HIGH TECH MARSEILLE

28-30 JANVIER 2026

MARSEILLE
PALAIS DU PHARO

Faculté des sciences médicales et paramédicales
Aix*Marseille Université

Aix*Marseille université

J' aurais aimé

qu' on m' en parle avant…

« Un nodule calcaire coronaire »

Pierre Deharo
CHU La Timone, Marseille, France

CONFLITS D'INTÉRÊTS

Consultant Abbott & Boston Scientific

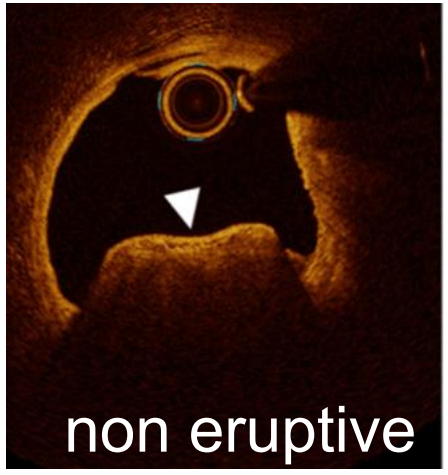
J’ aurais aimé qu on m’ en parle avant…
« Nodule calcaire coronaire»

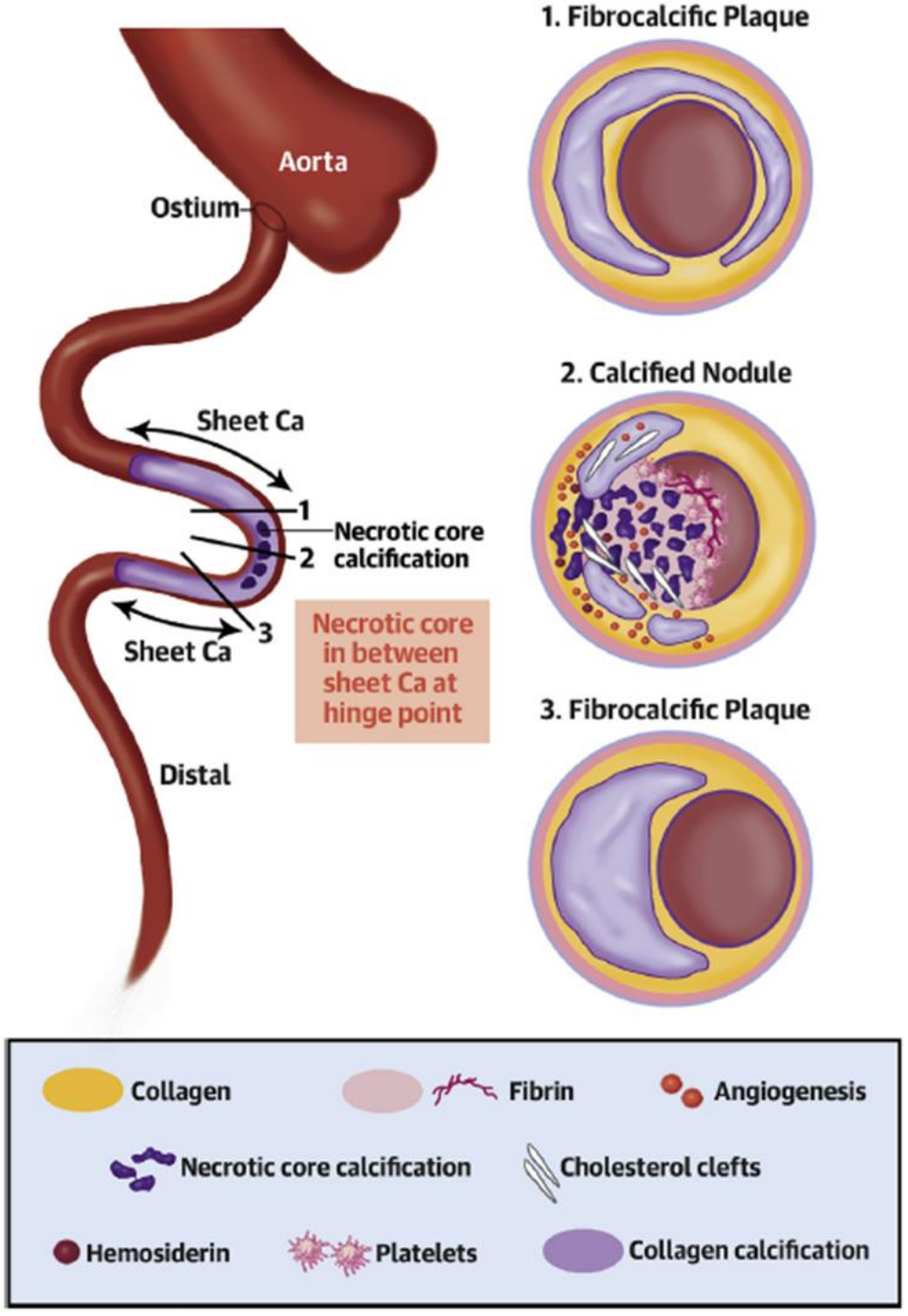
1, How to identify?

