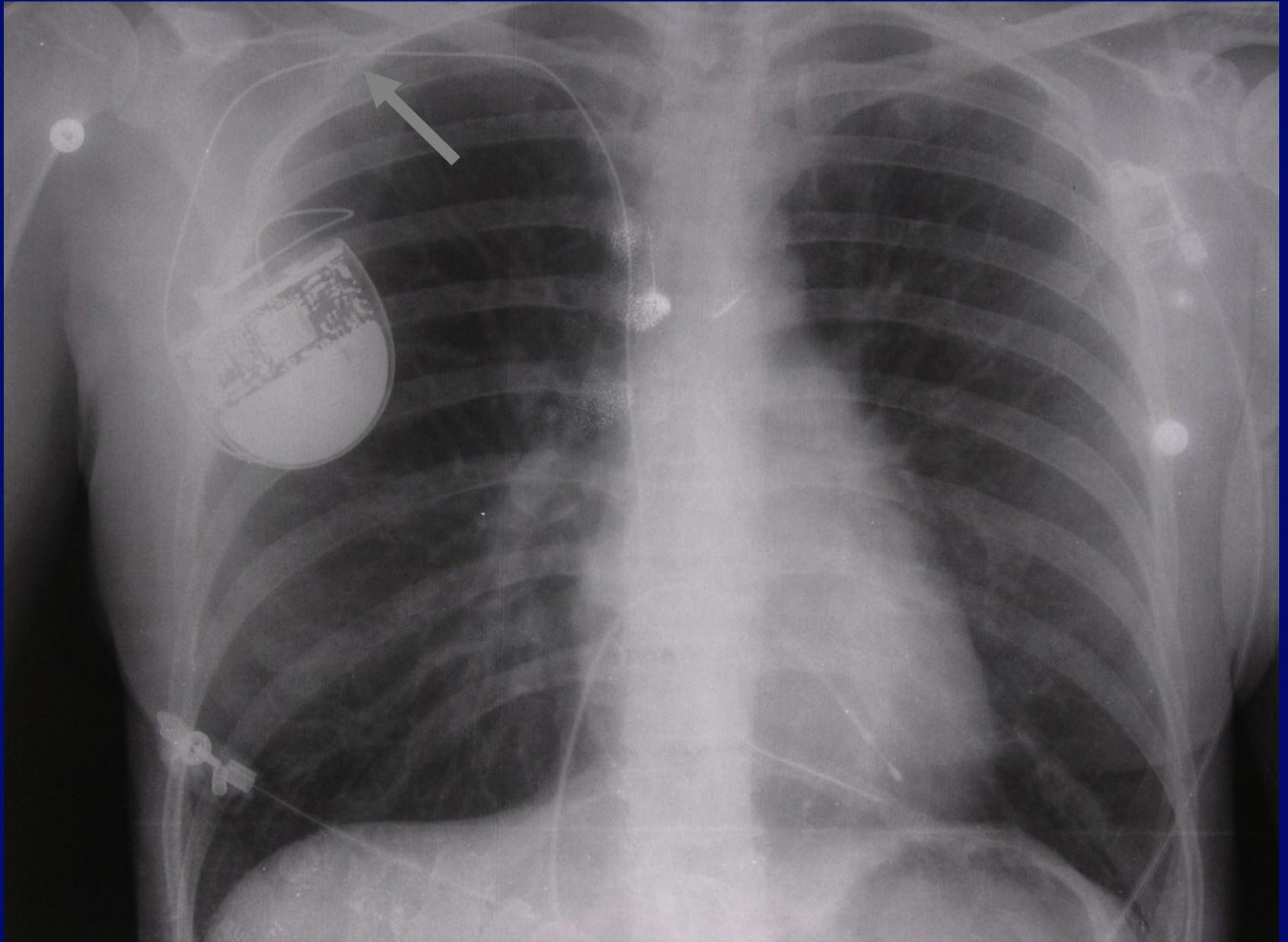


SUBCLAVIAN CRUSH SYNDROME



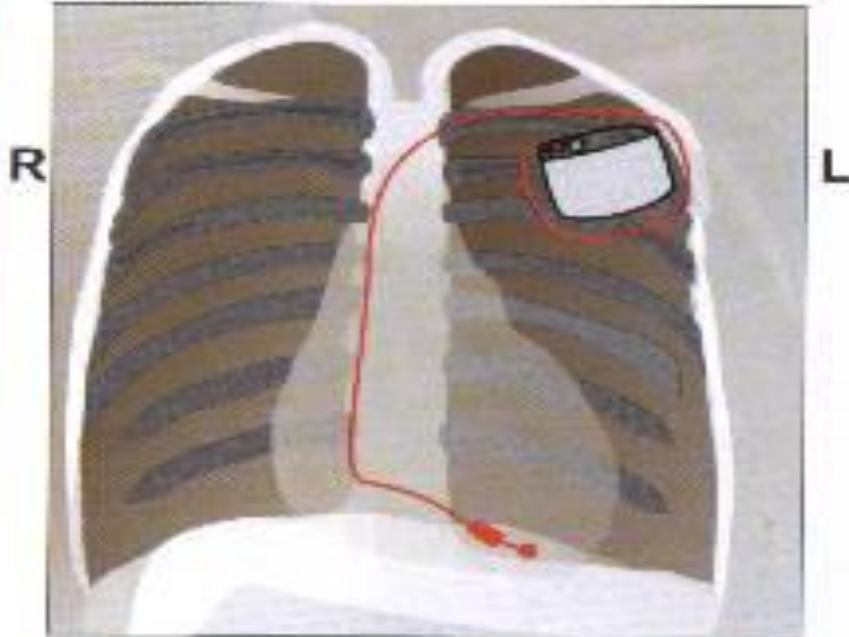


©OLJC 2000



RX thorax – Placement des sondes

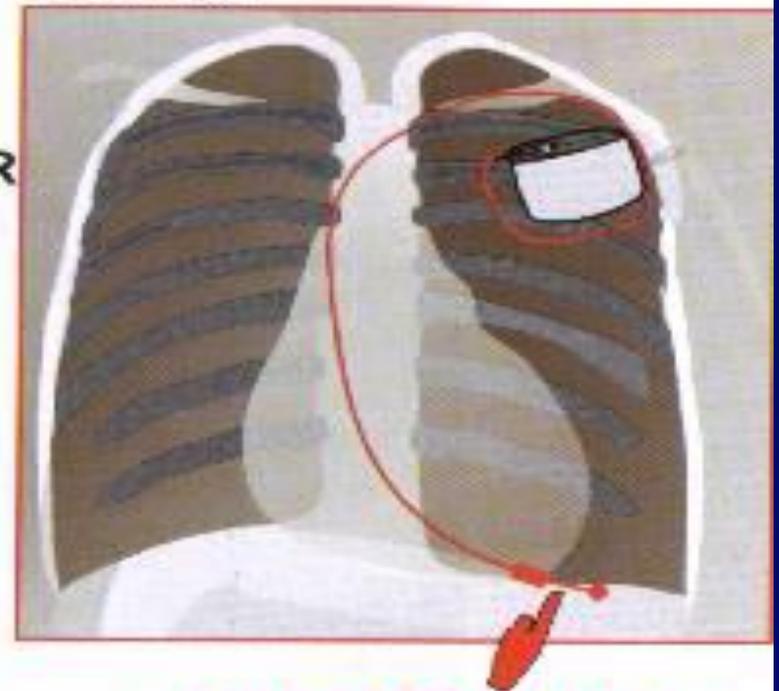
FRONTAL



The RV lead may plunge below the diaphragmatic shadow. This is normal and may not be interpreted as perforation without other findings !!!

