

Session :
Nouvelles options
dans le traitement
des lésions calcifiées

UNE LÉSION TRAITÉE
PAR L'ASSOCIATION DE DEUX TECHNIQUES
ROTABLATOR + SHOCKWAVE

LE "ROTAWAVE"



Charlotte TROUILLET
Clinique Claude Bernard
Metz

DÉCLARATION DE LIENS D'INTERET

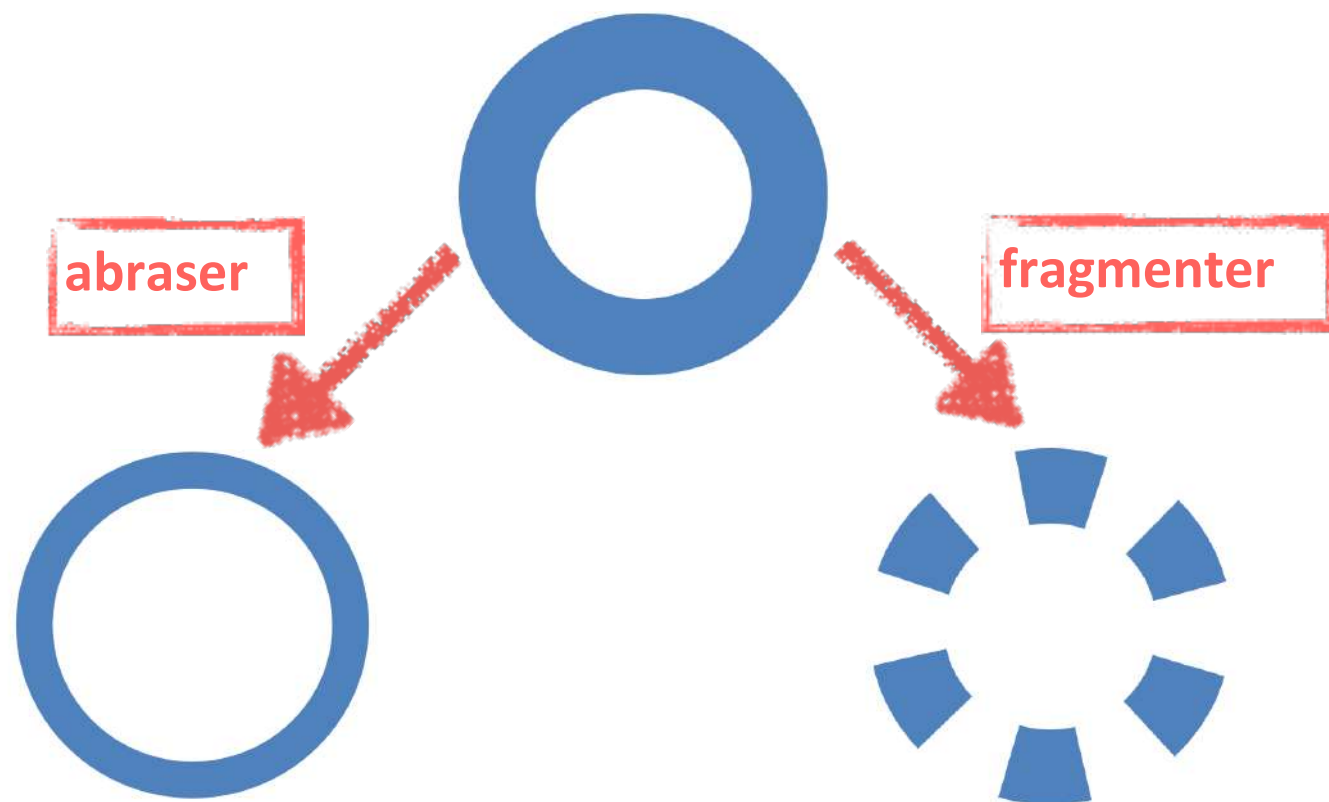
Nom de l'orateur : Charlotte TROUILLET, Metz

☒ Je n'ai pas de lien d'intérêt potentiel à déclarer

INTRODUCTION

severe LHCC

(Lesion with High Calcium Content)

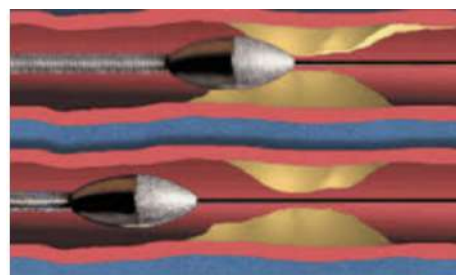


**l'athérectomie rotationnelle
Rotablator**

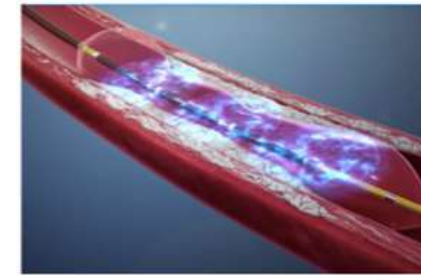
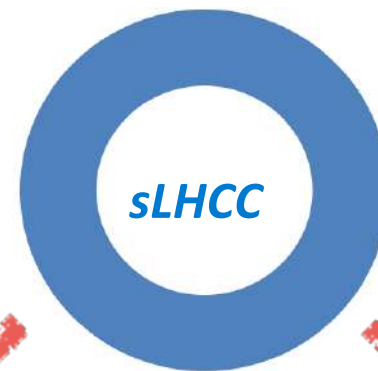
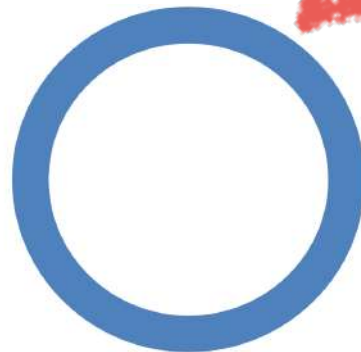


