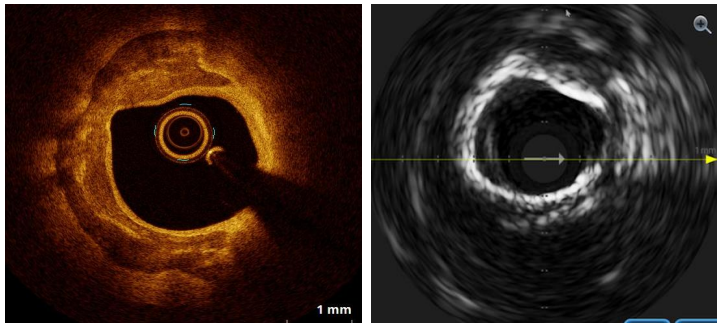
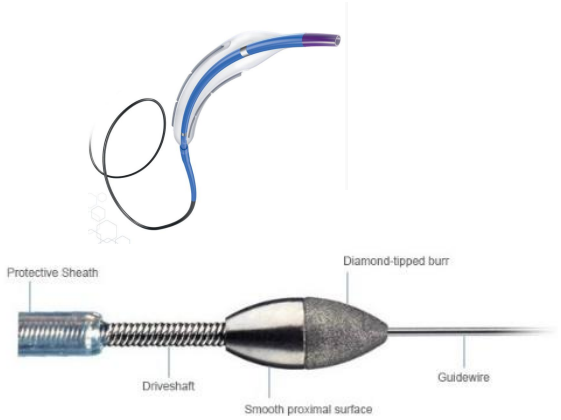
CSC 2024
CORONARY AND STRUCTURAL COURSE
CURSO CORONARIO Y ESTRUCTURAL
MADRID