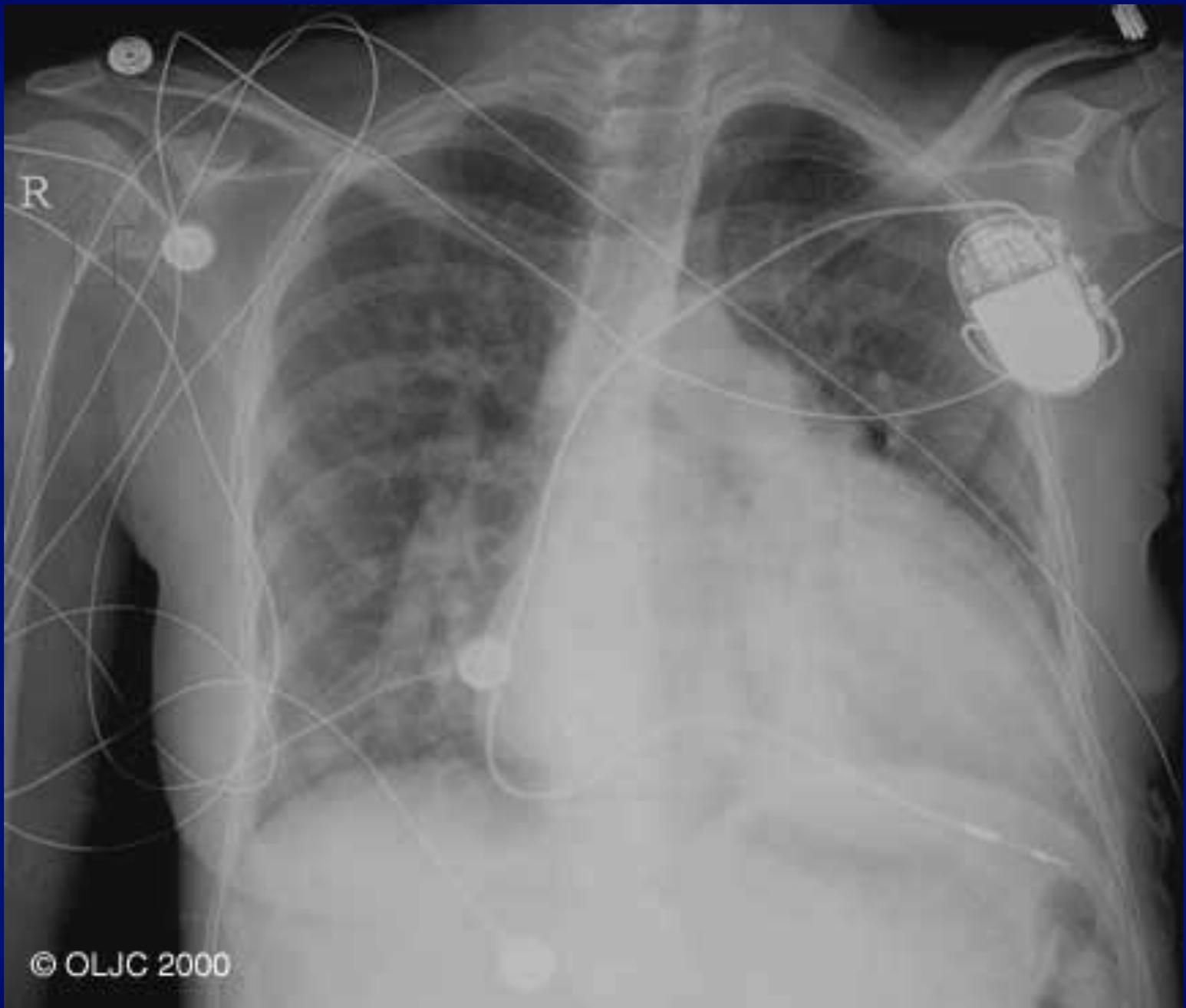
A. F. Finnaave

FRONTAL

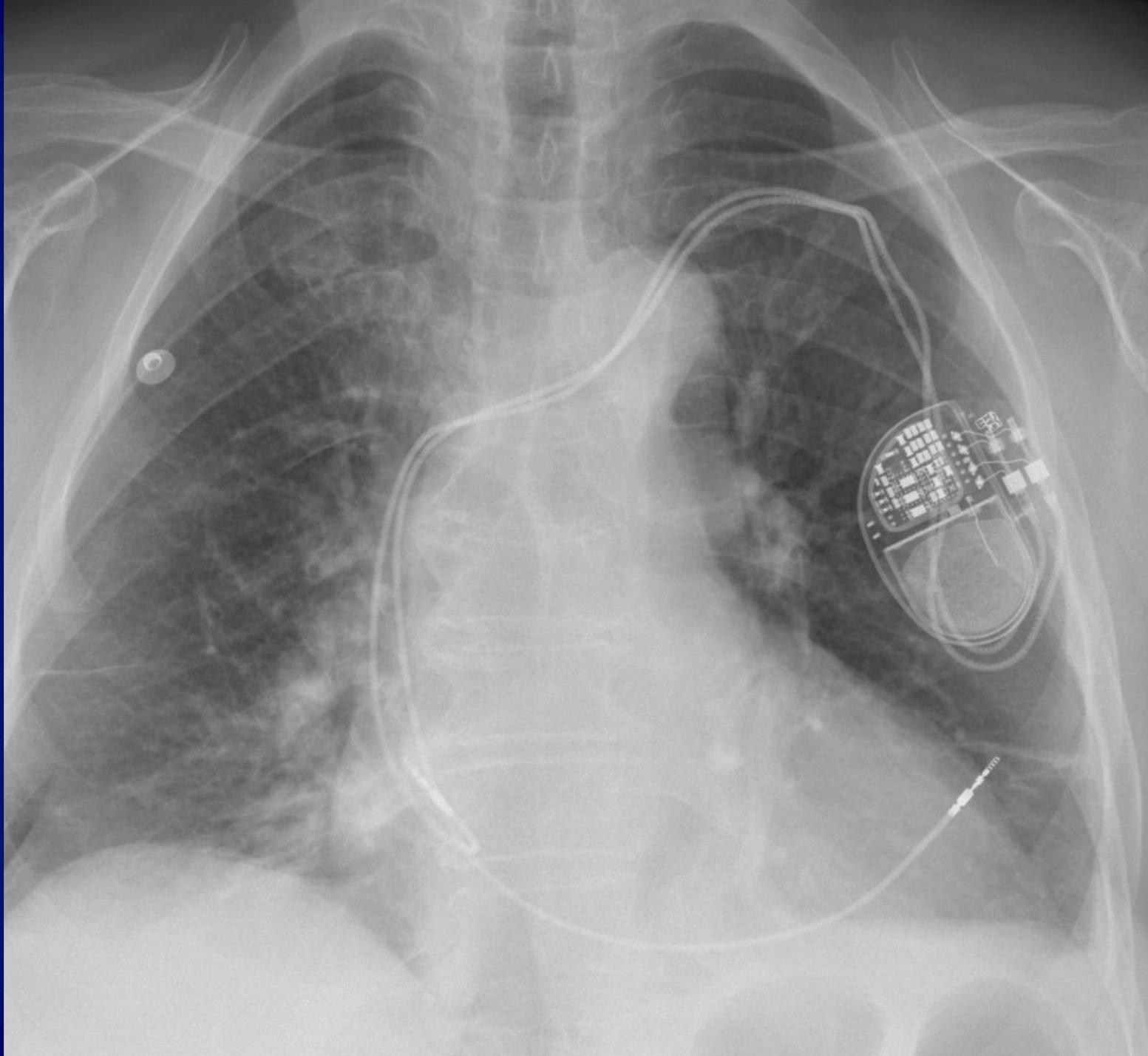


PERFORATION !

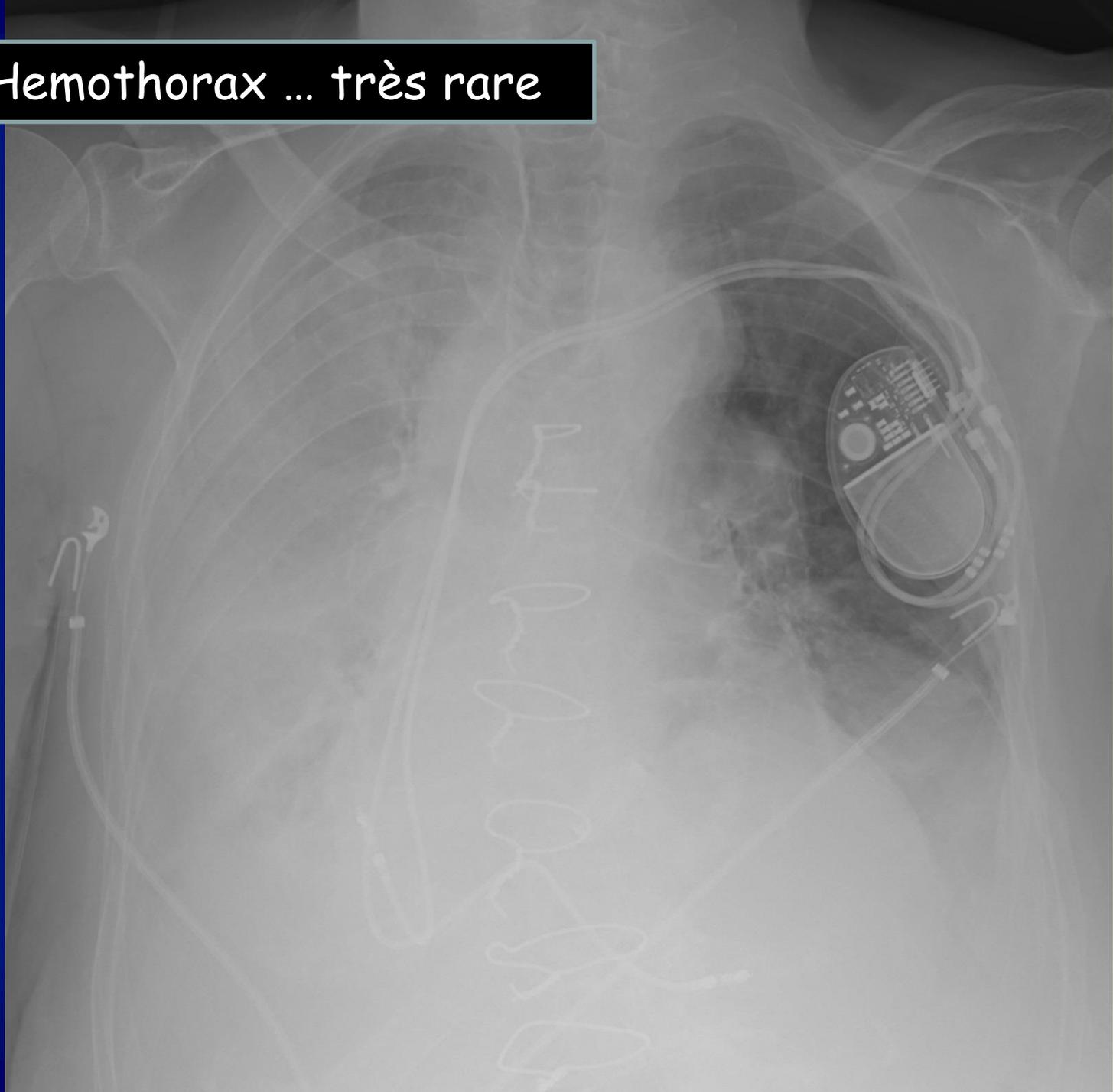
The lead is clearly beyond the cardiac shadow !