**la lithotripsie intracoronaire
Shockwave**

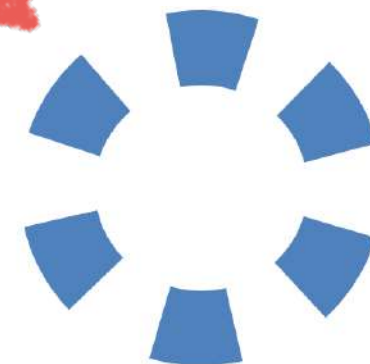
QUESTIONS



abraser



fragmenter

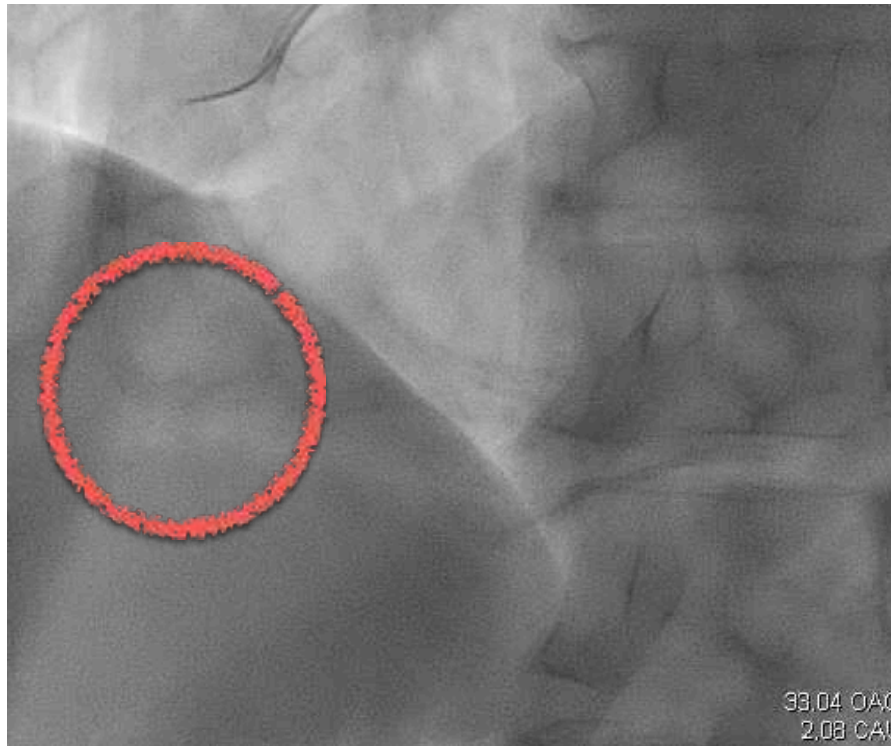


Faut-il avoir *les 2 en salles de cathé* ?
Techniques *alternatives* ou *complémentaires* ?
Dans quel cas s'orienter vers l'une ou vers l'autre ?
D'emblée ou en *bail out* ?



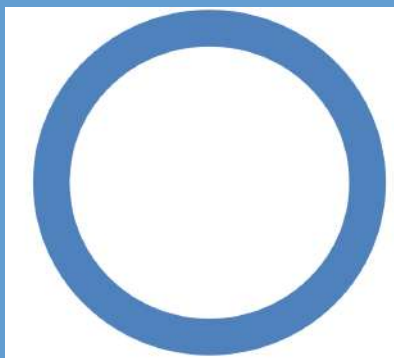
patient de 68 ans
tabagique actif massif
coronaropathie initiée en 2005, ATC réseau G, stable depuis.
artériotique, en attente de revascularisation des MI
échographie de stress positive

à partir d'un cas...

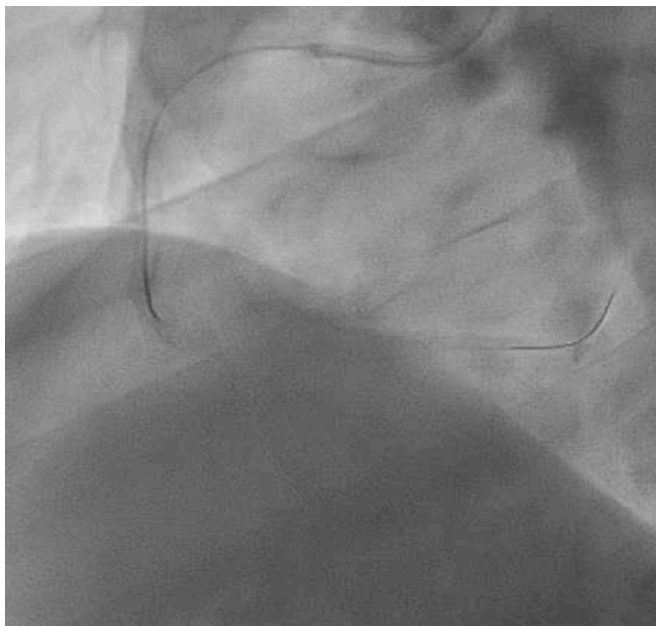


lésion très serrée 2^e coude CD
massivement calcifiée
caractère circonférentiel des calcifications

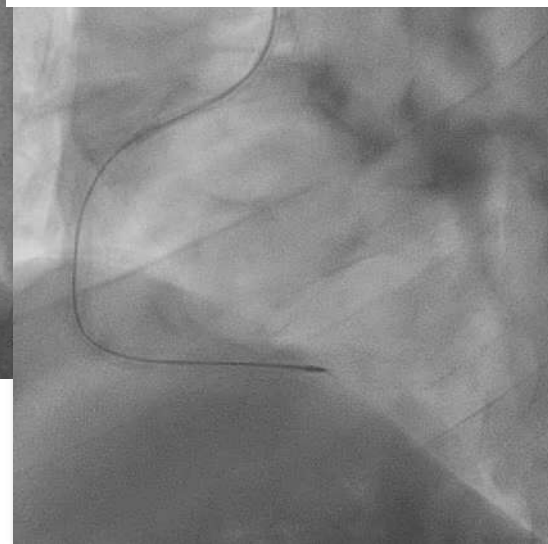
abraser ...