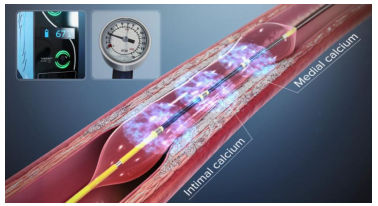
10º ANIVERSARIO
6, 7 y 8 NOVIEMBRE
HOTEL RIU PLAZA DE ESPAÑA

Actualización en modificación de placa

Nieves Gonzalo
Hospital Clínico San Carlos







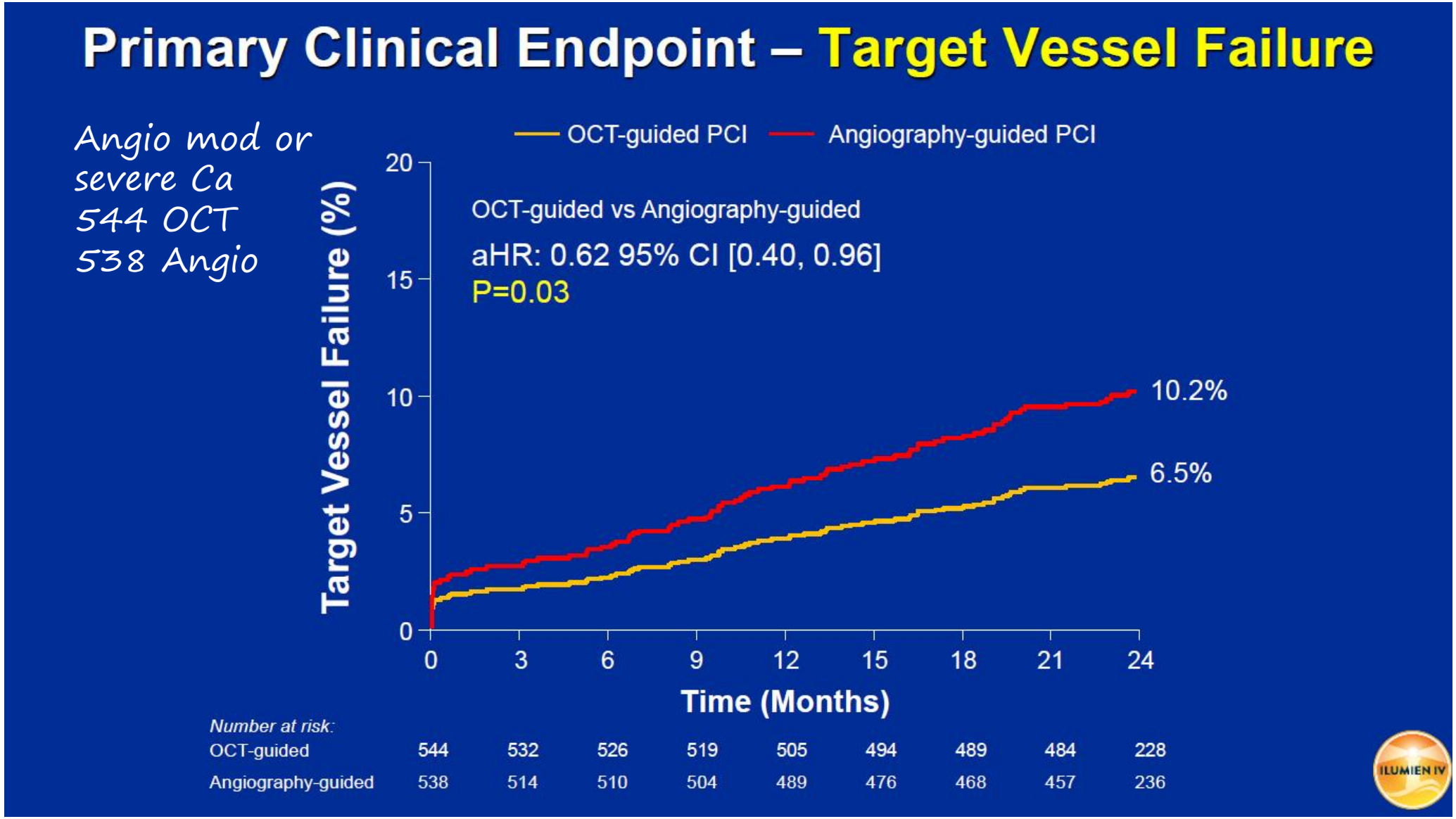
Imaging

Calcium

Tools

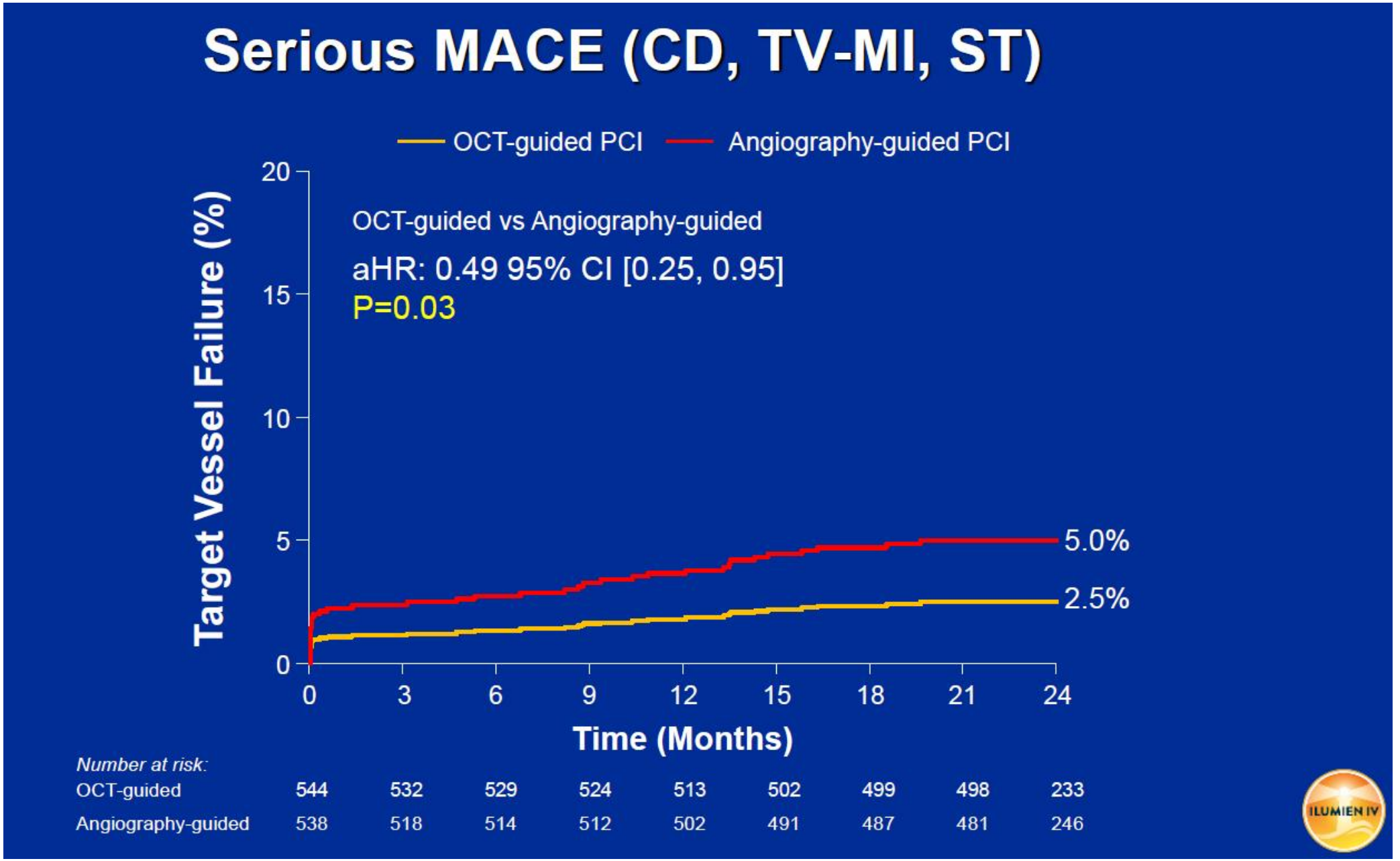
Strategy

OCT in calcified lesions



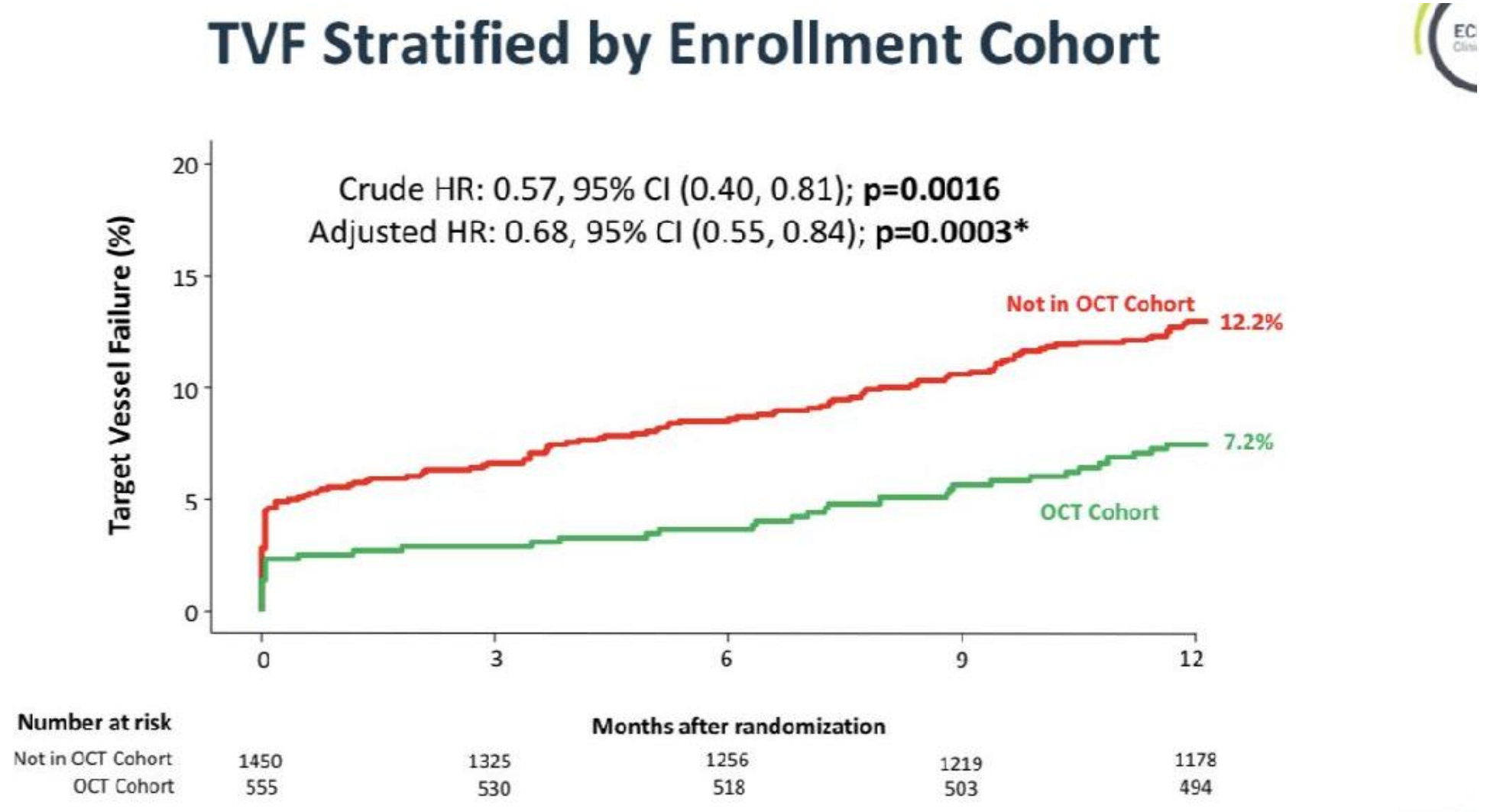
Ilumien IV subanalysis. Ali Z et al. TCT 2024

Serious MACE (CD, TV-MI, ST)