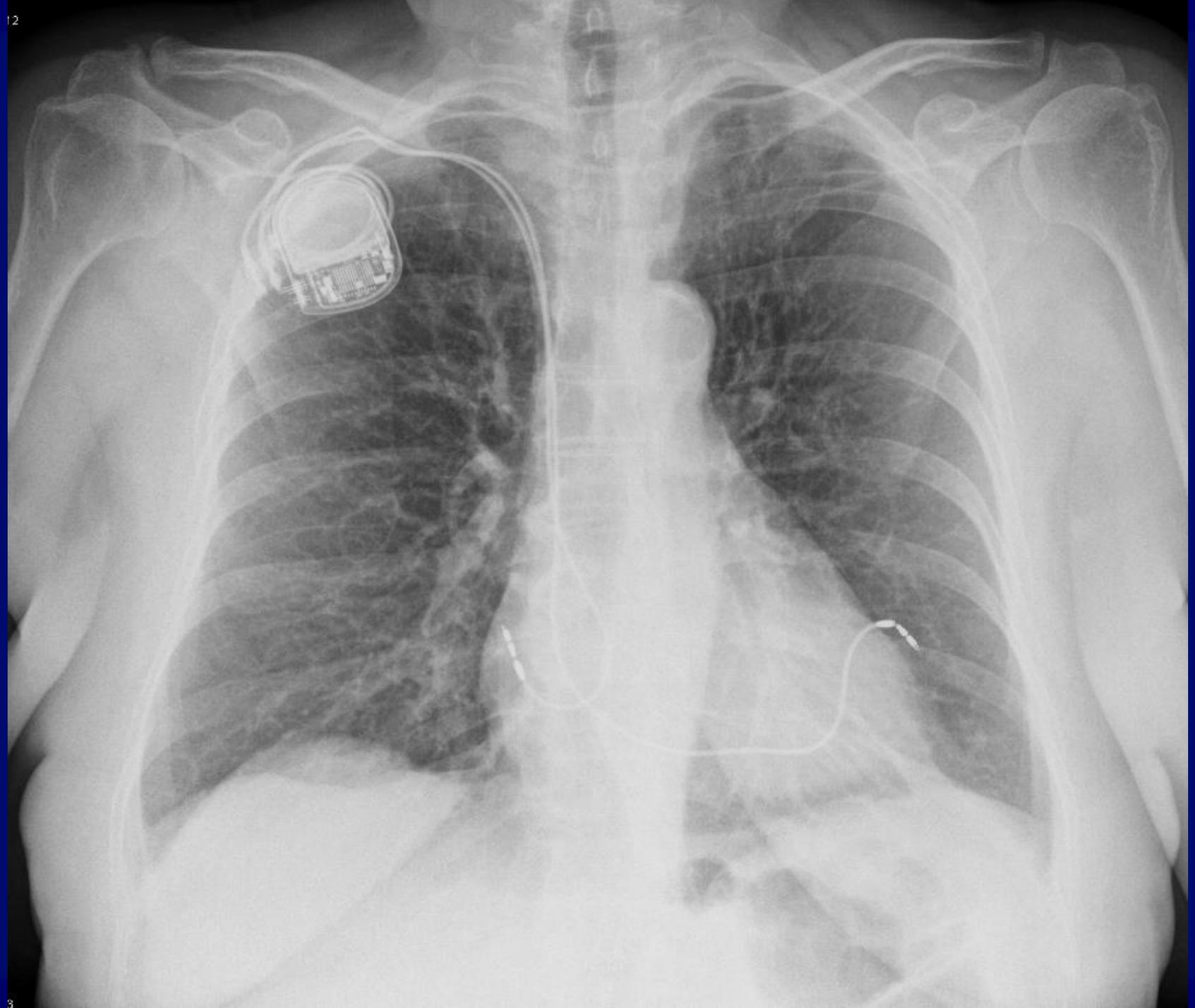


© OLJC 2000

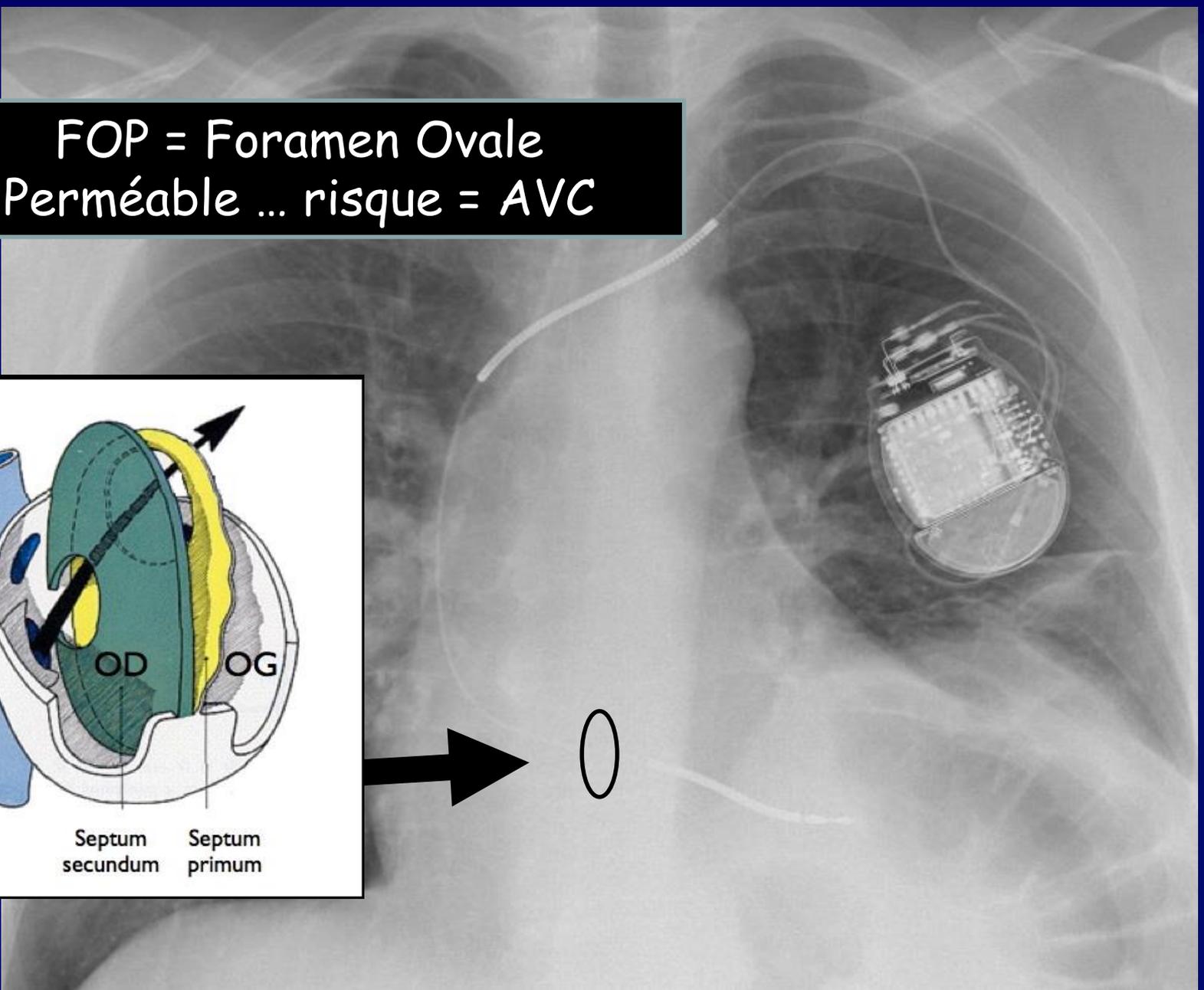
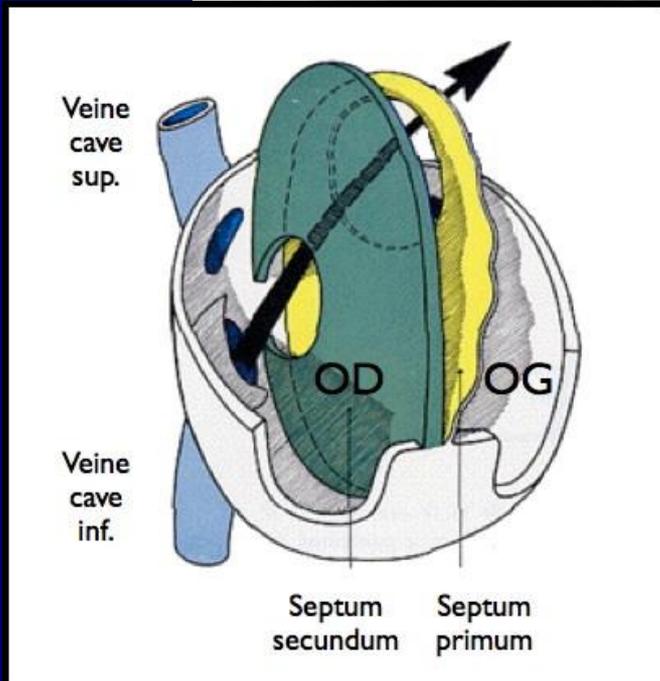


Hemothorax ... très rare





FOP = Foramen Ovale
Perméable ... risque = AVC



Les infections sur appareils cardiaques implantables, cela existe

Comme tout matériel étranger, les appareils cardiaques implantables peuvent favoriser la formation de foyers infectieux. Au congrès de la Société Belge de Cardiologie, un cas. La littérature



programmés ne pas permettre le développement de l'infection du défibrillateur. C'est le PET-Scan au 18F-FDG qui a montré une captation typique du marqueur le long des câbles de l'appareil. Cet examen a également montré l'existence d'abcès métastatiques dans les poumons. Le défibrillateur fut enlevé et le patient fut traité par antibiotiques pendant sept semaines, ce qui permit une évolution très favorable. Le suivi à six mois fut totalement rassurant.



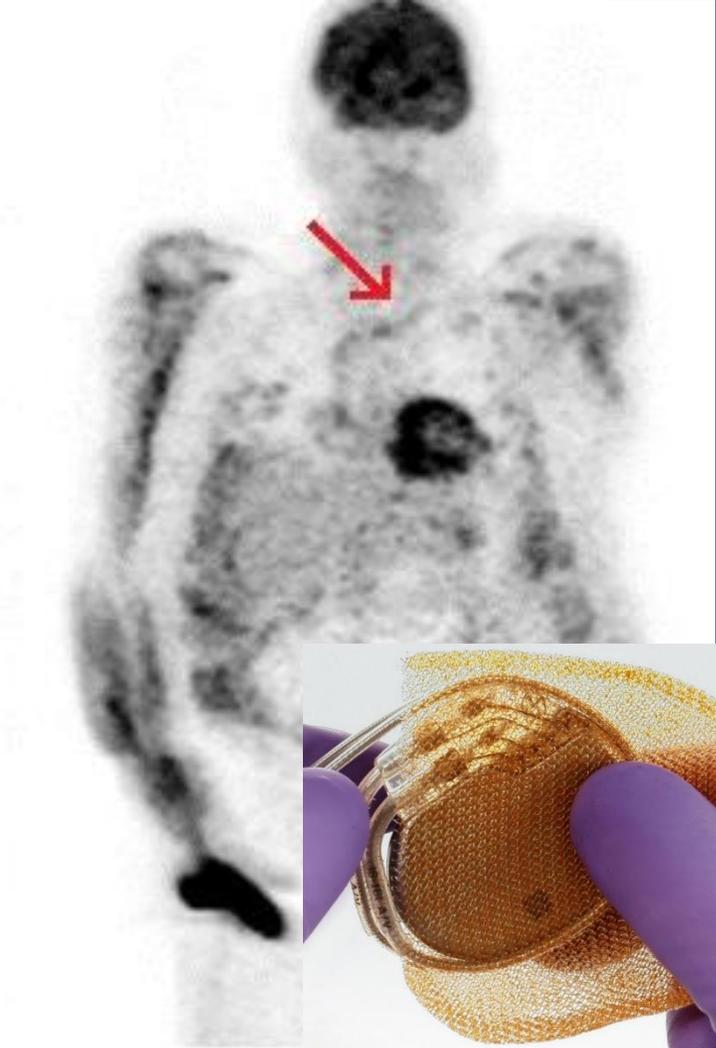
du poster, le PET-Scan n'est pas susceptible d'apporter une aide décisive au diagnostic des infections sur appareils cardiaques implantés. Le diagnostic reste incertain en l'absence de données classiques.

Intéressants
réalisée par Palmisano et al. Les complications sur ap-

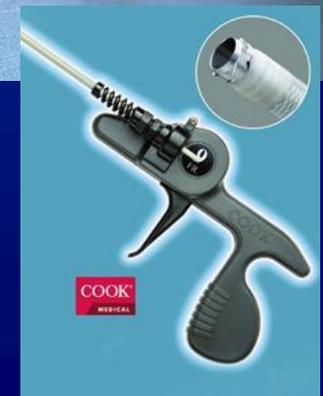
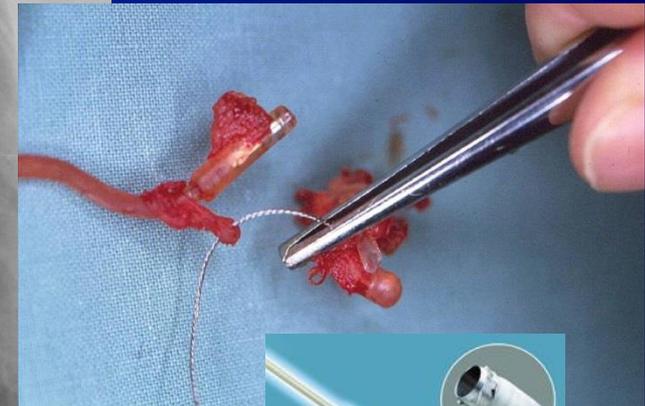
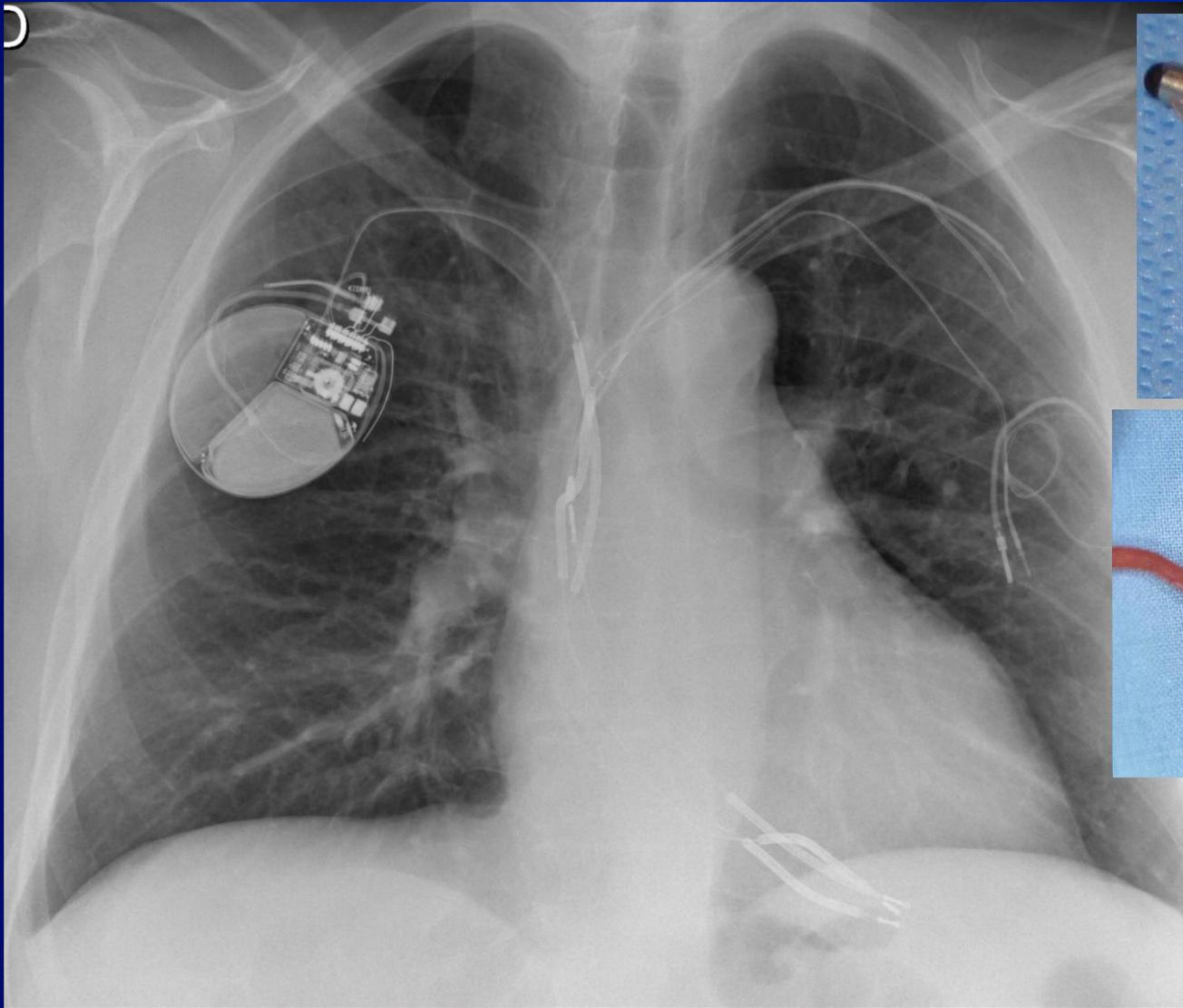
germes responsables le plus souvent sont ceux de la peau, par exemple le staphylocoque doré et les streptocoques à agglutinine négatifs occupent la première place. Mais des cas dus à des bactéries bactérienne, notamment *Staphylococcus aureus*, ont été rapportés.