→ Rotablator d'emblée



AL16F
microcathéter avancé au maximum
franchissement Rotawire

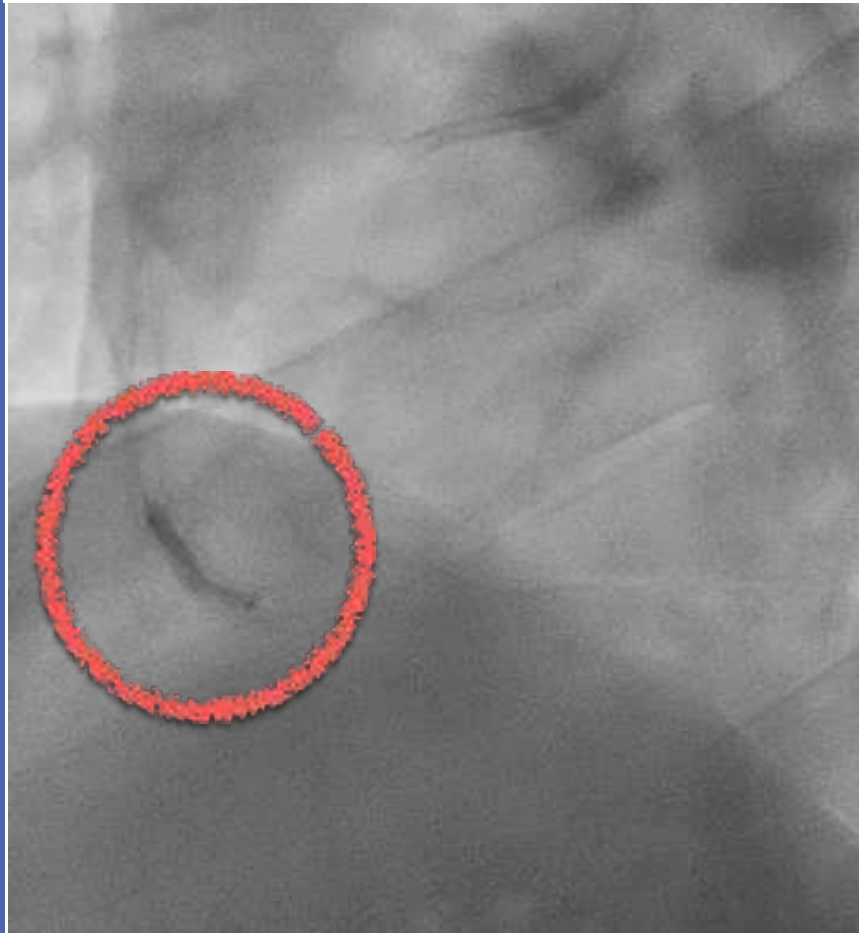


petite fraise 1.25mm
Plusieurs minutes de fraisage
progressif
Polissage final (absence de
chute de vitesse)

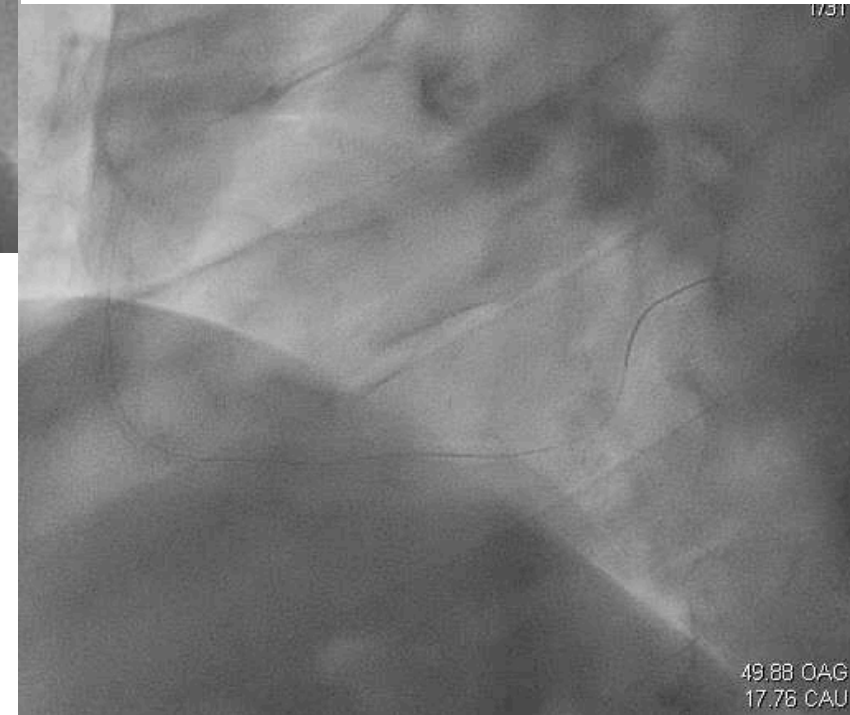


choix d'emblée d'une 2^e fraise
de + gros diamètre (1.75mm)

prédilater ...



ballons NC de 3.0 puis 3.5mm
forte empreinte :
aspect typique en "diabolo" ou
"dog bone"
prédicteur d'une sous-expansion
majeure du stent