*Cardiac death, vessel related MI and stent thrombosis

OCT in calcified lesions



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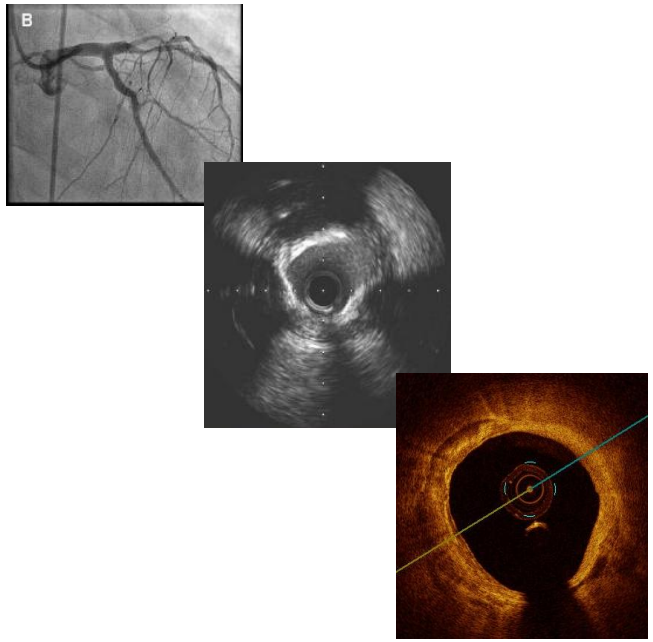
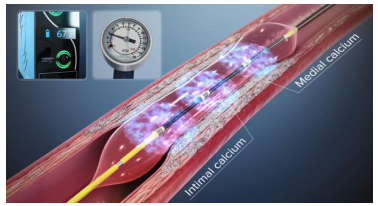
How can OCT support PCI in calcified lesions?.

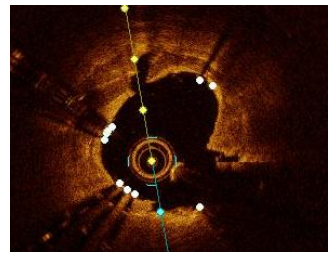
Calcium evaluation

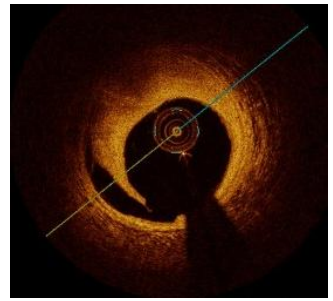
Plaque modification

Sizing and Optimization

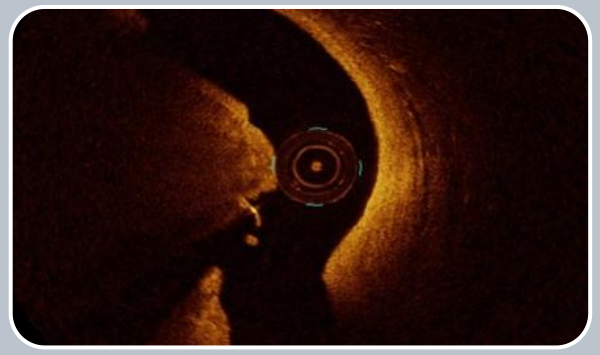


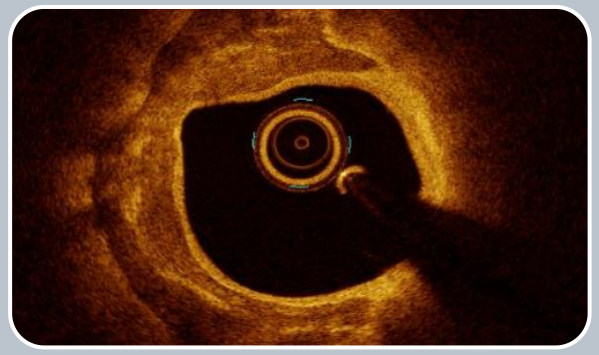


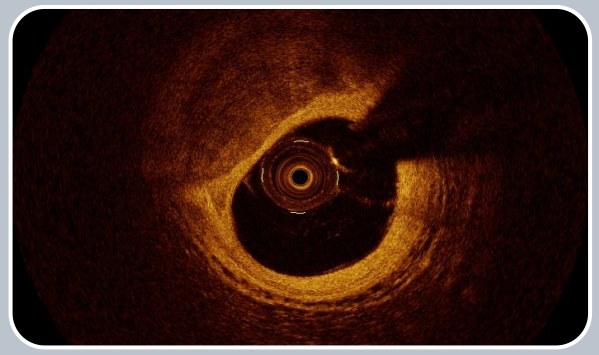




Calcium evaluation with OCT







Pattern

Nodular and not nodular calcium

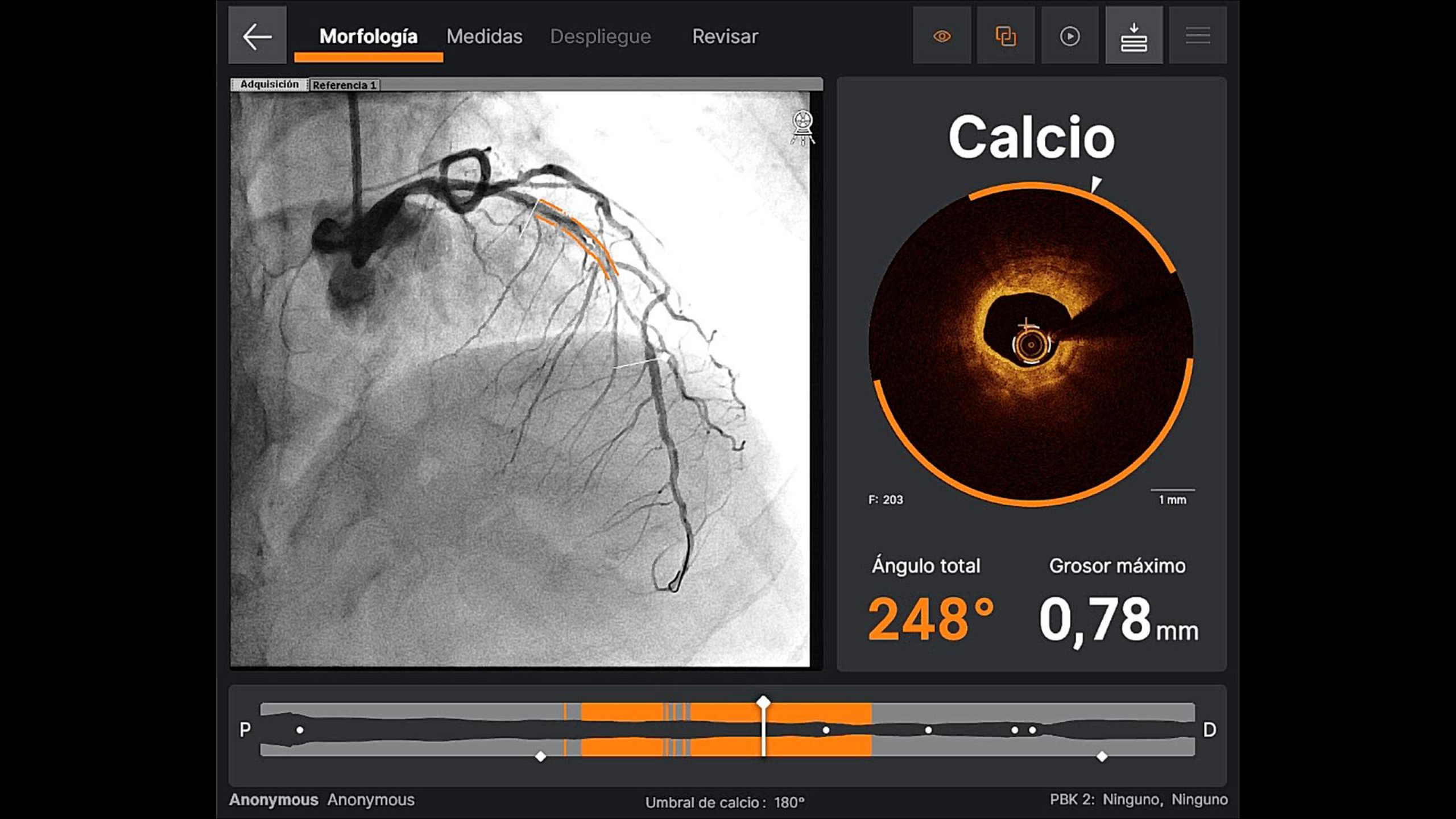
Quantification:

Lenght

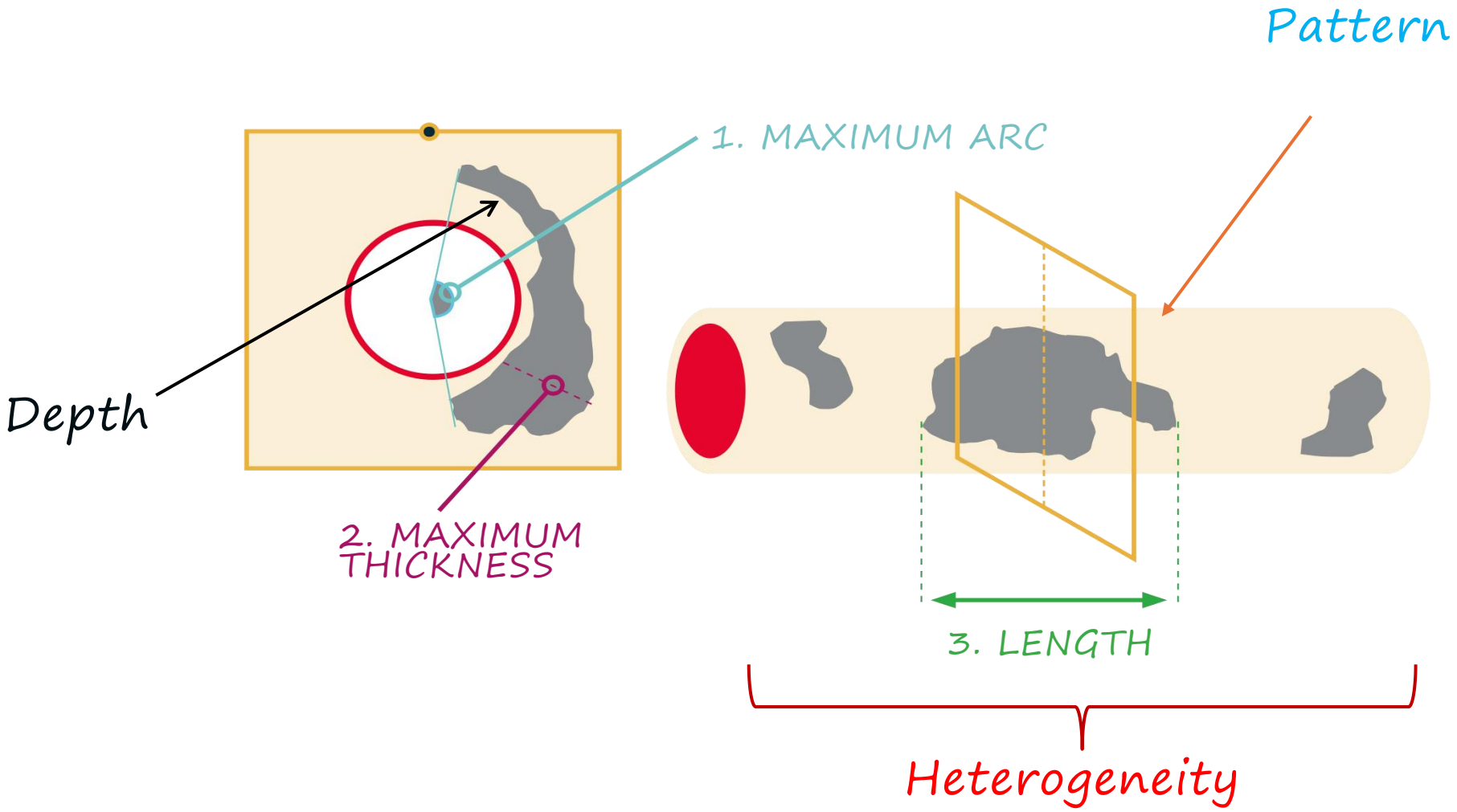
Arc

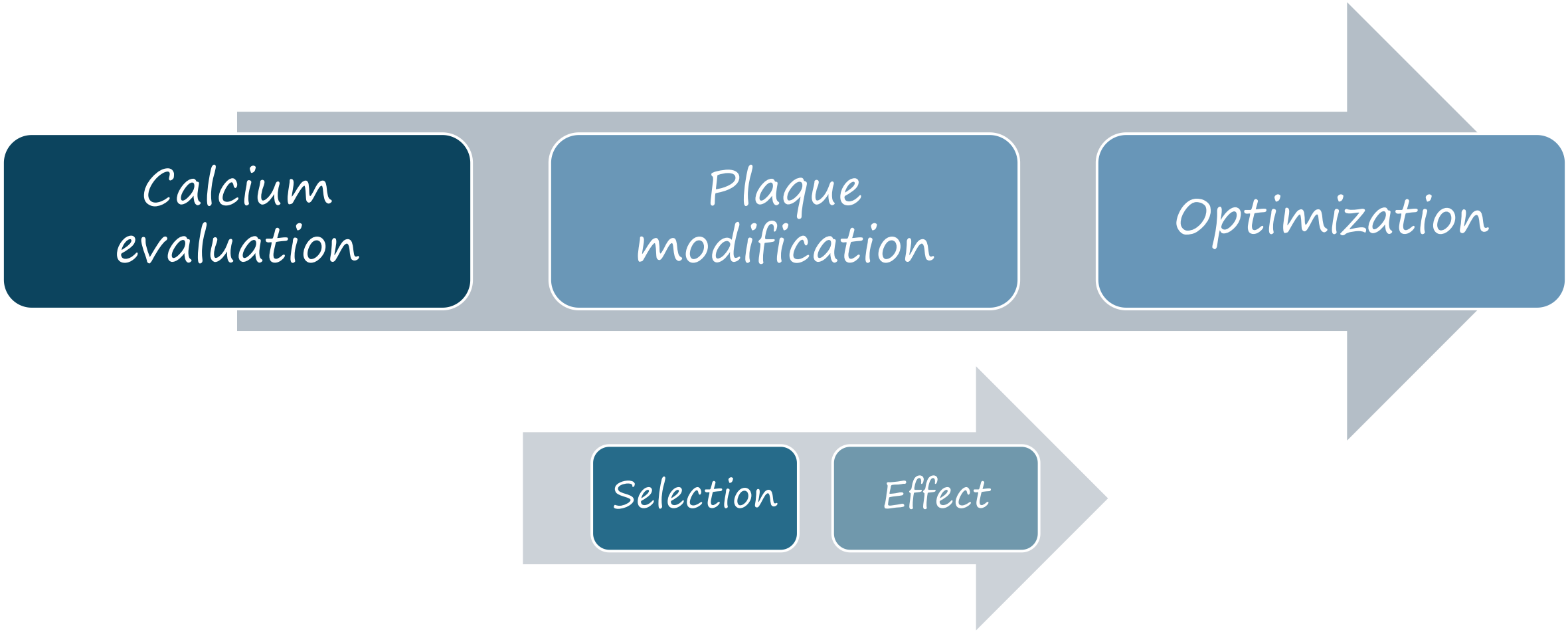
Thickness

Location (Depth)