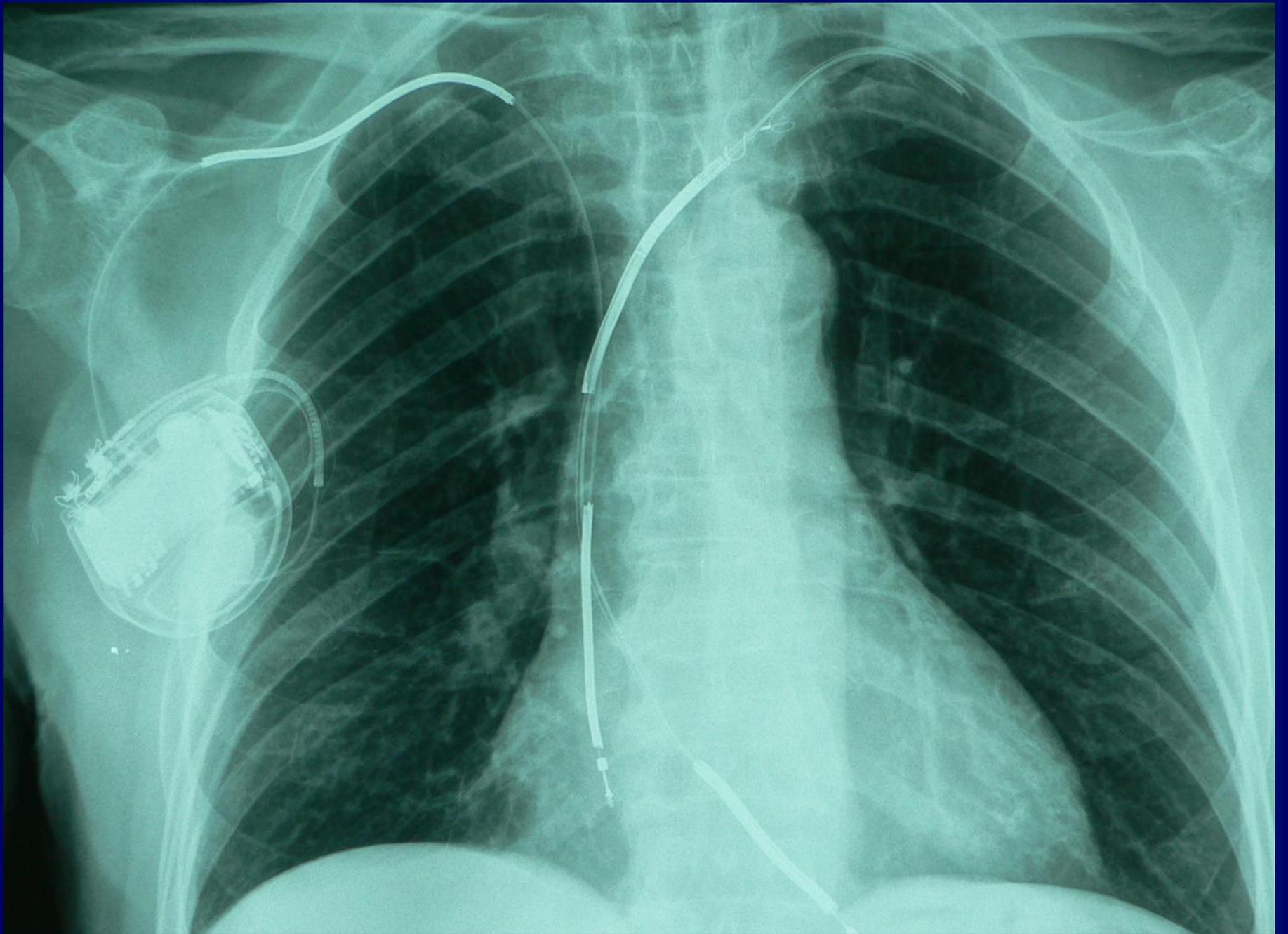
Dans une étude qu'ils ont publiée dans les Acta Cardiologica, l'équipe de Palmisano a étudié que le taux d'infections cardiaques sur une série de 1.916 appareillages implantés était de 1,7%. Les comorbidités associées au diabète, l'hypertension artérielle, l'insuffisance cardiaque, l'anémie et l'immunosuppression ont été étudiées selon les cas. Parmi les

travaux de l'appareil, les infections des membres de l'appareil sont nécessaires. Les incidents infectieux sont rares. Les auteurs ont déclaré que les infections sur lieu hospitalier sont plus fréquentes. Ils ont retiré l'appareil s'ils ont constaté une infection. Une étude prospective au



Sondes abandonnées ... ou infectées





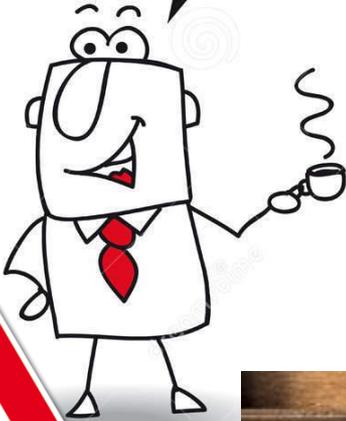
Venous thrombosis : >> 30%
Asymptomatic 95%



WHAT ELSE?

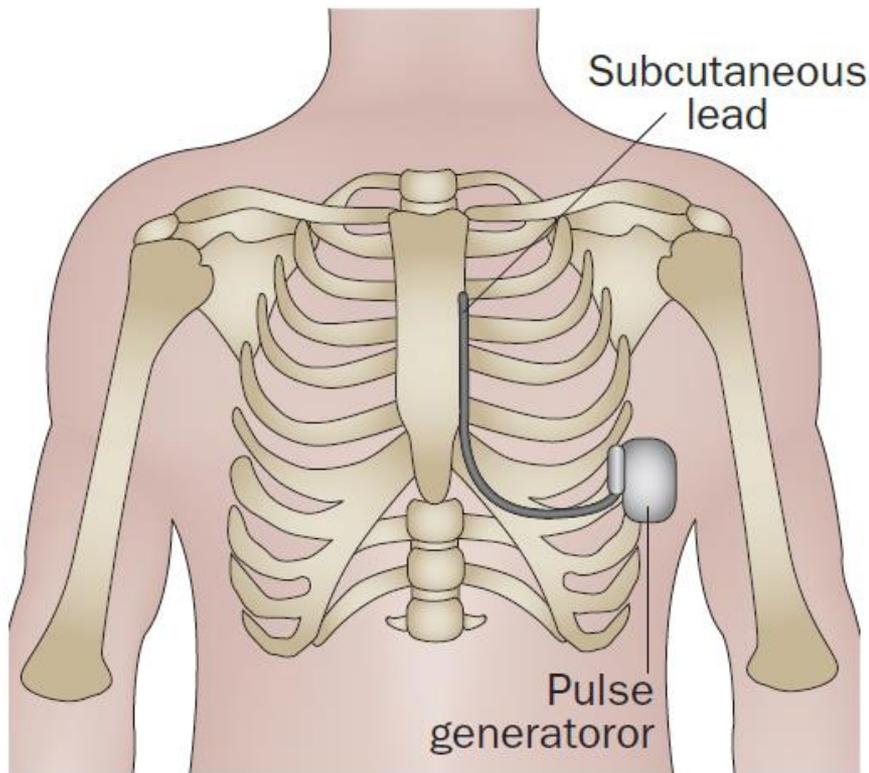


info

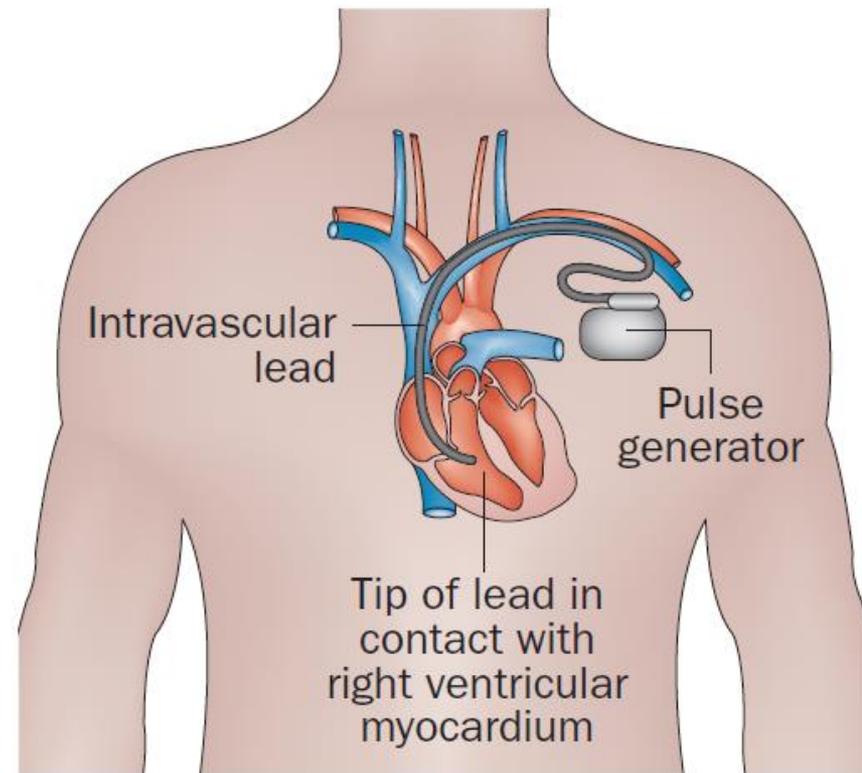


S-ICD ... pour qui, pourquoi, comment ?