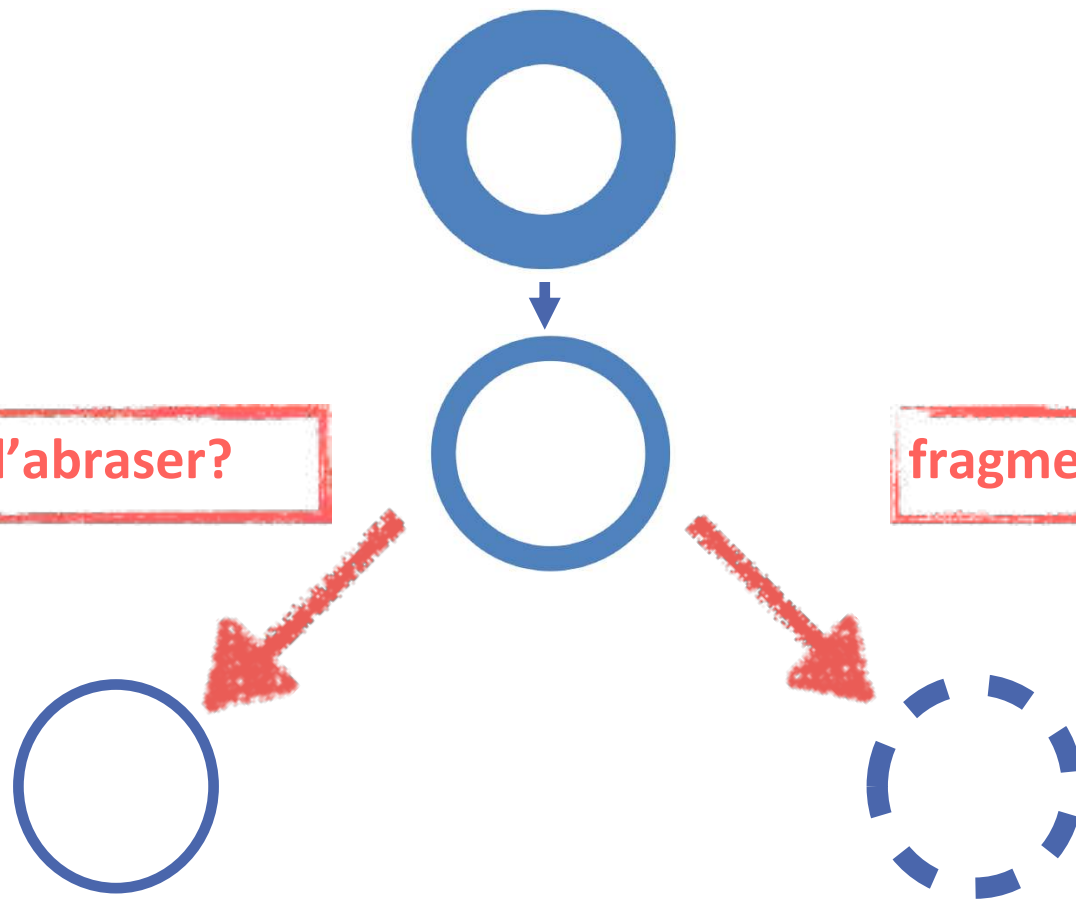


...options?



continuer d'abraser?

fragmenter ?



- avec **une plus grosse fraise** (2.0/2.5mm)
- . nécessité 7 voire 8 French
 - . effet incertain / concavité
 - . risque de perforation (angulation)

- Compléter par la **"modulation de la plaque"**
// **IVL Shockwave:**
- . fragmenter les calcifications dans la zone cible (concavité de l'angulation)
 - . stratégie sécuritaire
 - . réalisable en 6 Fr
 - . limitante principale : profil du ballon

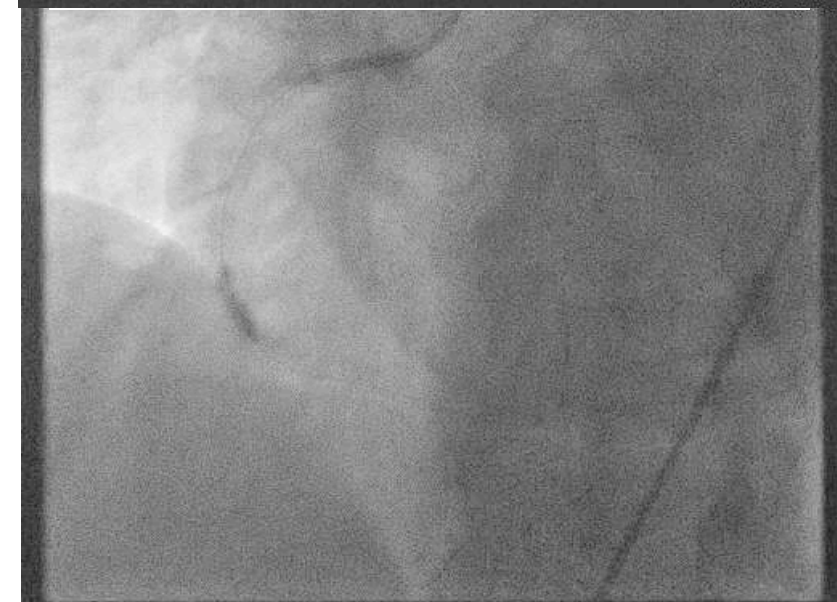
fragmenter...



Grâce à la préparation de la lésion par le Rotablator,
ballon de Shockwave de 3,5mm facilement
acheminé :
- 8 séries de 10 impulsions / 30 sec
- ballon à 4, puis 6 atm.
→ dès la 3^e série: **levée de l'empreinte** en
regard des calcifications massives



33.81 OAG
11.59 CAU



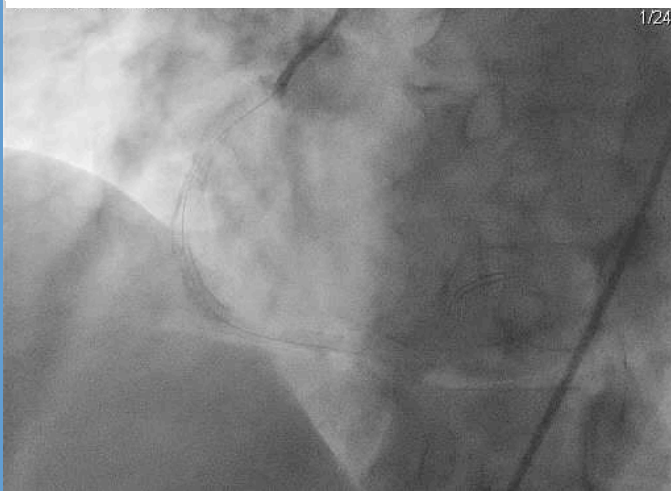
33.81 OAG
11.59 CAU

succès
procédural

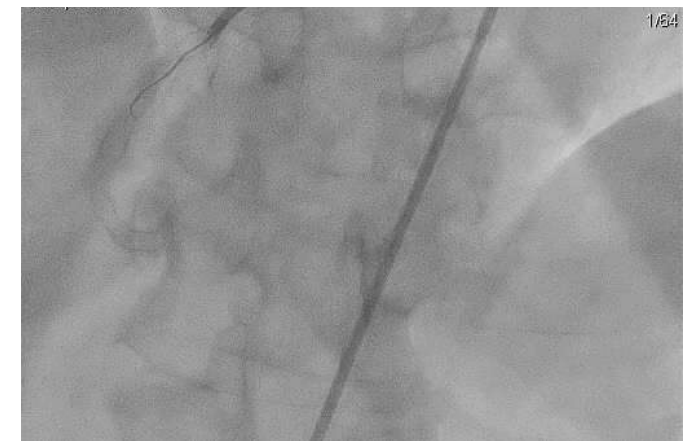


prédilatations
ballon de 3,5mm, 16atm
pas d'empreinte

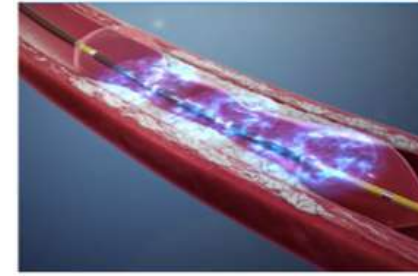
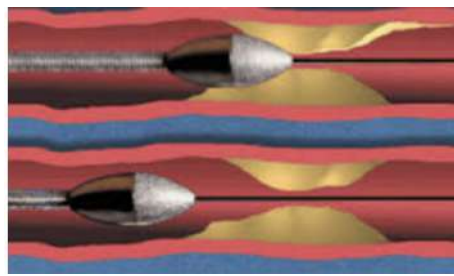
stent 4x24mm
post-dilatation ballon NC 4mm