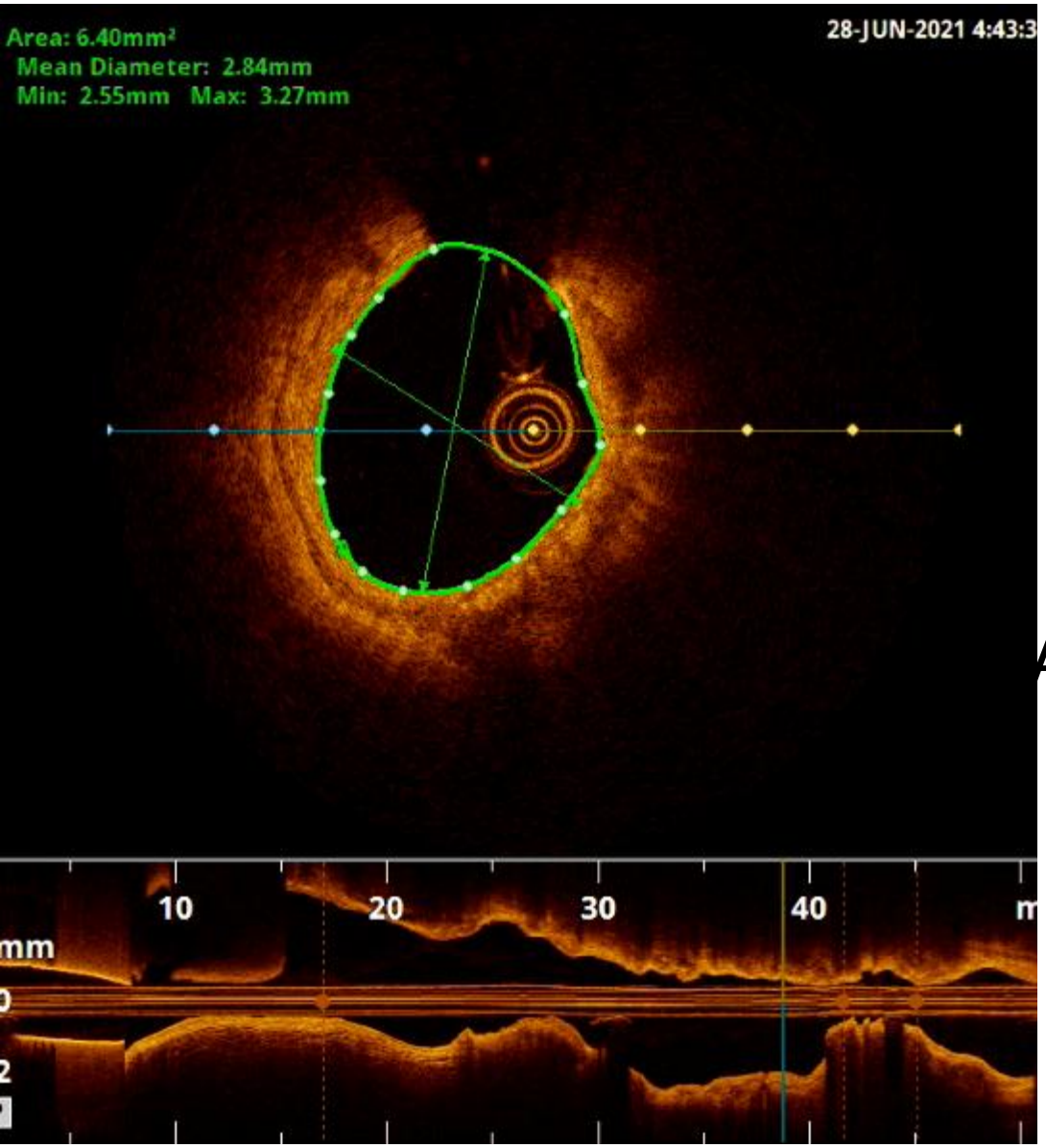
2, How to evaluate?

3, How to treat?


eruptive


non eruptive


1. Fibrocalcific Plaque
Aorta
Ostium
2. Calcified Nodule
Sheet Ca
1
Necrotic core calcification
2
3
Sheet Ca
Necrotic core in between sheet Ca at hinge point
3. Fibrocalcific Plaque
Distal
Collagen
Fibrin
Angiogenesis
Necrotic core calcification
Cholesterol clefts
Hemosiderin
Platelets
Collagen calcification

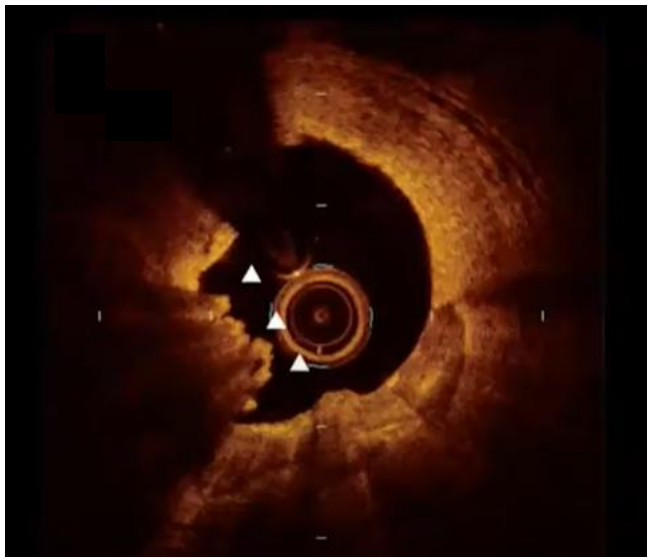


Heavily calcified lesion

Convex *protrusion* into lumen

Irregular luminal surface

Associated with platelet & fibrin rich *thrombus*



Risk

Per procedural

Stent underexpansion (ISR and ST)