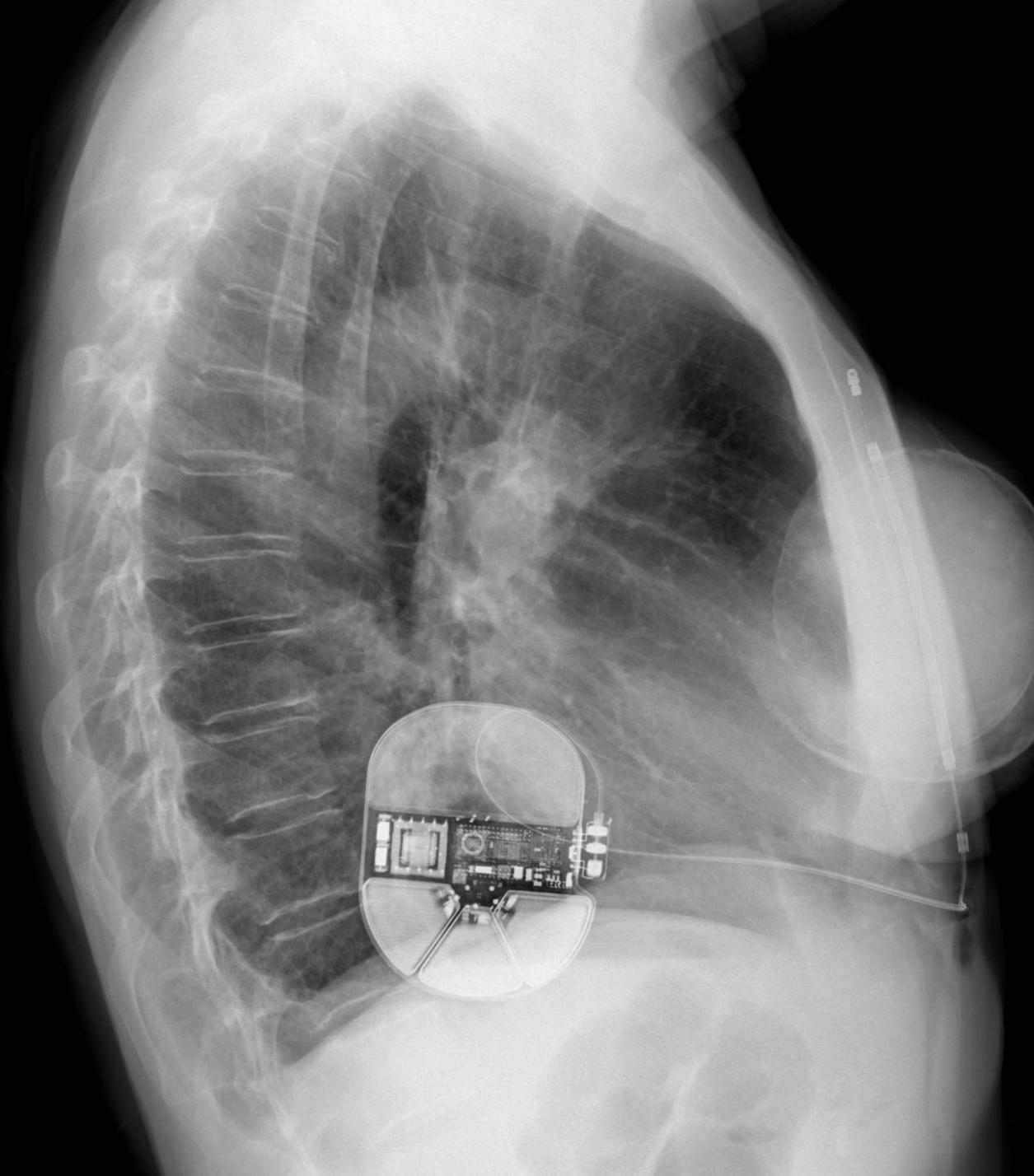
S-ICD

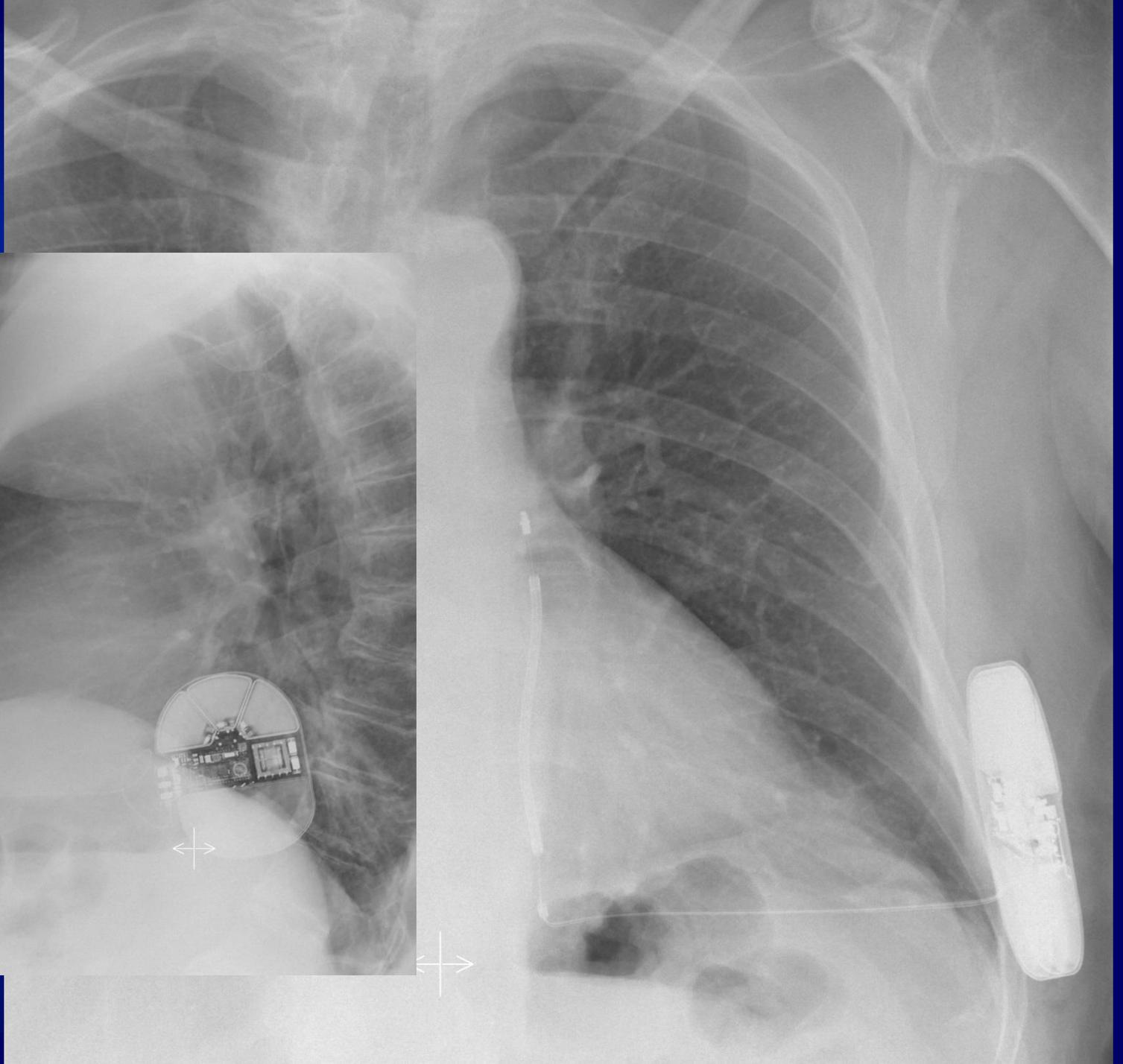
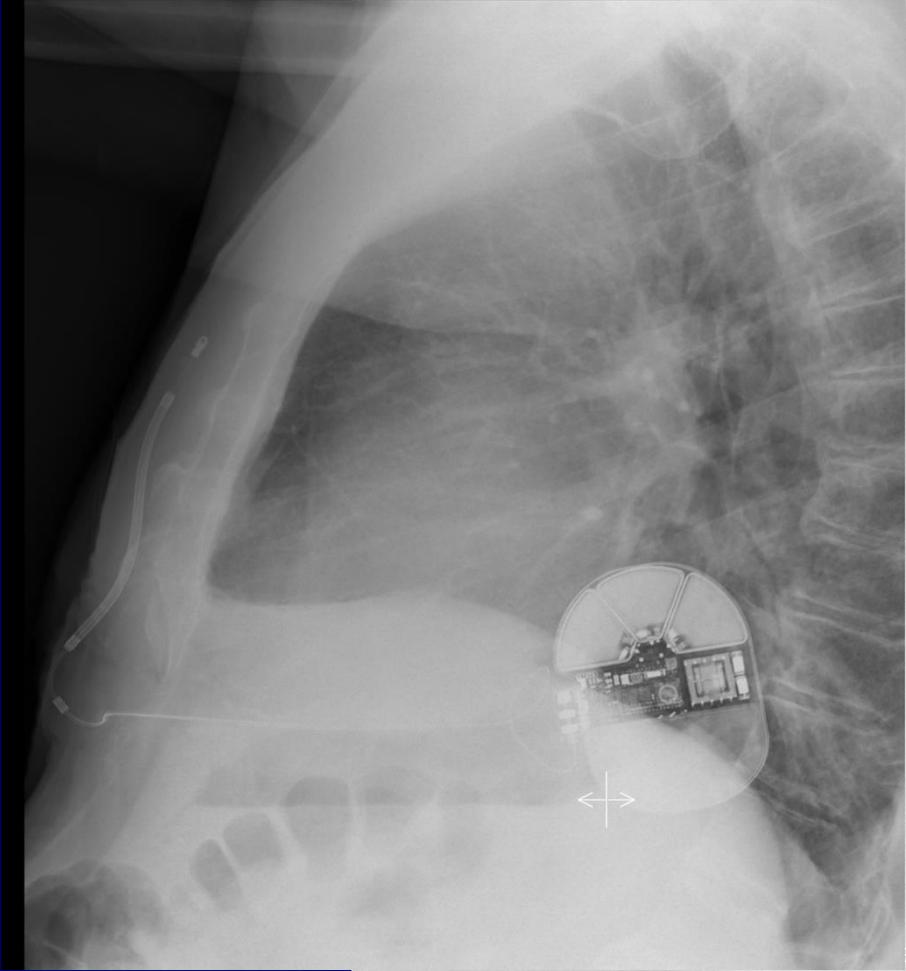