résultat final

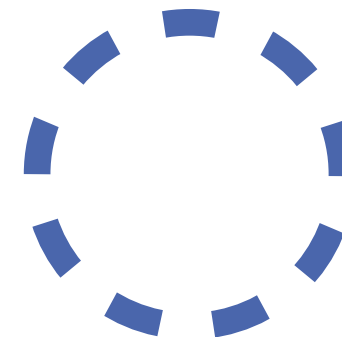
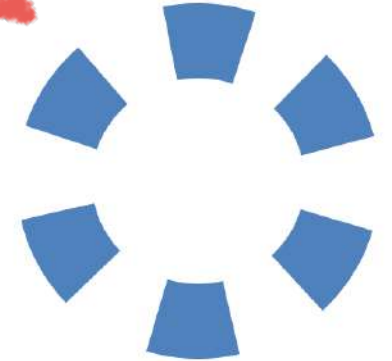
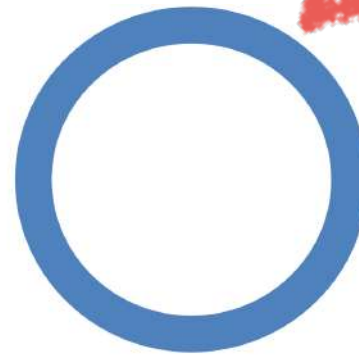


approche hybride "Rotawave"



abraser

fragmenter

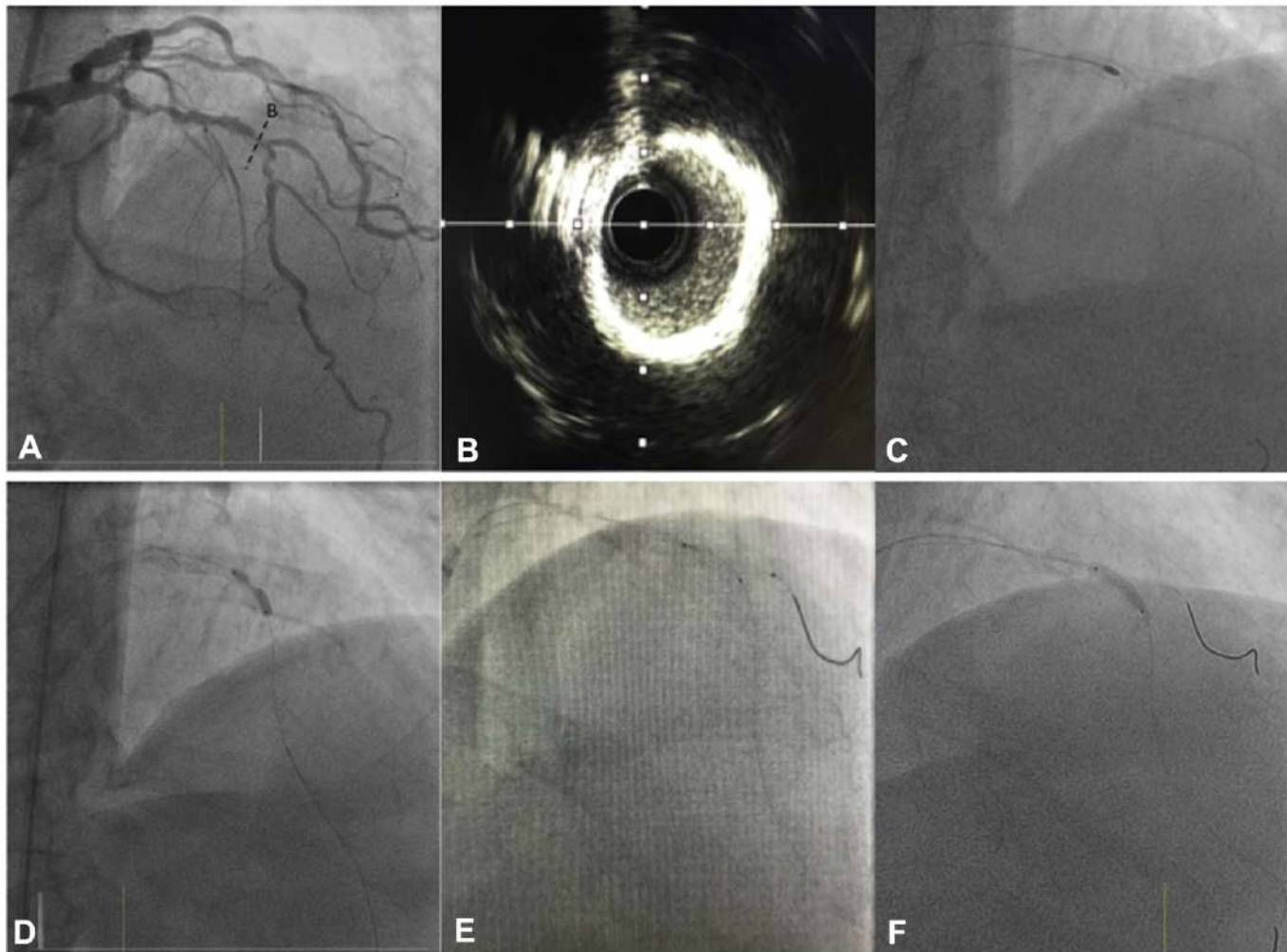


ou "RotaTripsy"