Cardiac death & MI ↑

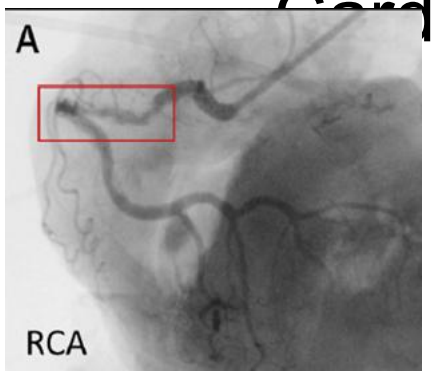
Mechanisms

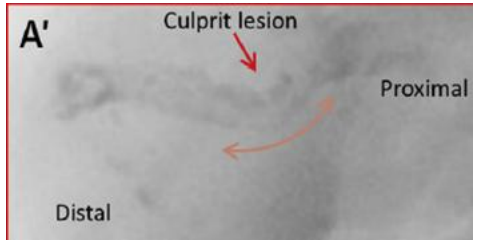
Stent underexpansion (asymetry)

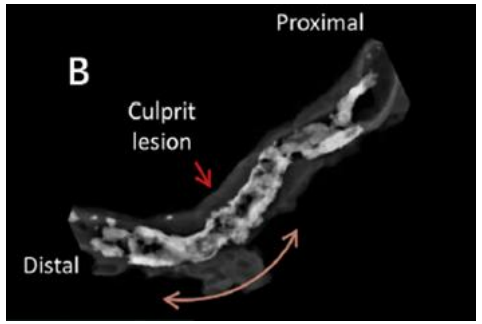
Malapposition, fractured polymer disruption

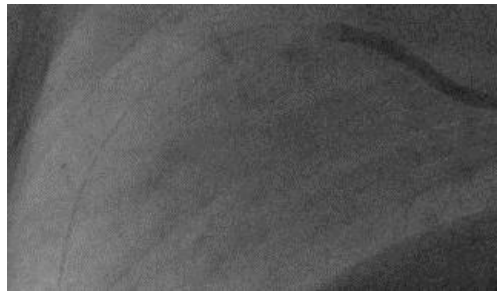
Edge dissection (Ca2+)

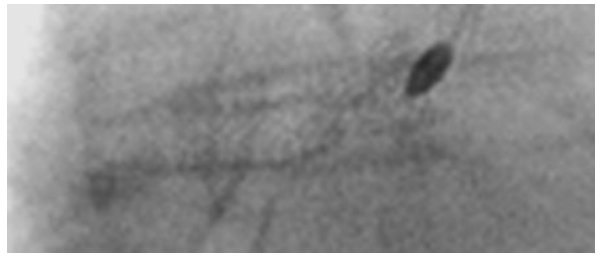
Protrusion CN with struts

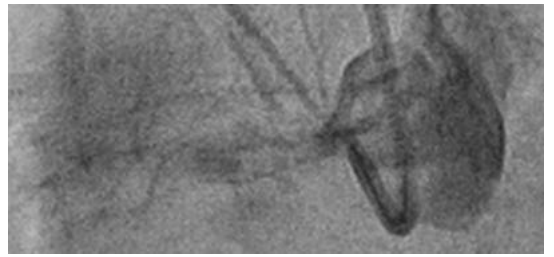












How to identify & how to evaluate?