Transvenous ICD

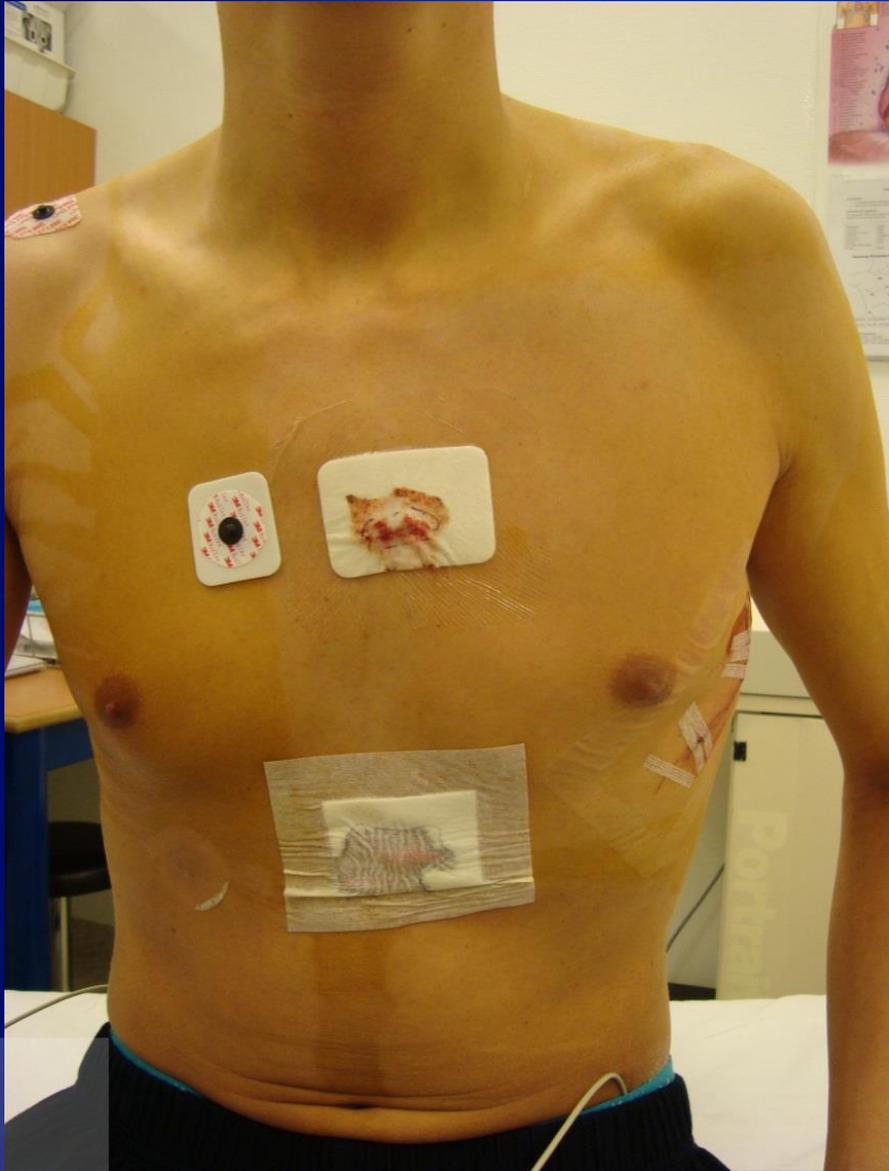








Post-Operatoire



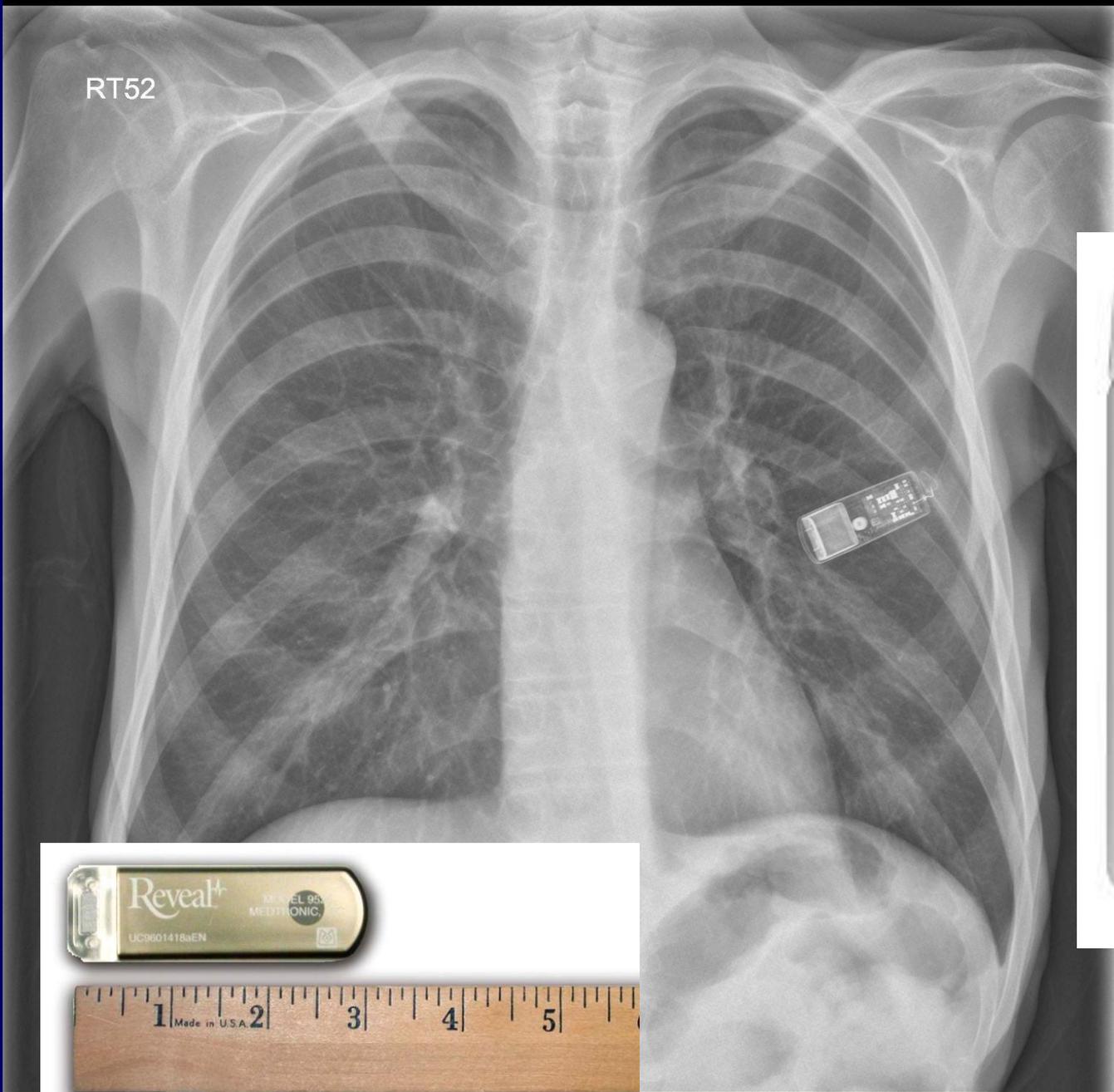
J+30 Post-opératoire



J+30 Post-opératoire



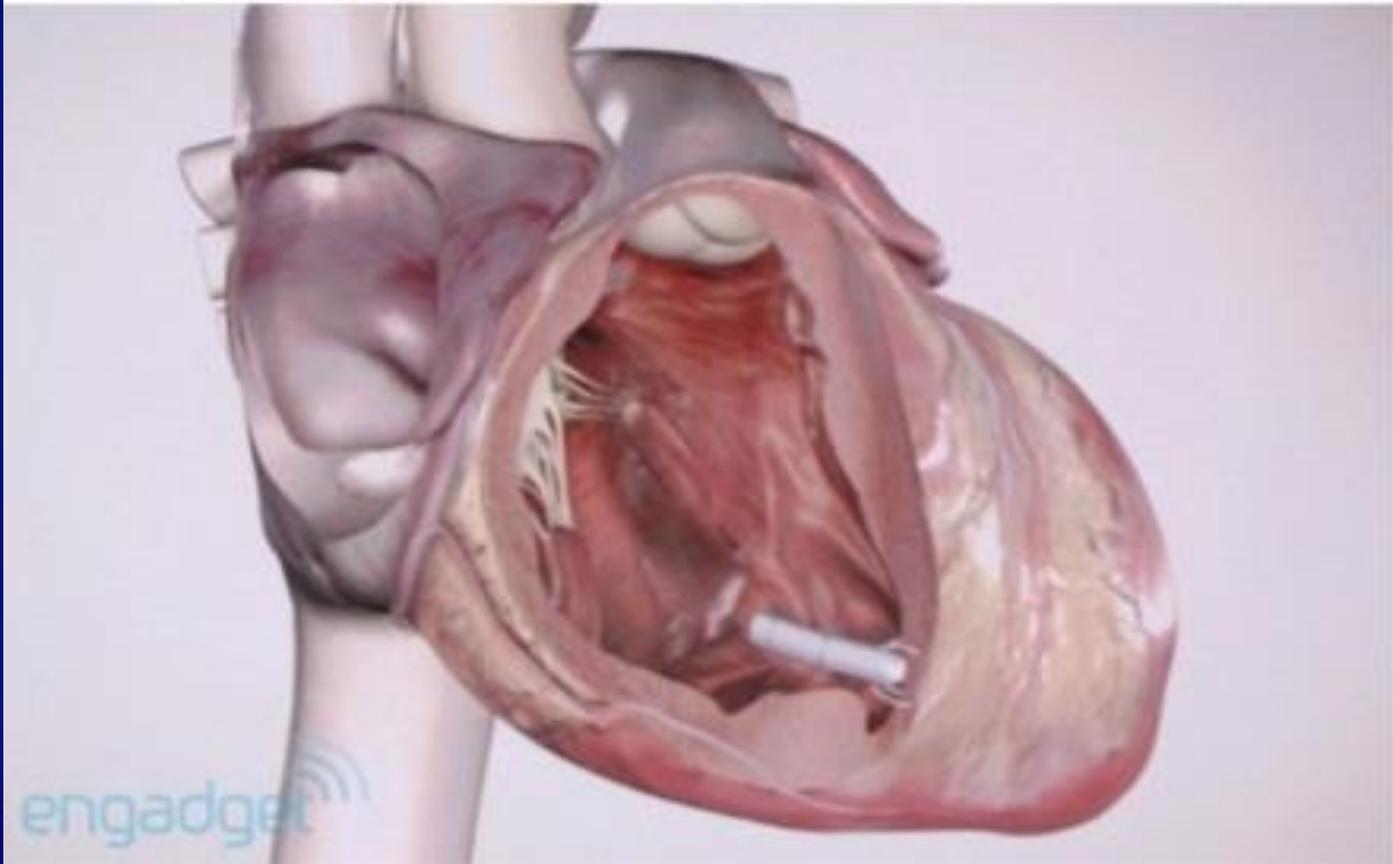
RT52

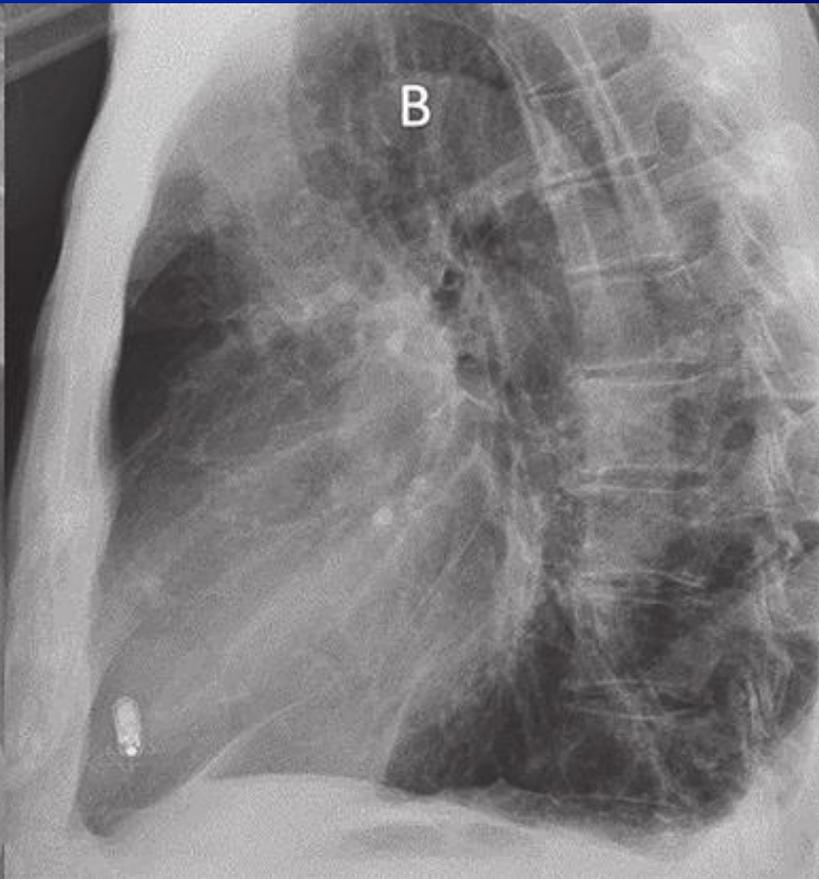
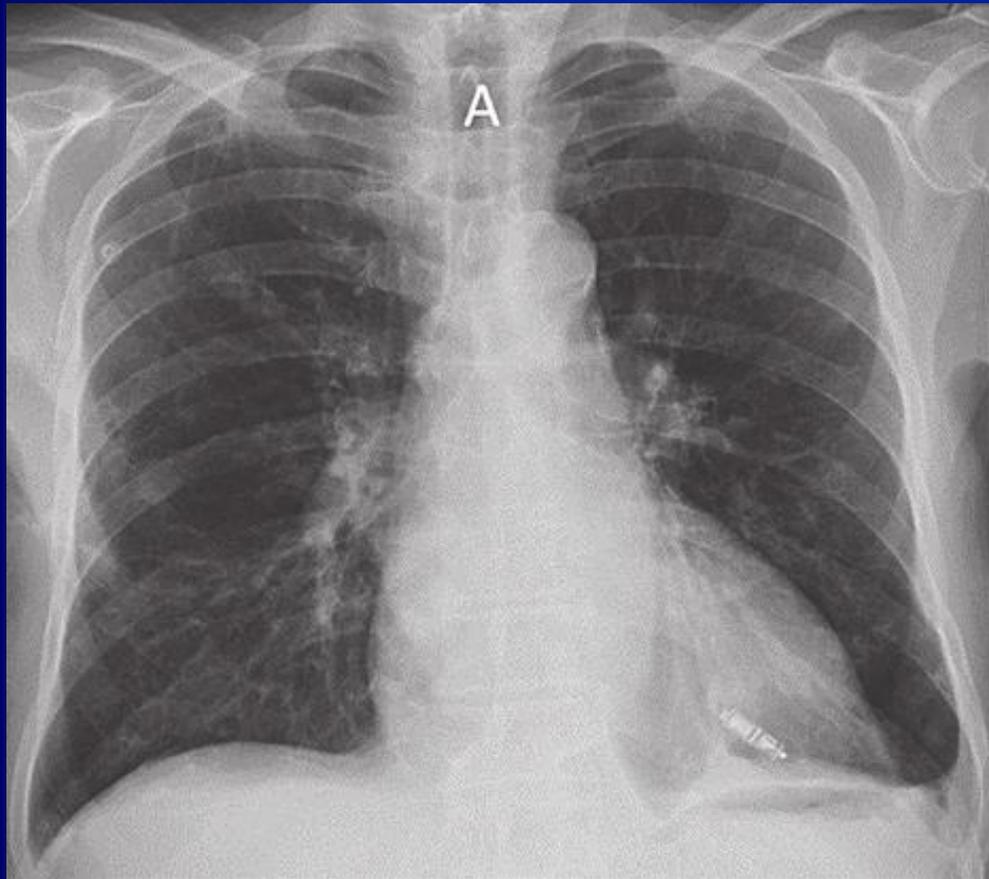