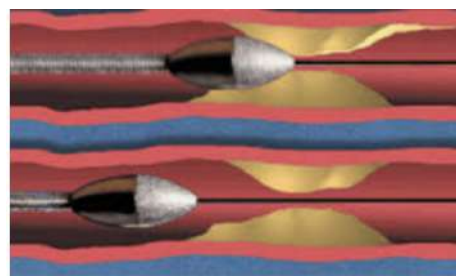
RotaTripsy

Combination of Rotational Atherectomy and Intravascular Lithotripsy for the Treatment of Severely Calcified Lesions

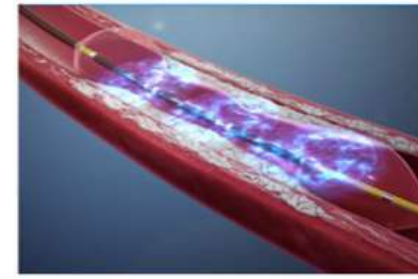
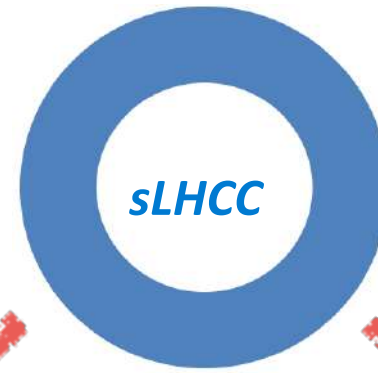
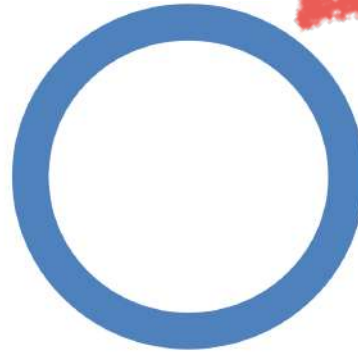
Jurado-Roman A. JACC 2019



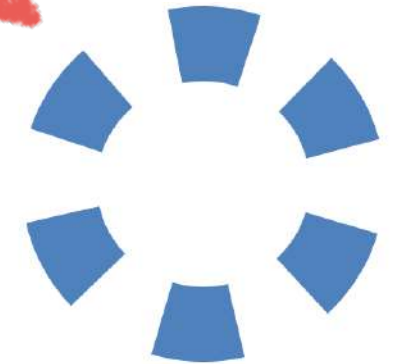
Réponses...



abraser



fragmenter

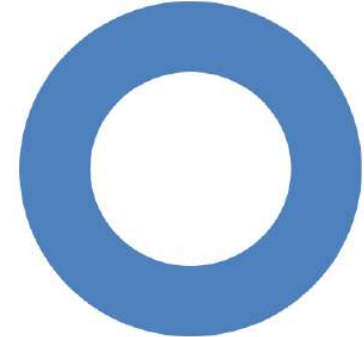


Faut-il avoir **les 2 en salles de cathé ?**
Techniques **alternatives** ou **complémentaires** ?
D'emblée ou en **bail out** ?
Dans quel cas s'orienter vers l'une ou vers l'autre ?

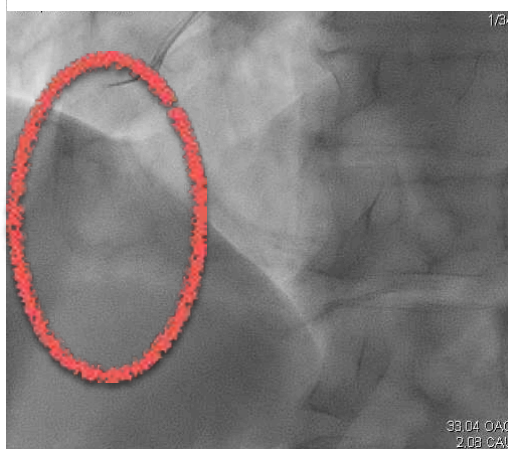
PRÉREQUIS 1 :

L'ANALYSE ANATOMIQUE DES CALCIFICATIONS

le point clé :
identifier les "severe LHCC"

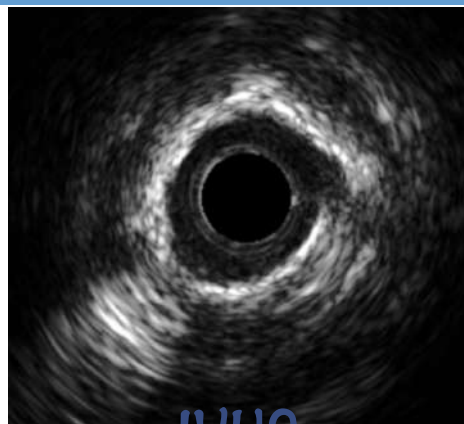


1. ANGIOGRAPHIE +++

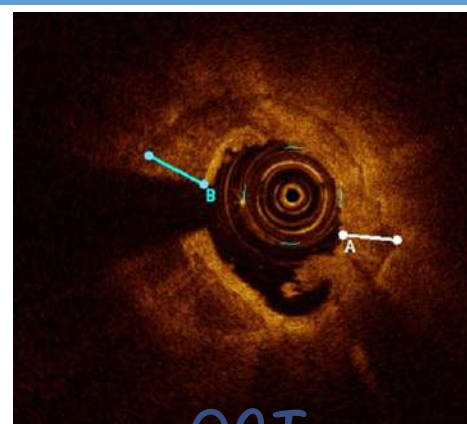


anneau calcaire circonférentiel et dense
rail calcaire
bourgeon calcaire massif excentré
bifurcation calcifiée avec importante collatérale