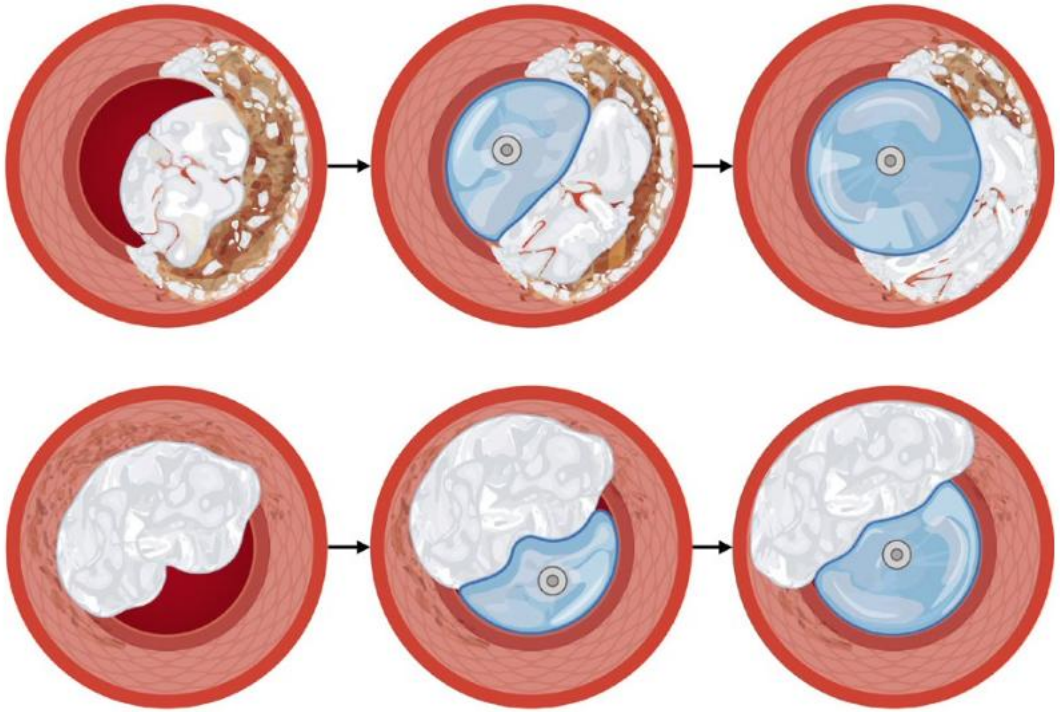
IC imaging uncrossable
Angio only

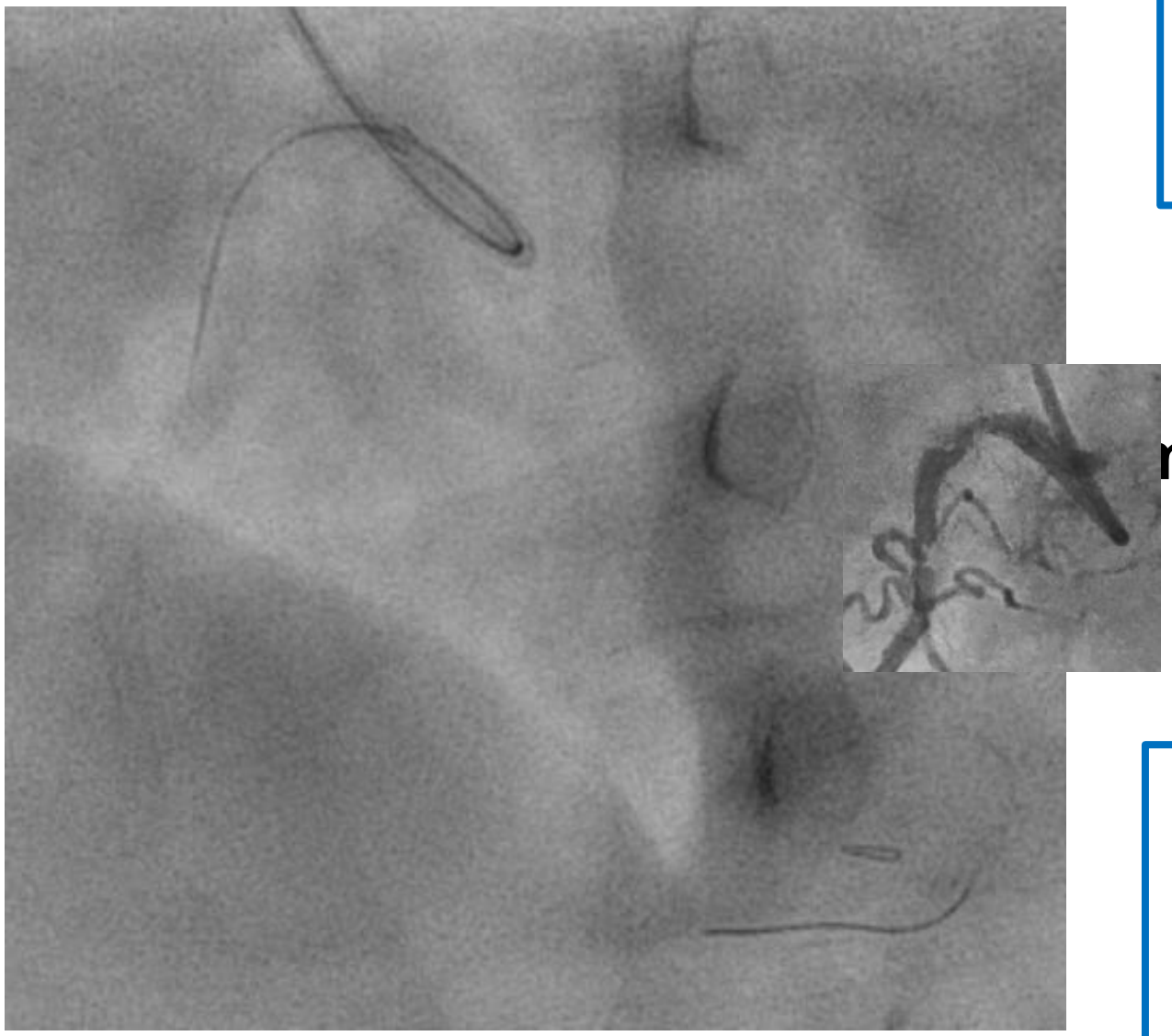
CT?

How to treat !!??

How to identify & how to evaluate?

Deformability ?





How to treat?

Rotablator

Concentrically spinning diamond burr

Front cutting

Ablation inleastic calcified material relative to vascular tissue

Suceptible to Wire Biais

Orbital

Eccentrically spinning diamond crown => elliptical expansion

Front&Back cutting

How to treat?