Morfología
Medidas
Despliegue
Revisar
Adquisición
Referencia 1
Calcio
F: 203
1 mm
Ángulo total
248°
Grosor máximo
0,78 mm
P
D
Anonymous Anonymous
Umbral de calcio : 180°
PBK 2: Ninguno, Ninguno

Calcium evaluation



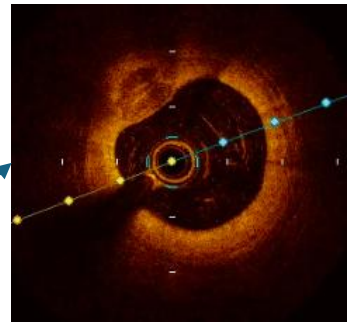

Calcium evaluation
Plaque modification
Optimization
Selection
Effect

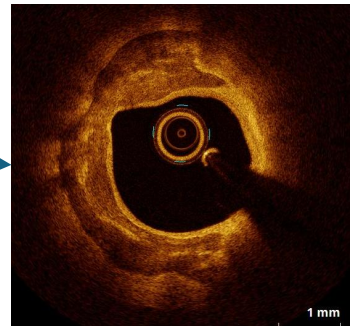
Uncrossable lesion

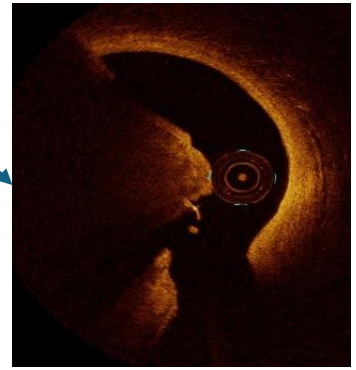
Atherectomy

Laser

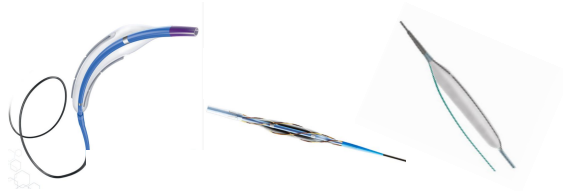
Crossable lesion



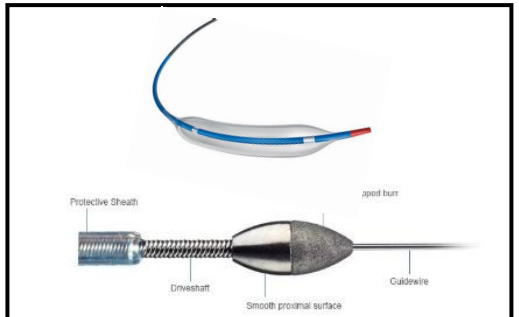




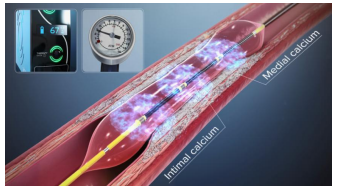
- Ca arc <180°
- Ca thickness <0.5mm
- Ca length <5mm



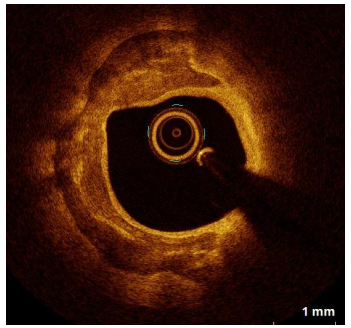
- Ca arc >180°
- Ca thickness >0.5mm
- Ca length >5mm



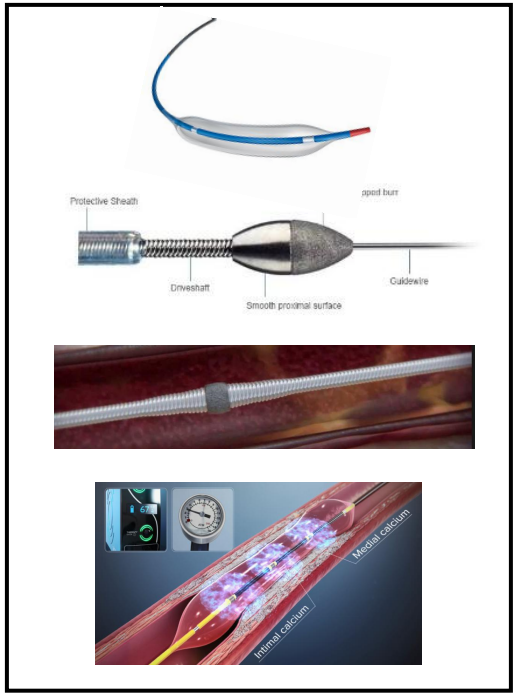
- Nodular calcium



Crossable lesion



- Ca arc >180
- Ca thickness >0.5mm
- Ca length >5mm



Lesion location
Response to balloon
Extension of the calcification
Depth of the calcium
Different patterns
Vessel size
Vessel tortuosity
Multivessel disease
Experience

Coronary OAS components

CORONARY GUIDE WIRE

- ViperWire Advance™ Guide Wire
- ViperWire Advance™ with Flex Tip Guide Wire

OAS PUMP

VIPERSLIDE™ LUBRICANT

ORBITAL ATHERECTOMY DEVICE (OAD)

- Features a 1.25 mm Classic Crown

All components are sold separately.
Images on file at Abbott.

Orbital Atherectomy Device (OAD)