2. +/- imagerie endocoronaire



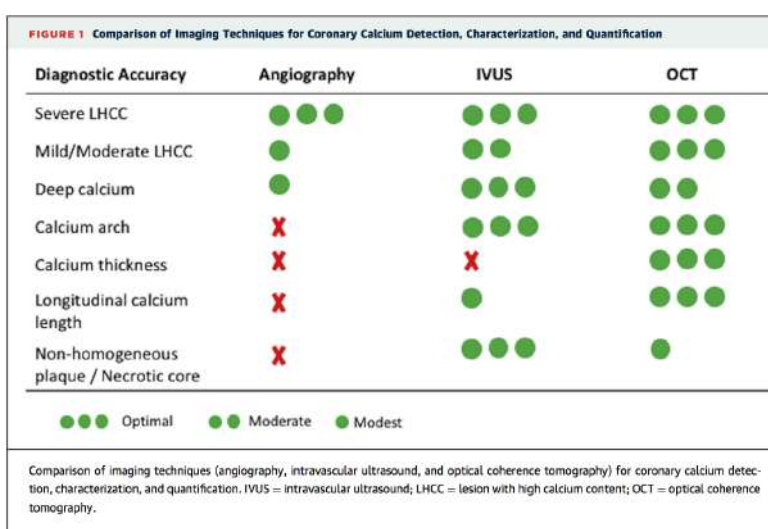
IVUS



OCT

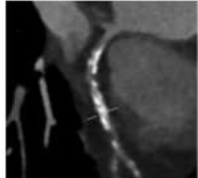
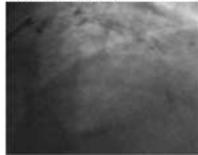
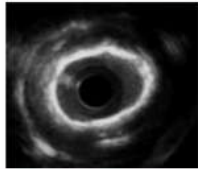
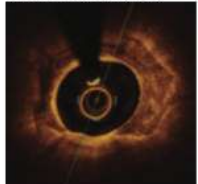
arc > 270°
épaisseur > 500 um
longueur > 5mm

PRÉREQUIS 1 : L'ANALYSE ANATOMIQUE DES CALCIFICATIONS



Luigi de Maria G. JACC 2019

Table 1: Comparisons of Imaging Techniques in for the Detection of Coronary Calcium

Technique	Advantages	Disadvantages
Coronary CT 	- Non-invasive technique - Calcium score in asymptomatic individuals - Prognostic role of calcium score - Calcium location along coronary vessels detected - Spotty calcifications are detected	Contrast medium
Coronary angiography 	Calcium location along coronary vessel detected	- Invasive technique - Contrast medium - Low sensitivity - Only qualitative grading of calcium - Moderate calcifications are detected only during the cardiac cycle
Intravascular ultrasound 	- No contrast medium - Superficial and deep calcium is detected - Semiquantitative grading of calcium: distribution, localisation, length, arc	- Invasive technique - Deep calcium is hidden by acoustic shadow - Microcalcifications are not detected - Unable to assess calcium thickness
Optical coherence tomography 	- Very high resolution - Calcium thickness can be measured - Quantitative grading of calcium: distribution, localisation, thickness, area, volume - Microcalcifications are detected	- Invasive technique - Contrast medium - Limited depth penetration

Sorini Dini C. Interv Cardiol. 2019

PRÉREQUIS 1 :

L'ANALYSE ANATOMIQUE DES CALCIFICATIONS

→ d'emblée ou bail out ?

recos ESC 2018

16.1.5 Devices for lesion preparation

Lesion preparation is critical for successful PCI. In addition to plain balloon angioplasty (with standard or non-compliant balloons), cutting or scoring balloon angioplasty or rotational atherectomy may be required in selected lesions—particularly those with heavy calcification—in order to adequately dilate lesions prior to stent implantation. However, studies investigating the systematic use of these adjunctive technologies, such as rotational atherectomy, have failed to show clear clinical benefit.⁶⁰²

Rotablation is recommended for preparation of heavily calcified or severely fibrotic lesions that cannot be crossed by a balloon or adequately dilated before planned stenting.

I

C

d'emblée....!

Comparison of bailout and planned rotational atherectomy for severe coronary calcified lesions

Cao C. BMC Cardiovascular Disorders 2020

Short-term and long-term outcomes of bailout versus planned coronary rotational atherectomy

Qj Z. Rev. Cardiovasc. Med. 2020

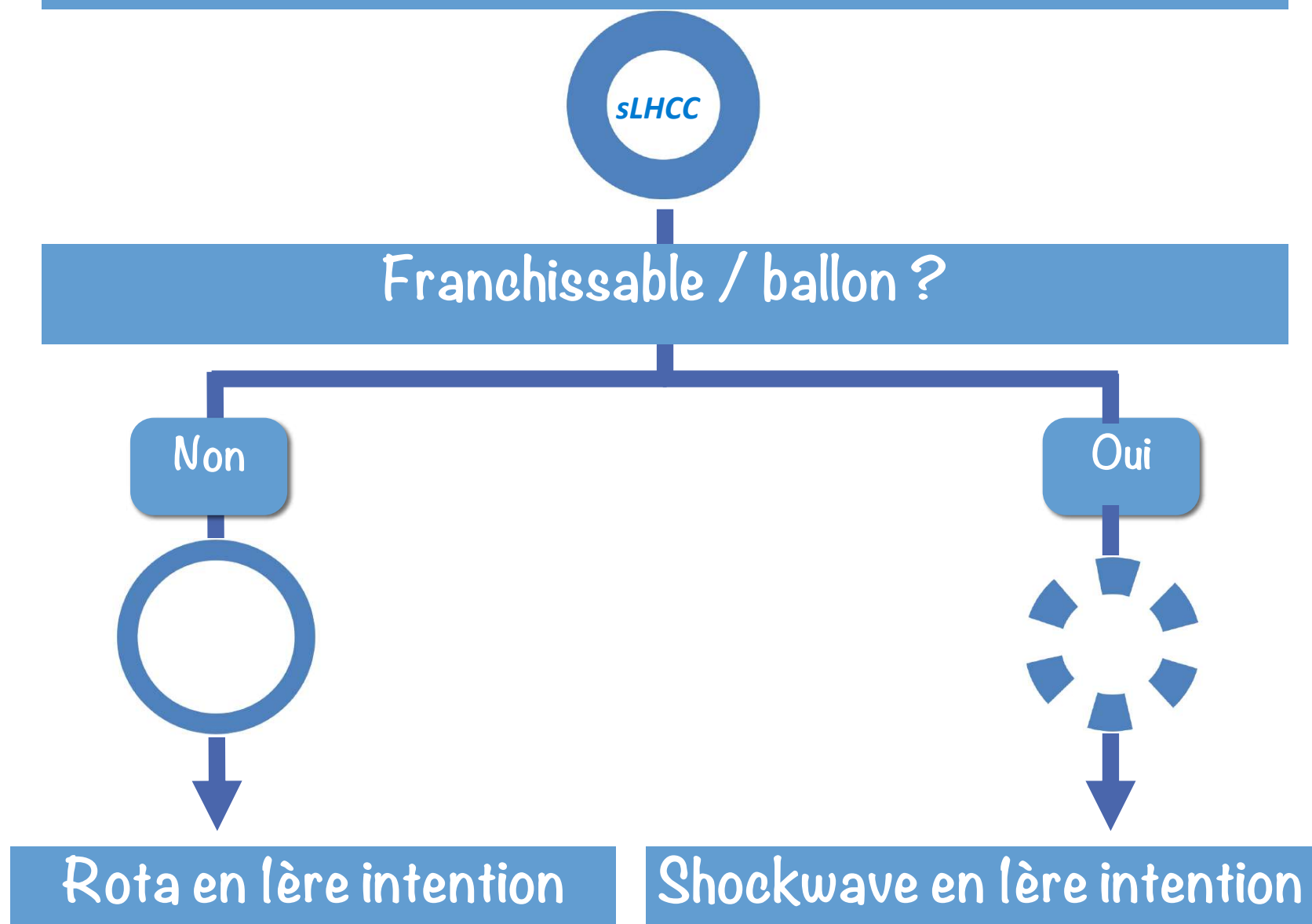
+ de succès
moins de complications
moins de rayons
moins d'iode
moins de temps