IVL therapy

Crack large sheets of calcium

Cutting / Scoring

Fragment large calcific collection

High pressure

Expand diametr

Orbital atherectomy

Eccentrically spinning diamond crown : elliptical expansion
Front&Back cutting

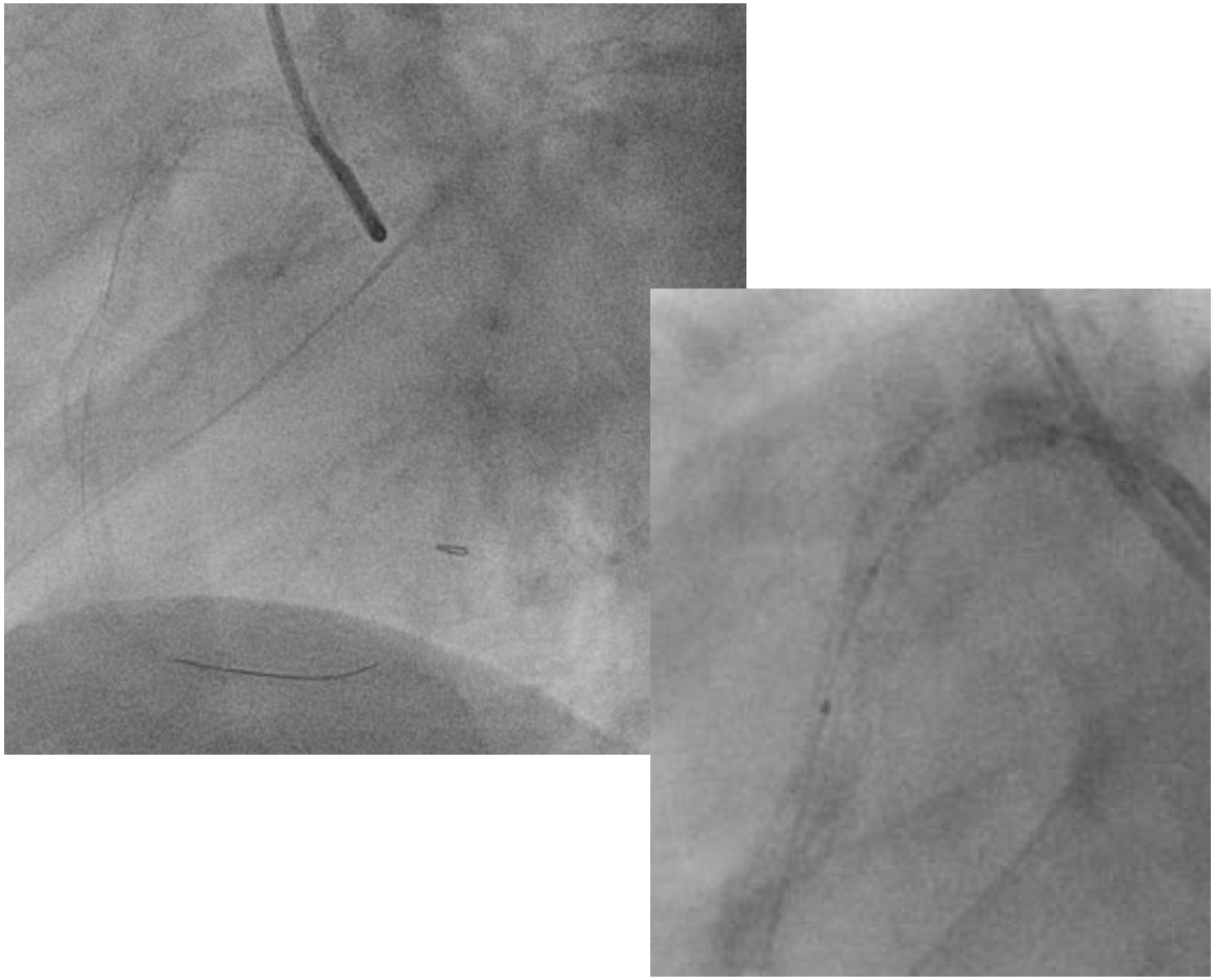
↓

IVL therapy

Crack large sheets of calcium

IVI post IVL & DES

How to treat?



How to treat?