Nanostim ... StJude
Micra ... Medtronic

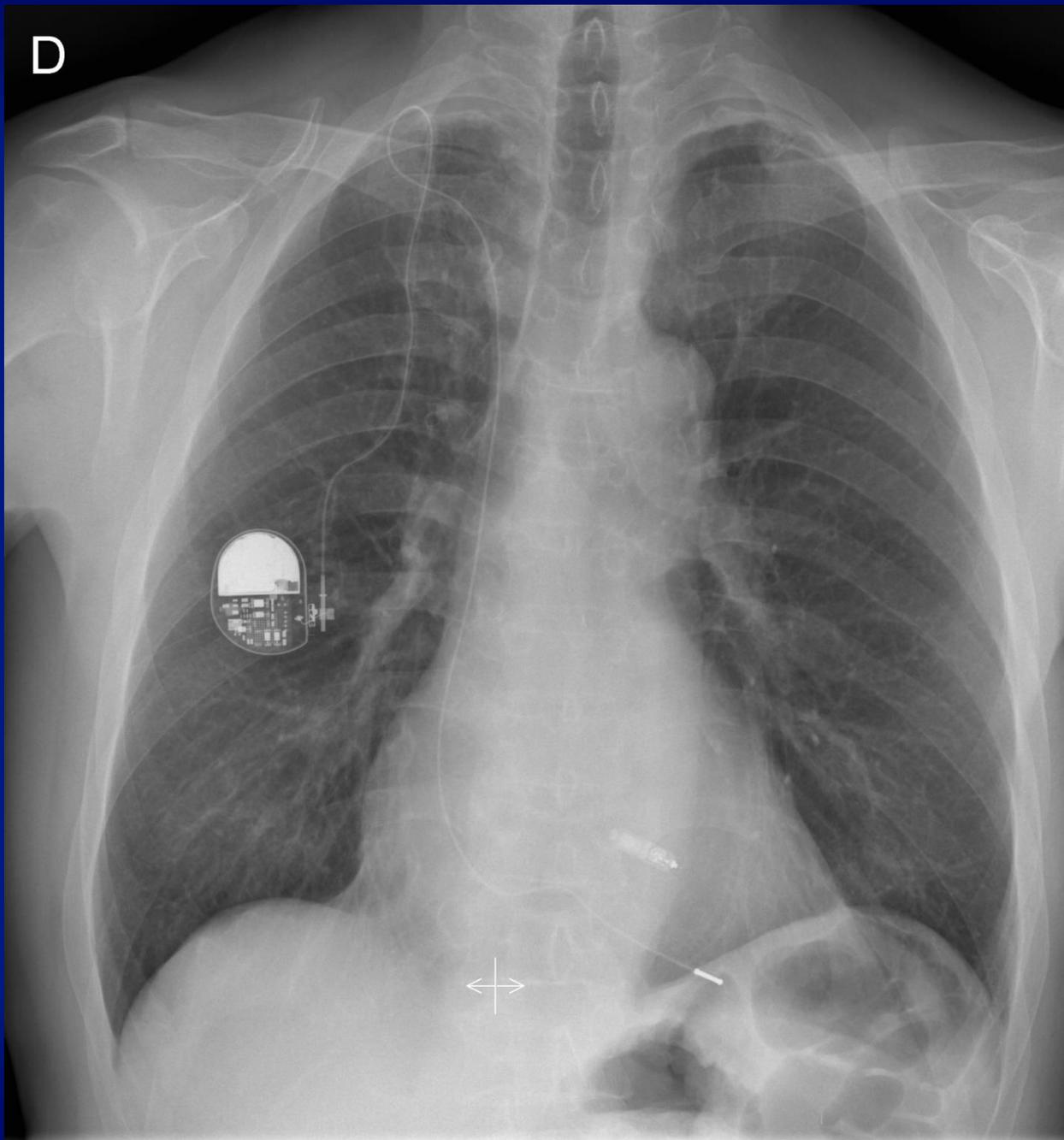




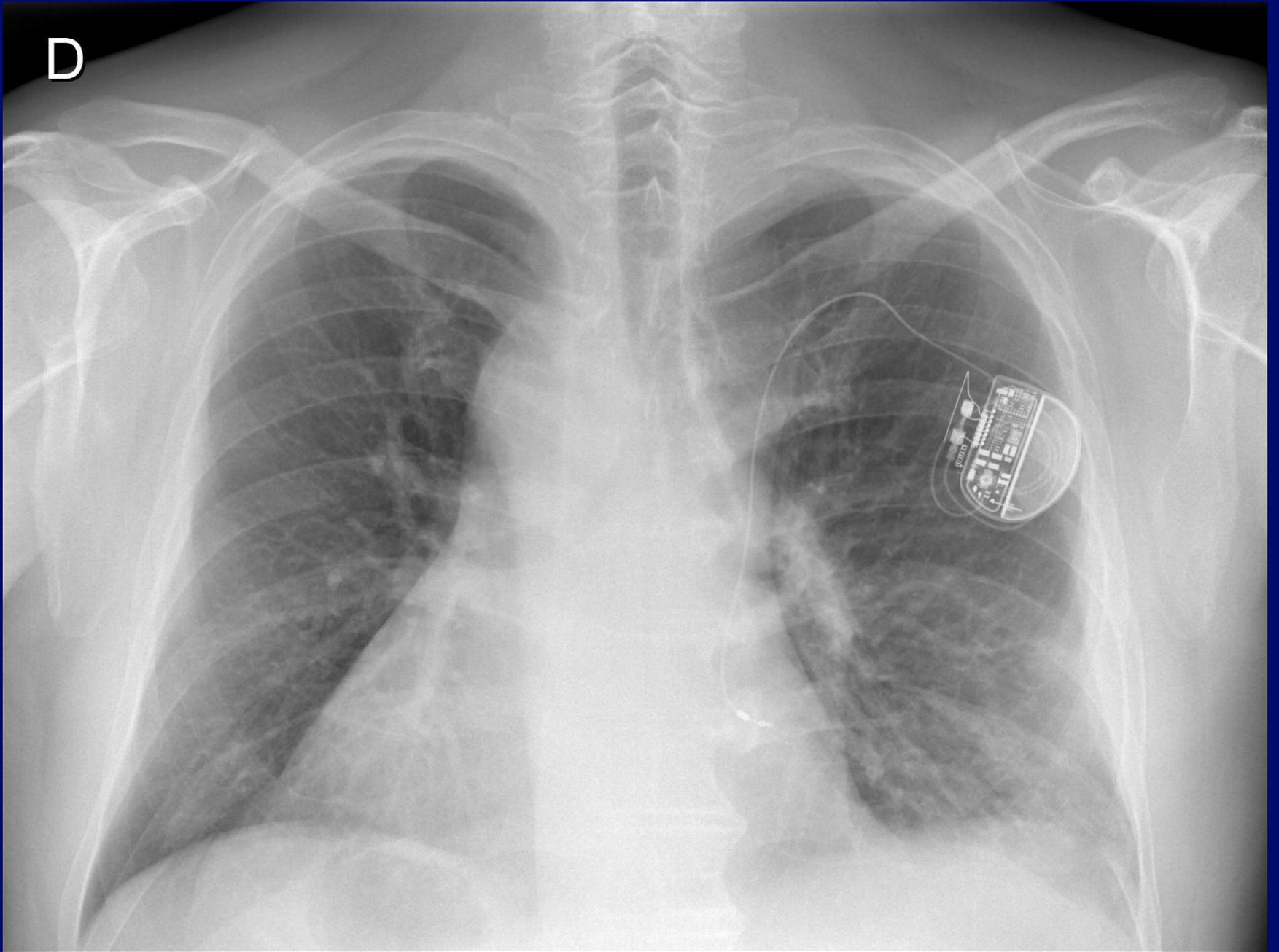


A quoi pensez-
Vous ???