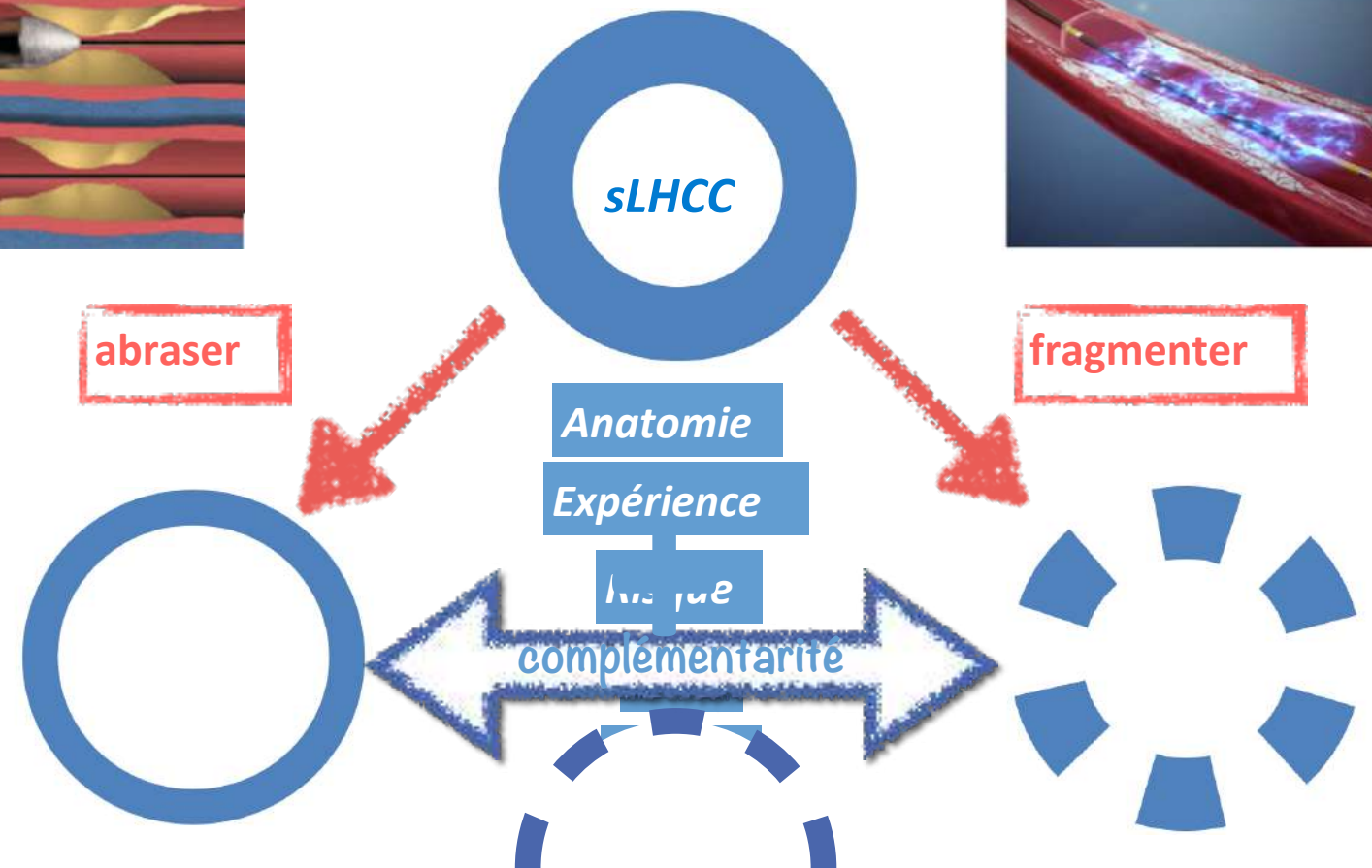
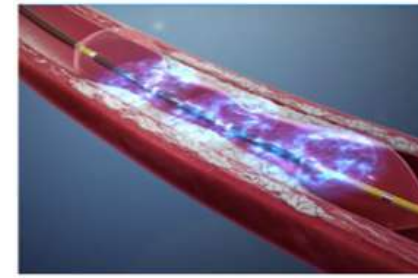
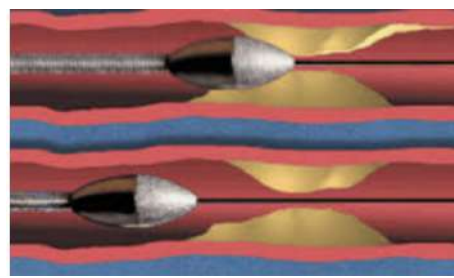
ns sur mortalité et MACE

PRÉREQUIS 2 :

LE CARACTERE
FRANCHISSABLE DE LA
CALCIFICATION

→ Dans quel cas s'orienter
vers l'une ou vers l'autre technique?





2 techniques qu'il est indispensable de maîtriser et posséder
dans la "caisse à outils" de son cath'lab



approche hybride "Rotawave"
rare !pour surfer les calcifications les plus hostiles...
abriter puis fragmenter OU fragmenter puis abriter...

CONCLUSION