Orbital atherectomy

Eccentrically spinning diamond crown : elliptical expansion
Front&Back cutting

↓

IVL therapy

Crack large sheets of calcium

IVI post IVL & DES

↓

High pressure NC

Expand diametr

+1 PAPYRUS

Orbital

Eccentrically spinning diamond crown : elliptical expansion Front&Back cutting

↓

IVL therapy

Crack large sheets of calcium

↓

High pressure

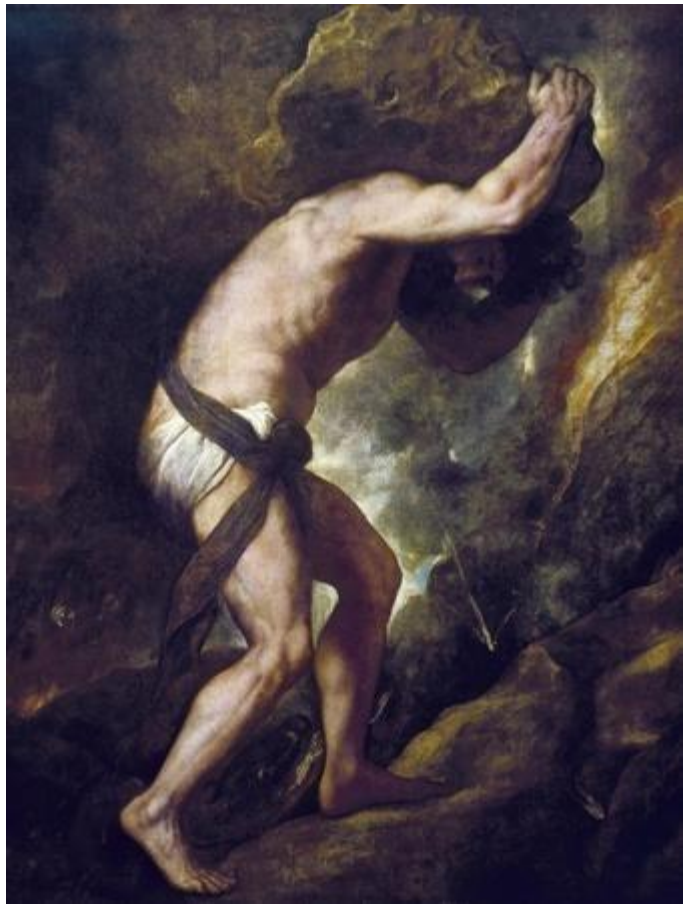
Expand diametr

Conclusion

Rare scenario but increasingly recognized

Advance age, CKD, diabetes

Complicate tretament strategy



Tiziano Vecelli, Sisyphus, 1548

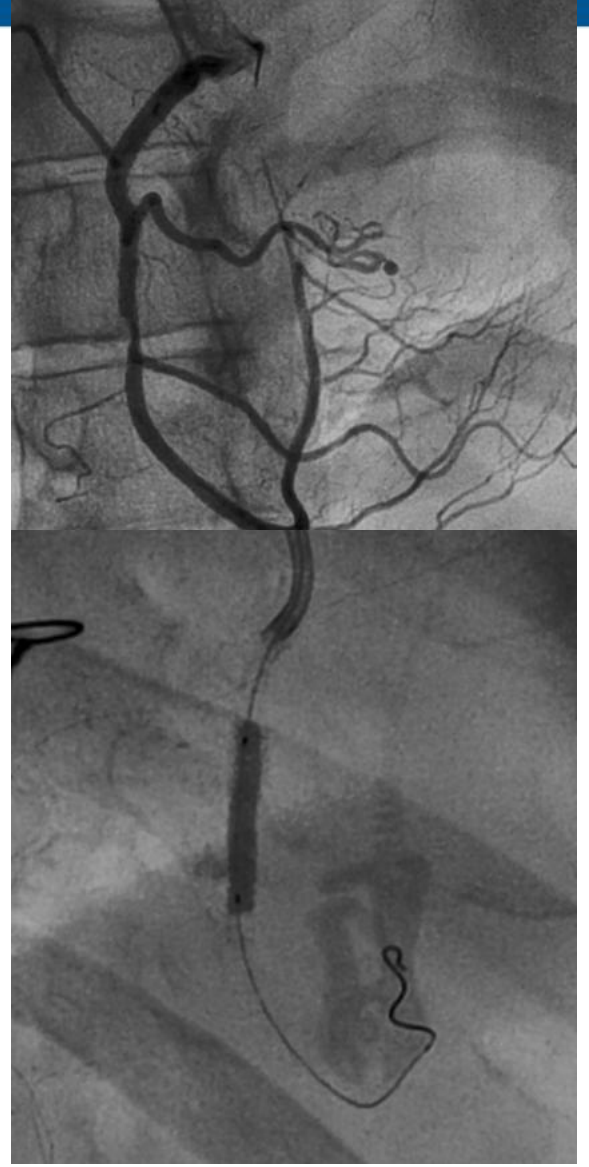
Conclusion

Rare scenario but increasingly recognized

Advance age, CKD, diabetes

Complicate tretament strategy

Combine technics



Conclusion

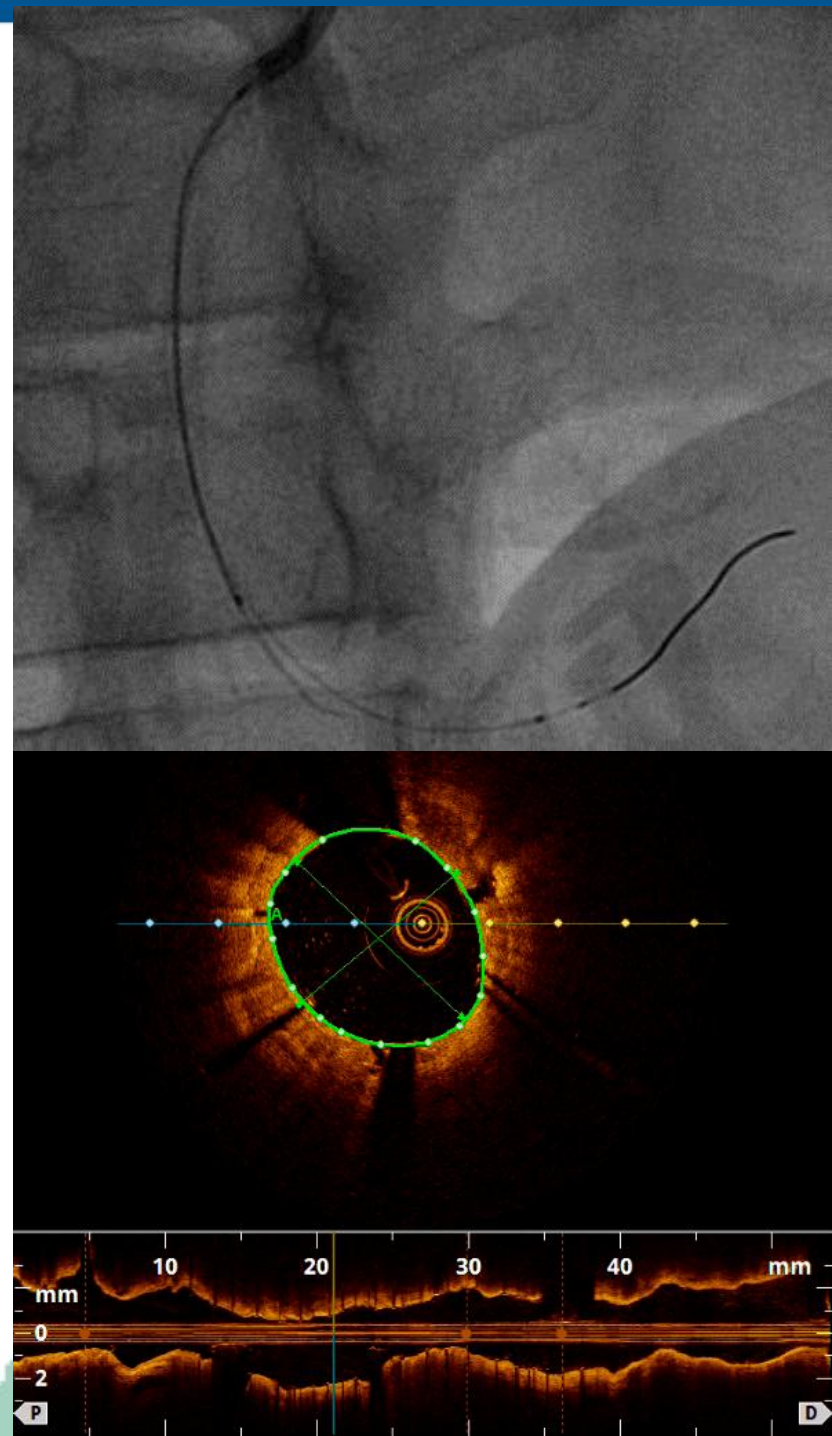
Rare scenario but increasingly recognized