6F GUIDE COMPATIBLE SALINE SHEATH

135 cm usable length

CROWN ADVANCER KNOB AND POWER ON/OFF BUTTON

7.5 cm axial travel

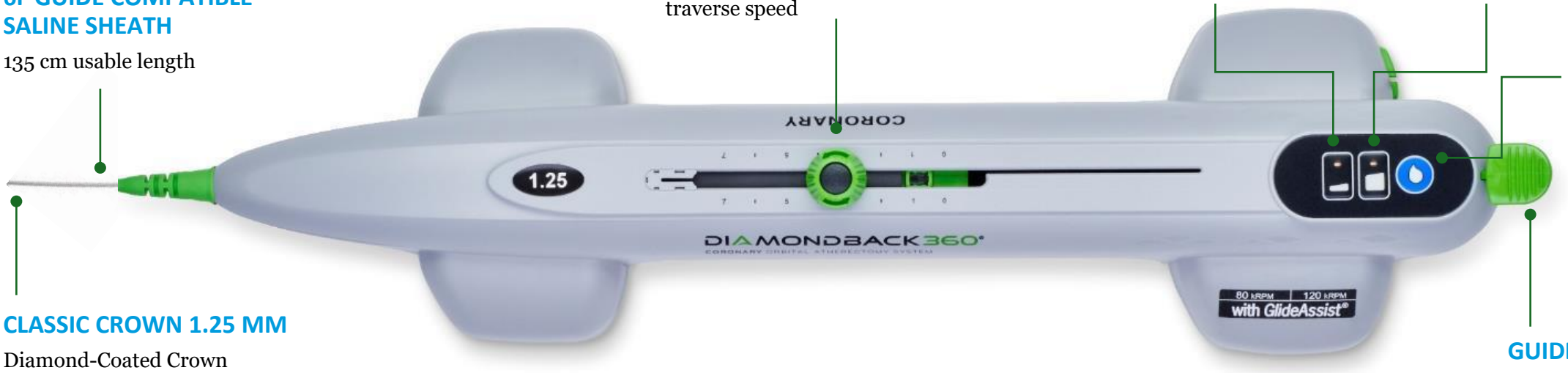
Recommend 1–3 mm/sec traverse speed

ON-HANDLE CONTROLS

Low Speed (80k rpm) and GlideAssist™ feature (5k rpm) modes

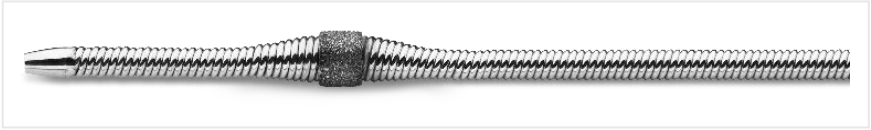
High Speed Mode (120k rpm)

Prime Button[1] *identical functionality to the control on pump*



CLASSIC CROWN 1.25 MM

Diamond-Coated Crown



GUIDE WIRE BRAKE

Keeps the wire from rotating or moving axially. The OAD will not rotate the crown if the brake is up.

1. Compare to the 1st generation device, which does not have a prime button. Images on file at Abbott.

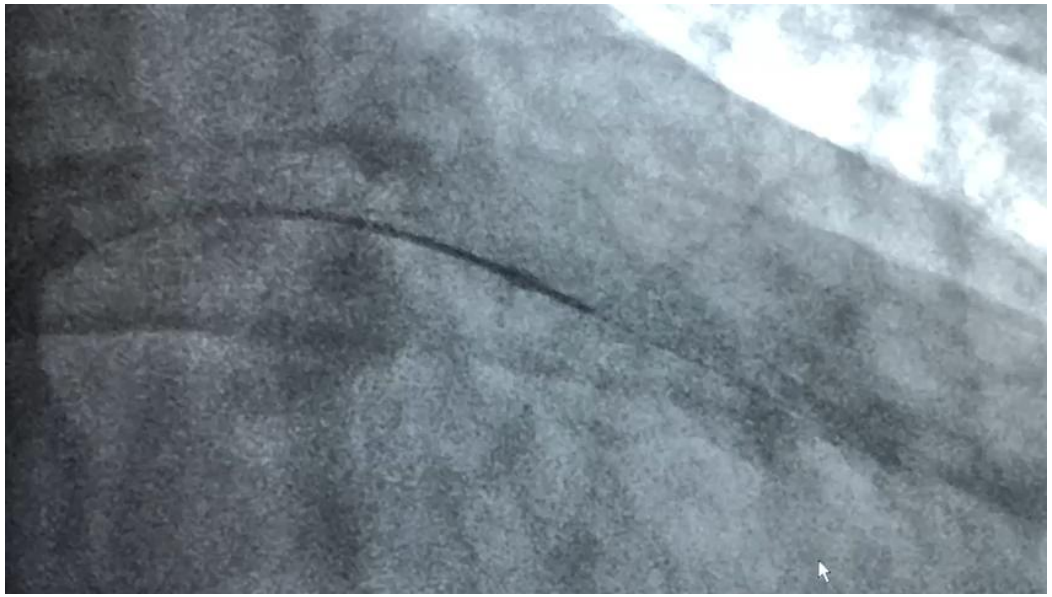
Crown motion

Keep the crown moving
when orbiting, keep the crown advancing and retracting

Target 1 to 3 mm/sec
traverse speed
(do not to exceed 10 mm/sec)

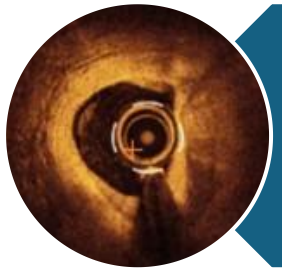
Maintain 1:1 motion
between crown and crown advancer knob

During procedure, watch the angiogram to verify that the crown is moving as expected.

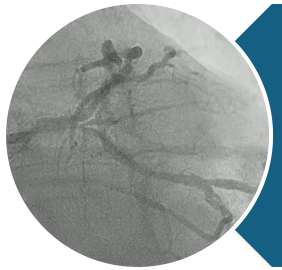


Images courtesy of Dr. Nirat Beohar, MD.
Results may vary.
A temporary pacing lead may be necessary when treating lesions in the right coronary and circumflex arteries due to the possible occurrence of electrophysiological alternations.

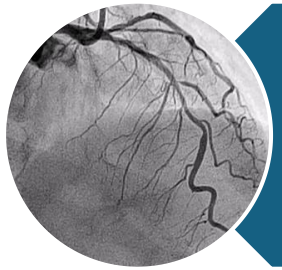
Orbital atherectomy



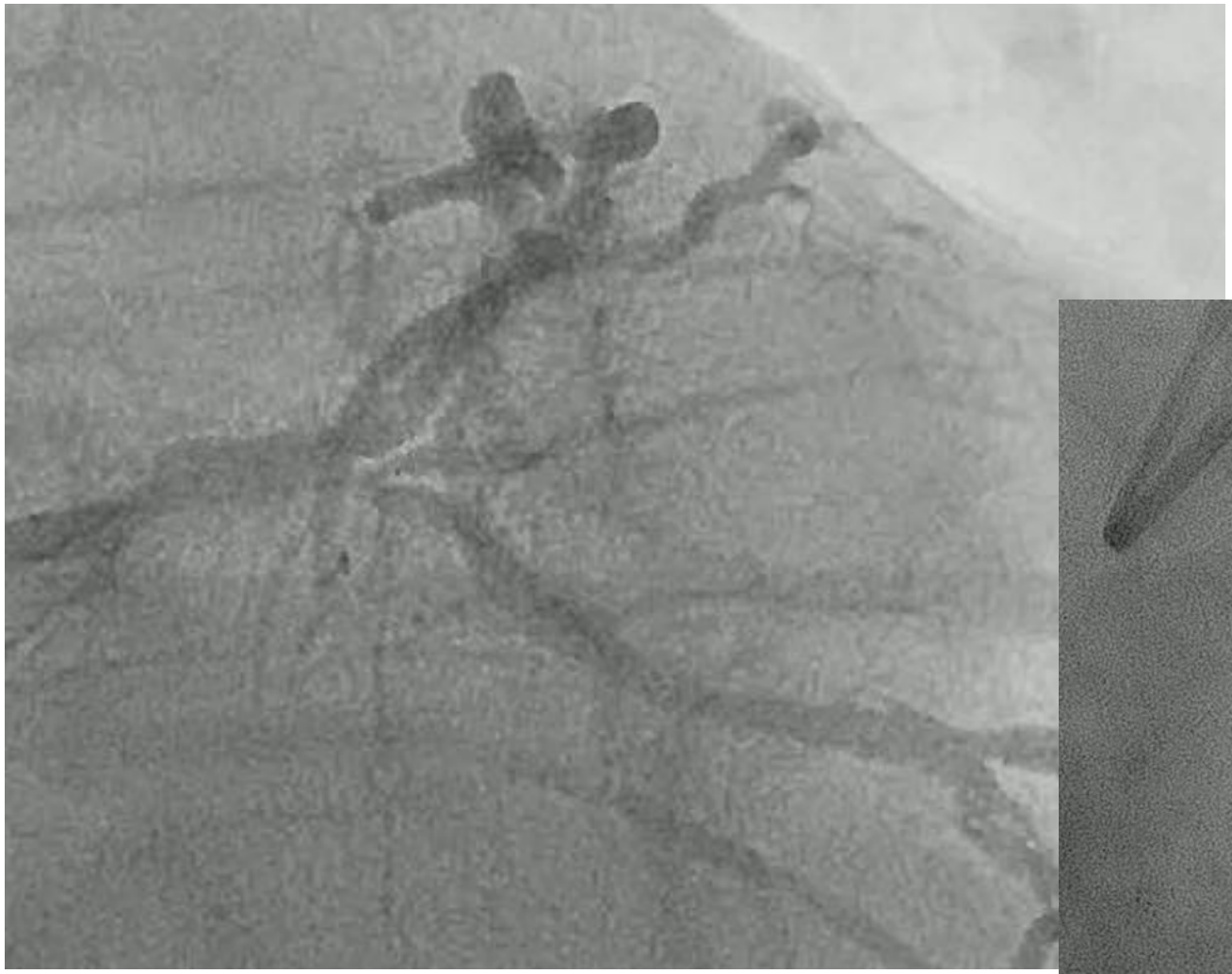
Multivessel disease (one size crown)