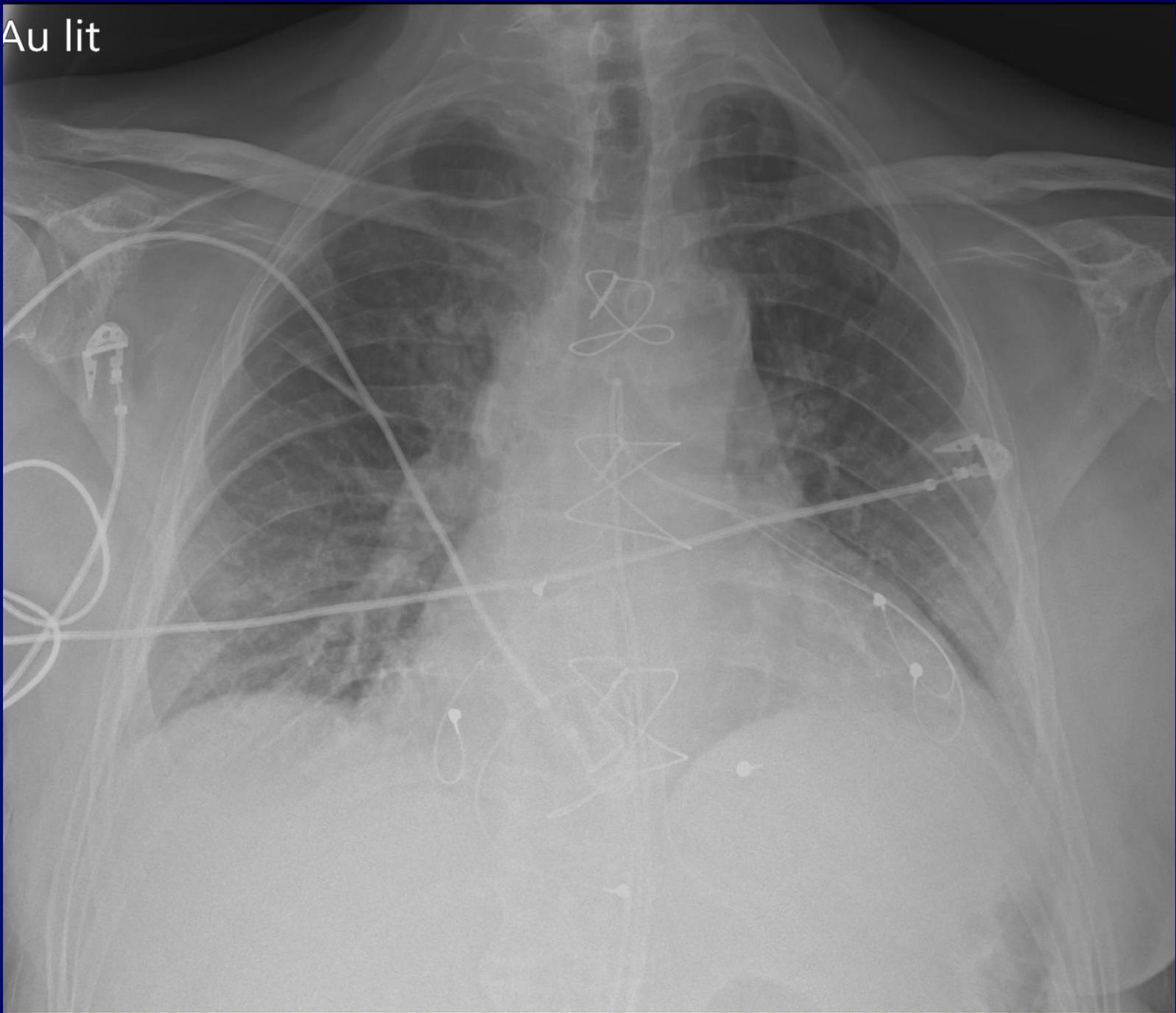
D

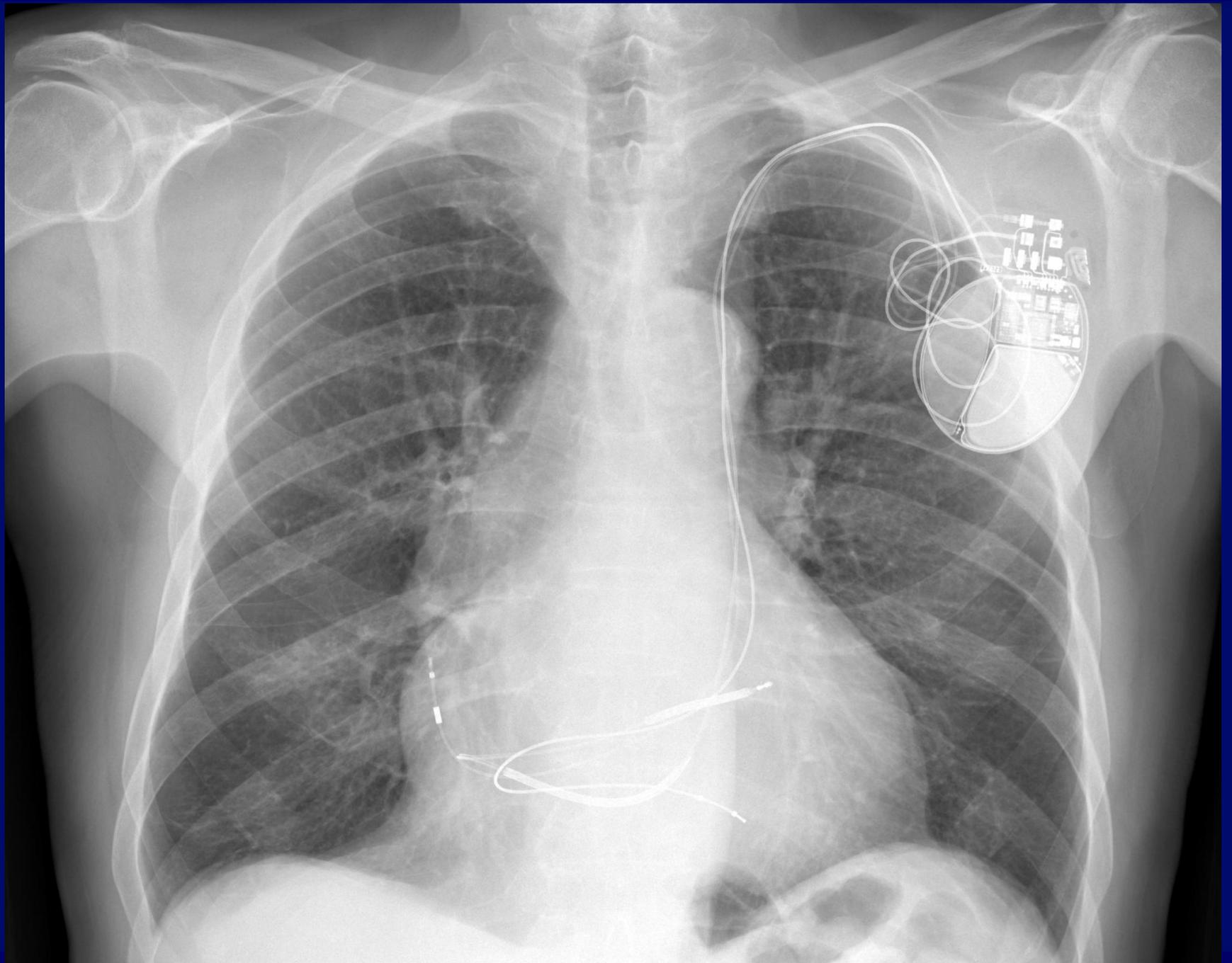


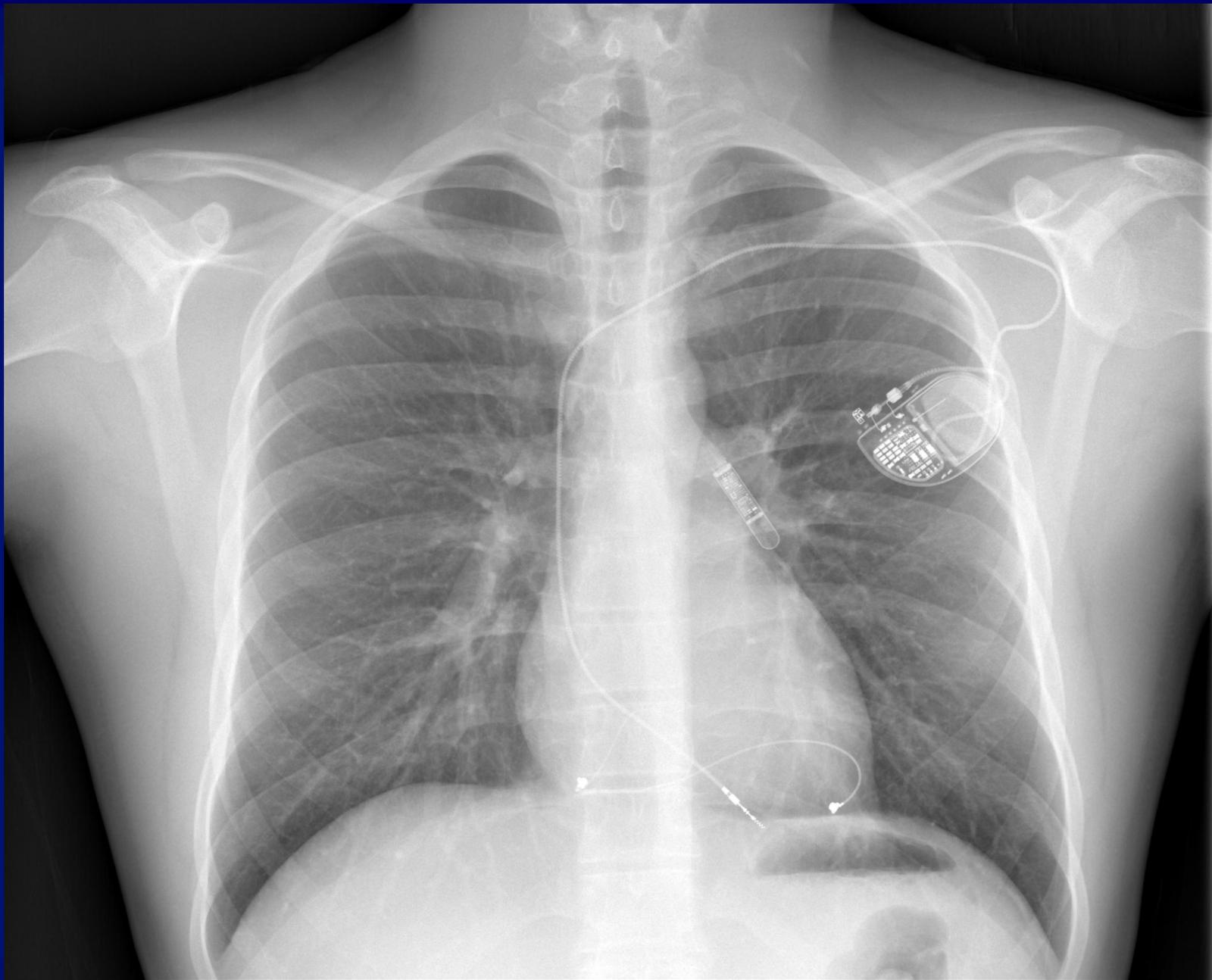
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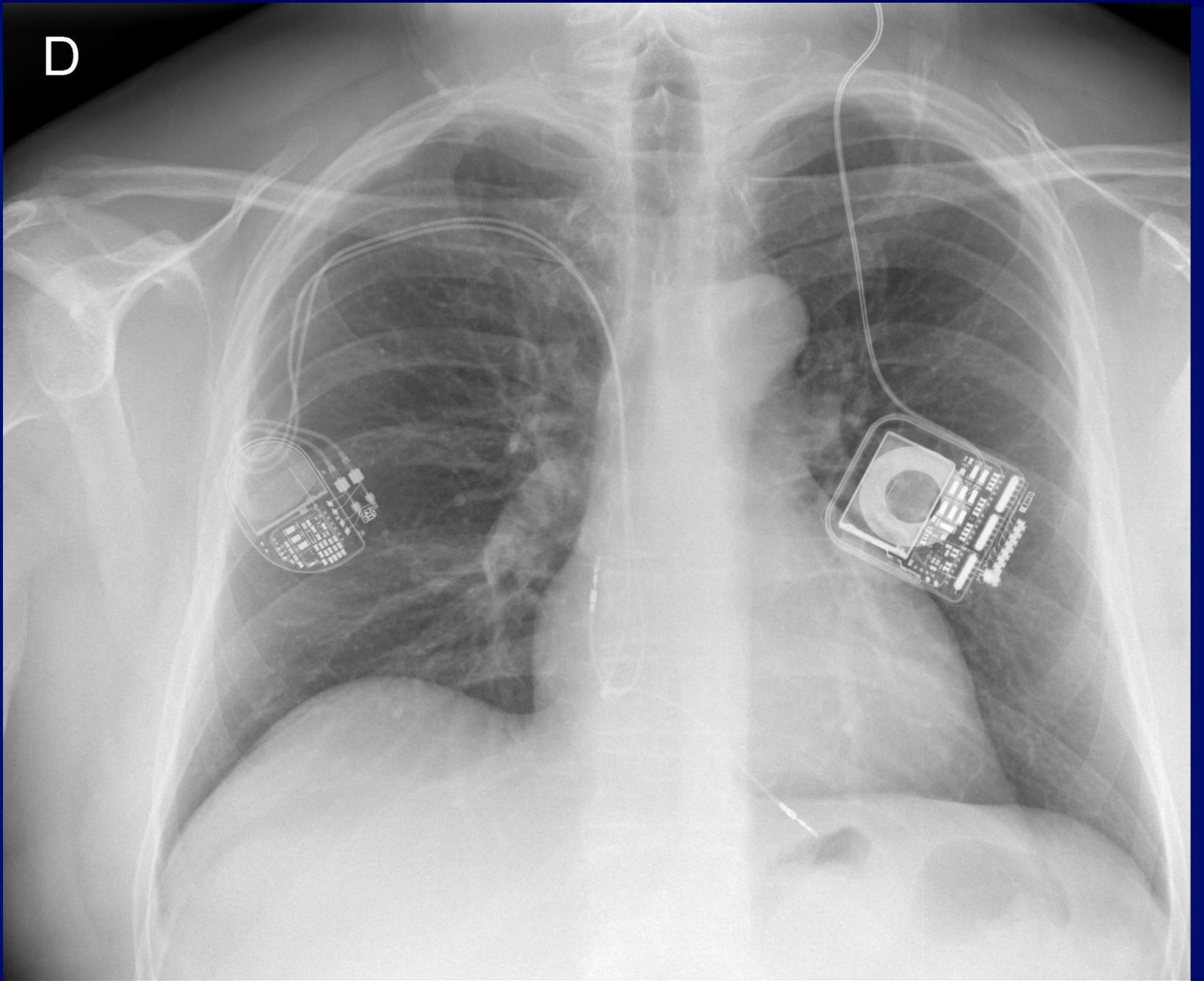
Au lit







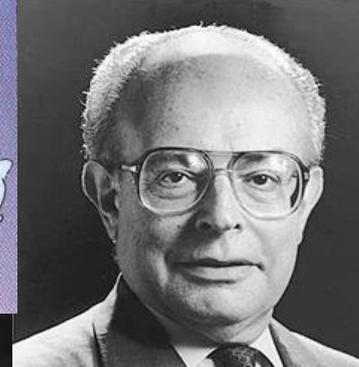
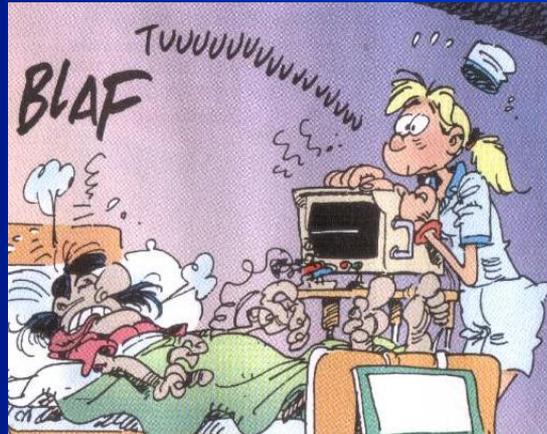
D



Défibrillation, Réanimation et Défibrillateur



Paul Zoll

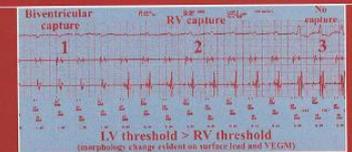


Michel Mirowski



Simplified
Interpretation of
ICD Electrograms

AARON B. HESSELSOHN, MD



Blackwell
Futura



Leonard A. Cobb



Prix Nobel de la paix 1985
Prévention de la guerre nucléaire

Dr. Bernard Lown