Advance age, CKD, diabetes

Complicate tretament strategy

Combine technics

Active area of research for treatment algorithm



Conclusion

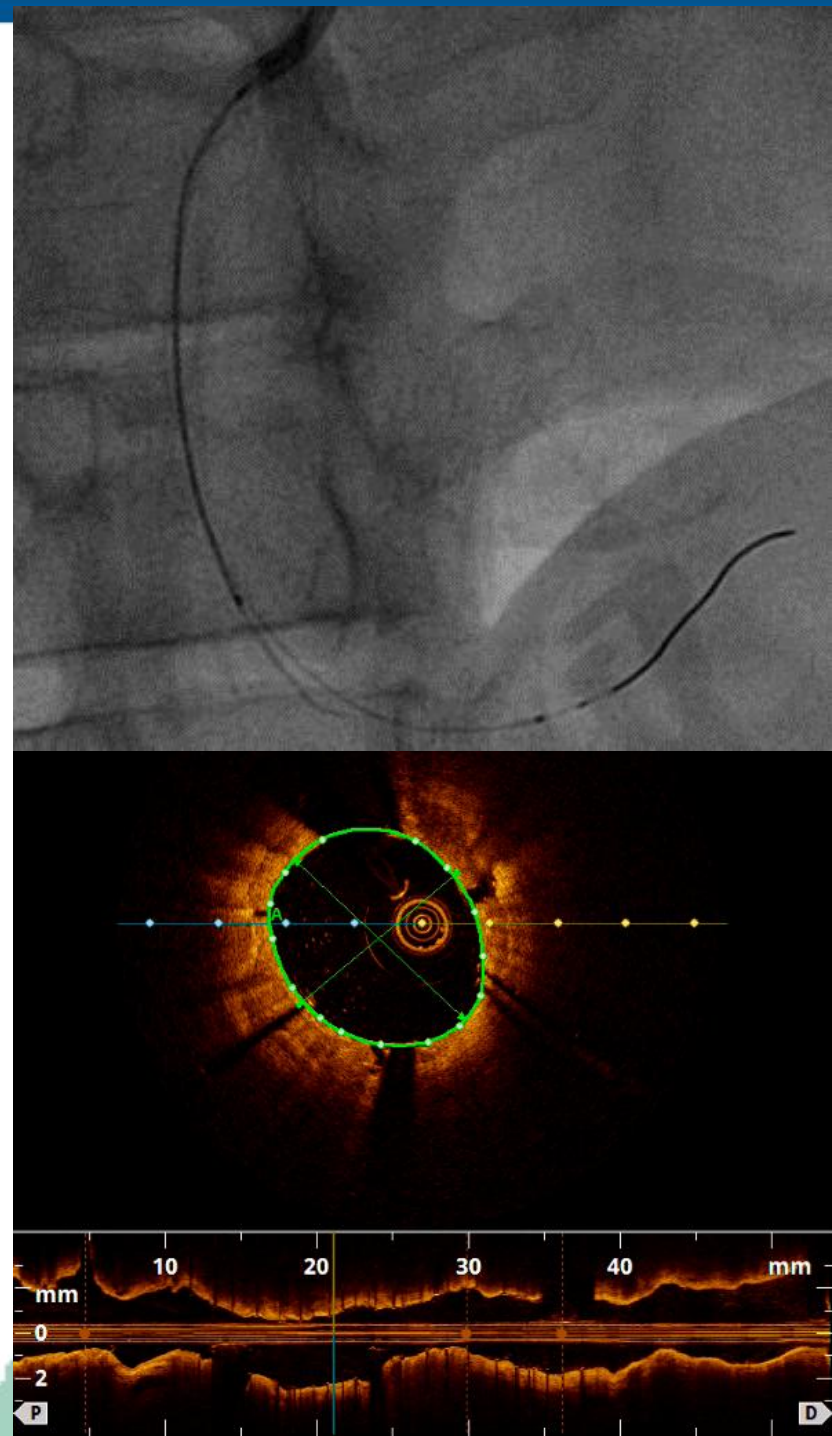
IV imaging may help

Atherectomy low threshold

OA: number passages > 5 & high speed

RA: upgrade ratio to 0.6~0.7 & consider ES wire

Ballon: (including IVL) 1:1 ratio



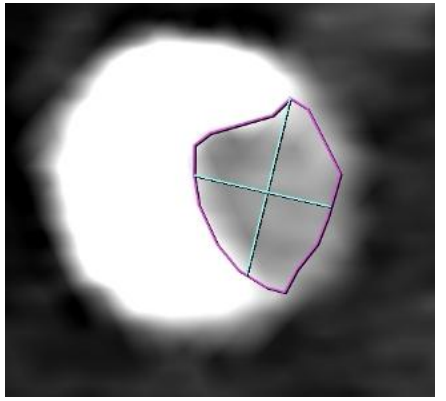
Conclusion

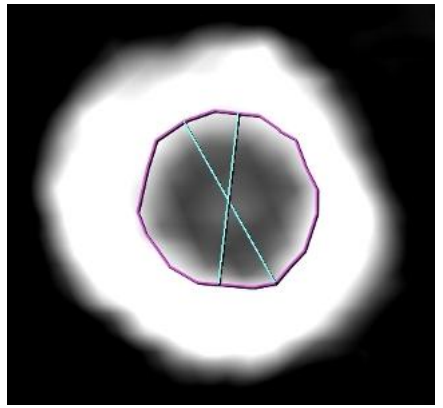
2005 TAVI → Cardiologist had to learn CT → 2025 TAVI PCI-like

How to identify & How to evaluate ?

Frequent IC uncrossable

Modern approach based on CT





Plan de vol « upfront »

2025 PCI → Cardiologist had to learn CT ?? → Optimize PCI

Potentially associated with IC imaging per procedural

Faculté des sciences médicales et paramédicales
Aix*Marseille Université

Aix*Marseille université

Thanks for your attention

AP HM
Assistance Publique Hôpitaux de Marseille

UMR MD2

euro 4C

C2VN Marseille
Center for CardioVascular and Nutrition research

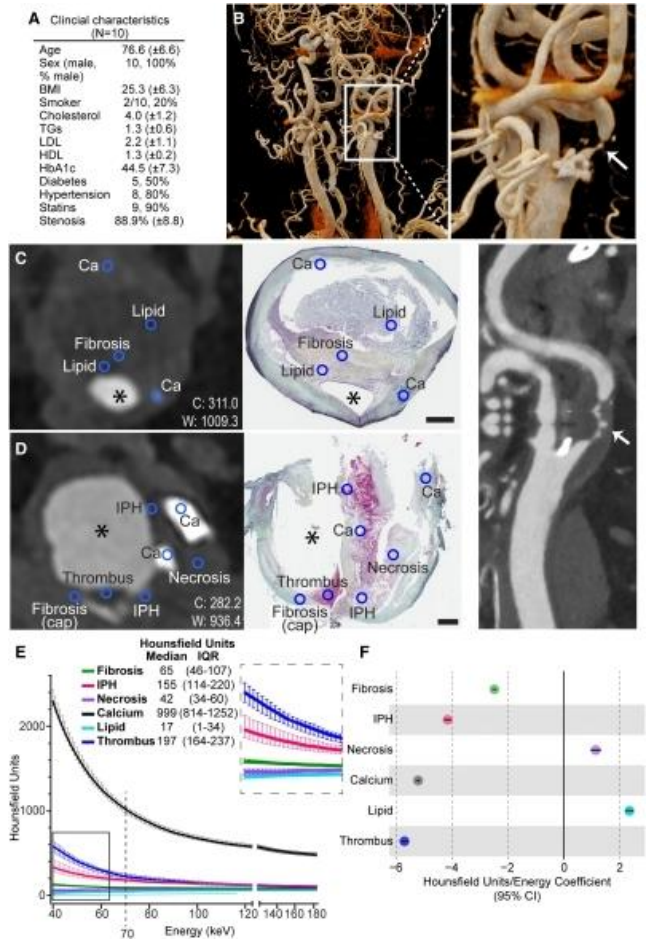
Secondary Outcomes

	OPN NCB (n=139)	IVL (n=139)	95%CI	p-value
Acute procedural success (n, %) *	137 (98.6)	135 (97.1)	1.015 (0.800-1.287)	0.903