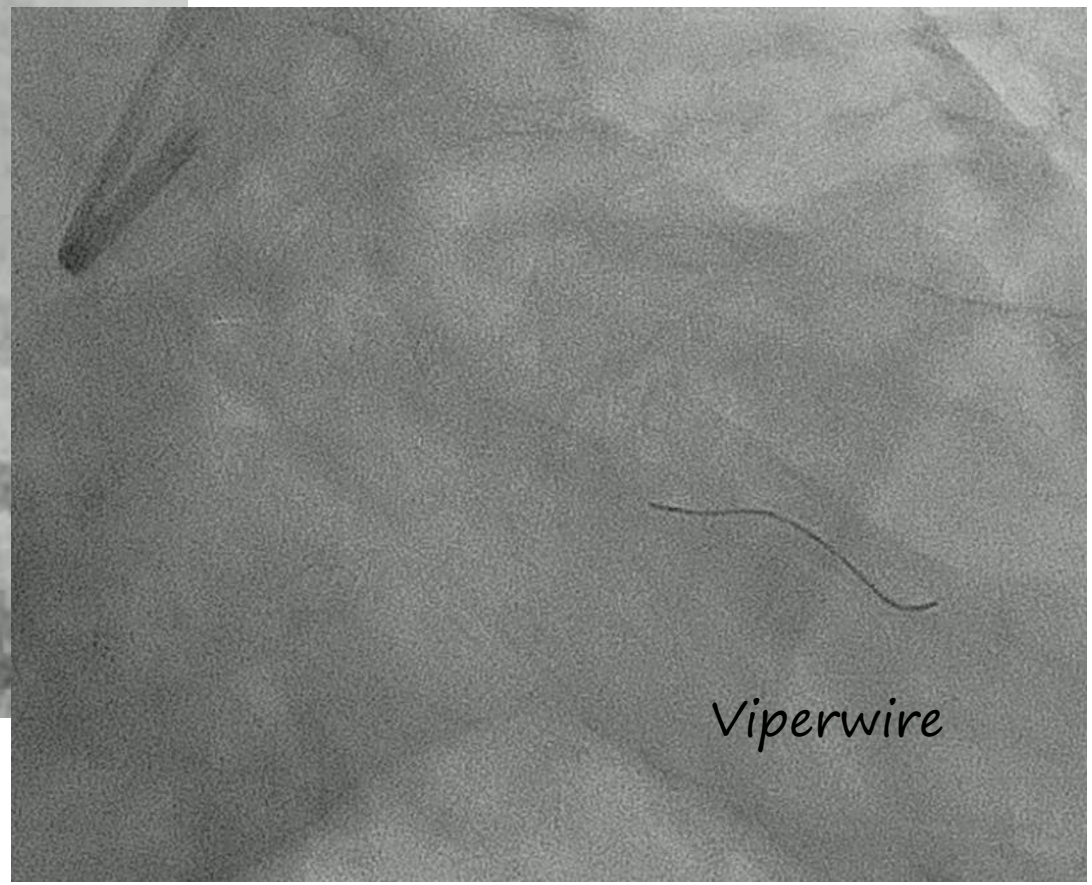


Unfavourable wire bias (ostial LCX, backwards atherectomy)