Procedural success (n, %)	127 (92.03)	118 (86.13)	0.579 (0.276-1.2170	0.149
Strategy success (n, %)	137 (98.6)	137 (98.6)	1.000 (0.789-1.267)	0.999
Final stent Expansion ≥80% (n, %)	94 (68.1)	94 (68.6)	0.993 (0.746-1.321)	0.960
Final stent Expansion ≥90% (n, %)	50 (36.2)	47 (34.3)	0.978 (0.729-1.312)	0.881
Minimum Stent Area (mm2)	6.3±2.2	6.5±2.0		0.310
Target vessel failure (Composite: CV death or TVR or MI)	6 (4.3)	5 (3.6)	1.200 (0.366-3.932)	0.763
Target vessel failure or stent expansion <80 %	47 (33.8)	48 (34.8)	0.972 (0.650-1.453)	0.890

Use of OPN NCB, compared to IVL, resulted in similar rates of procedural and strategy success.

** Definition: Residual stenosis <30%, no flow-limiting dissection and/or no-reflow*

Figure 1 Comparison of the attenuation of distinct atherosclerotic plaque features scanned by photon-counting computed ...



Eur Heart J, Volume 46, Issue 46, 7 December 2025, Pages 5019–5023, https://doi.org/10.1093/eurheartj/ehaf960

HIGH TECH MARSEILLE

28-30 JANVIER 2026

MARSEILLE
PALAIS DU PHARO

Faculté des sciences médicales et paramédicales
Aix*Marseille Université

Aix*Marseille université

J' aurais aimé

qu' on m' en parle avant…

« Un nodule calcaire coronaire »

Pierre Deharo
CHU La Timone, Marseille, France