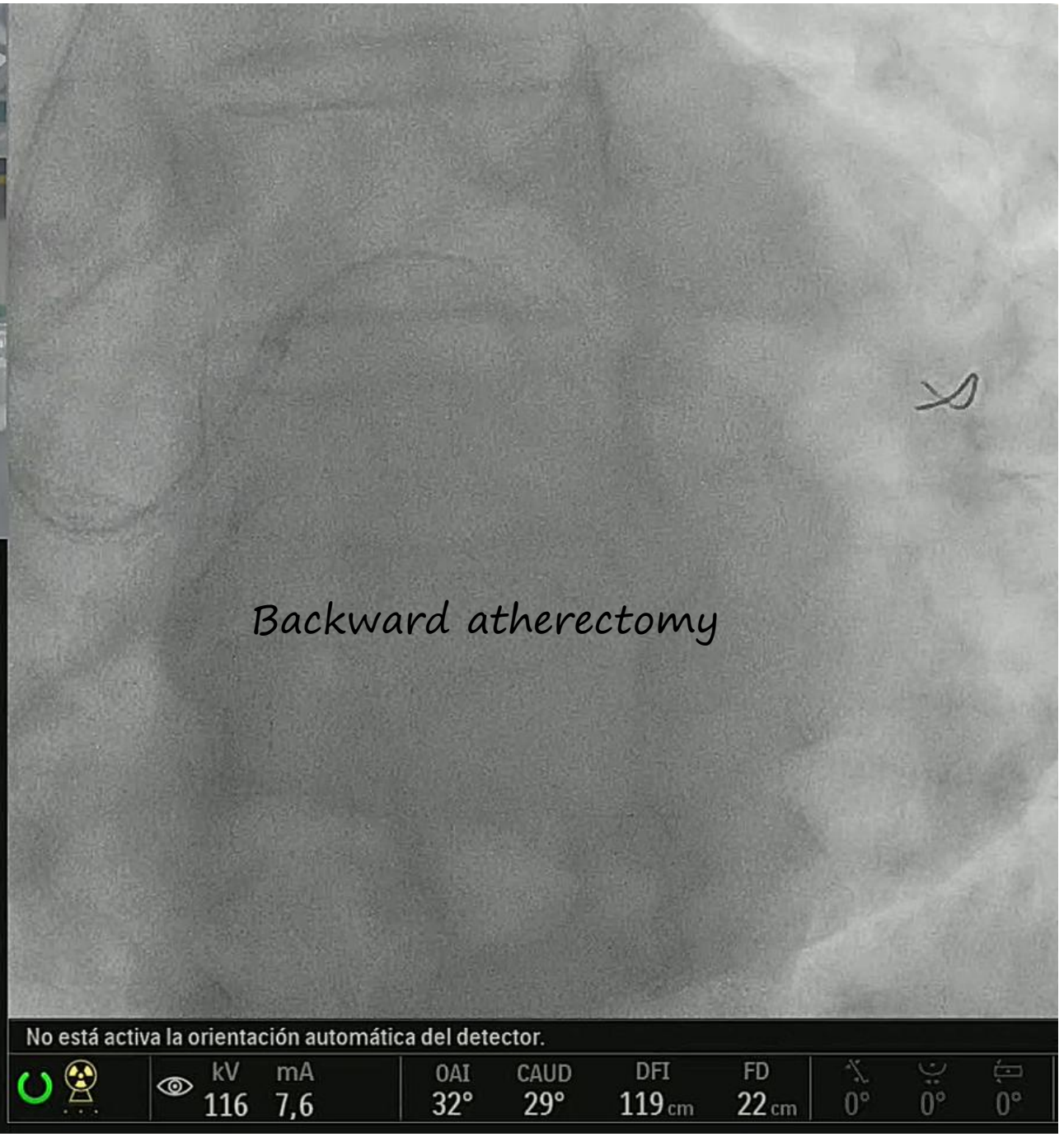


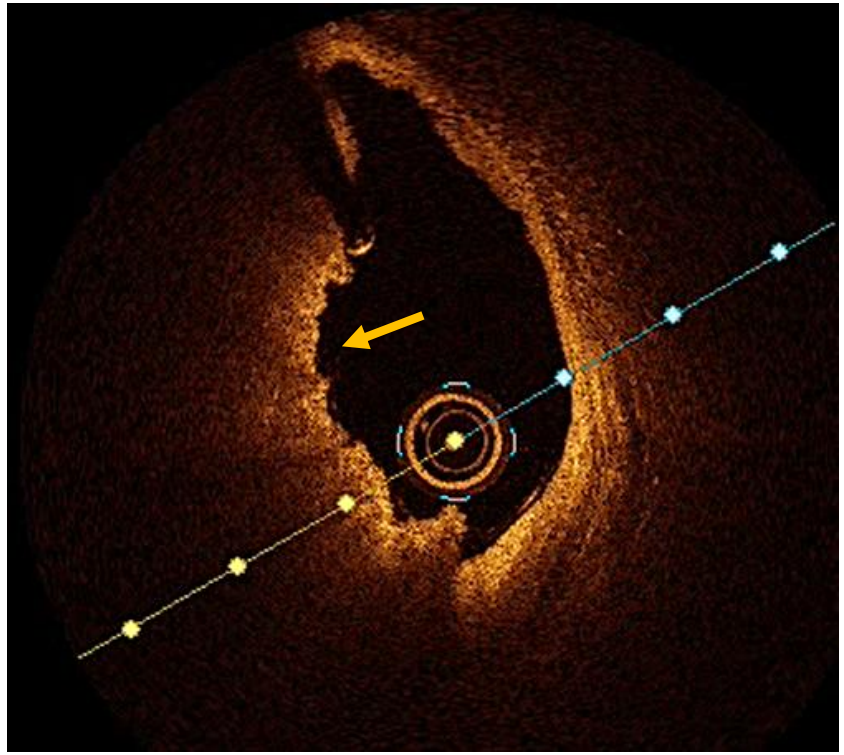
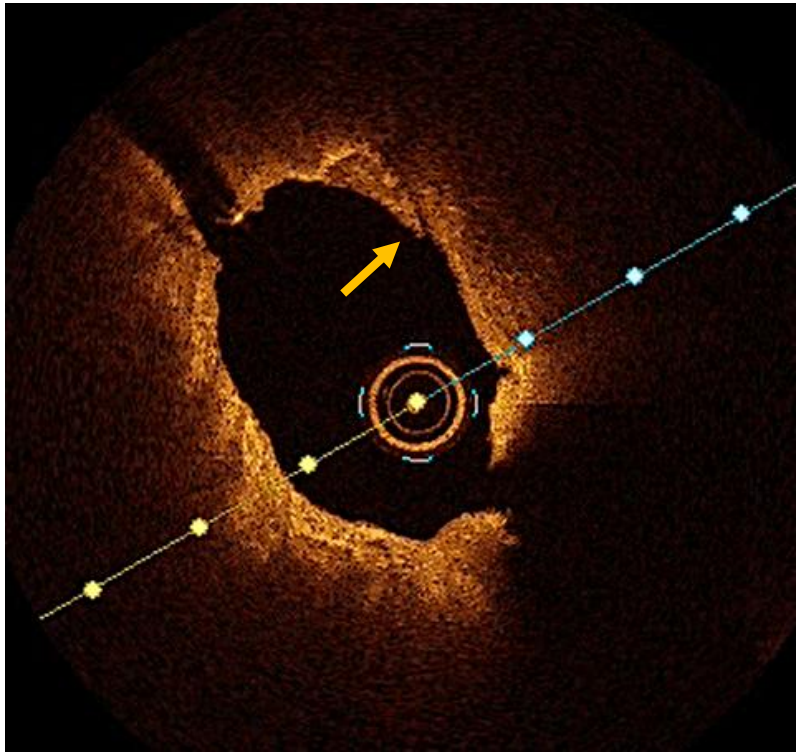
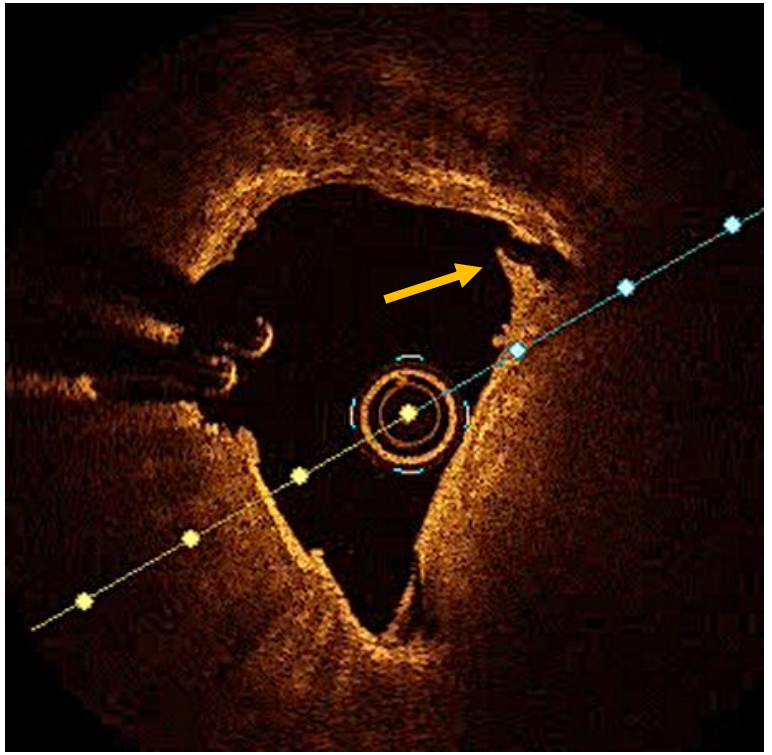
Diffuse long lesion with change in vessel-lumen size

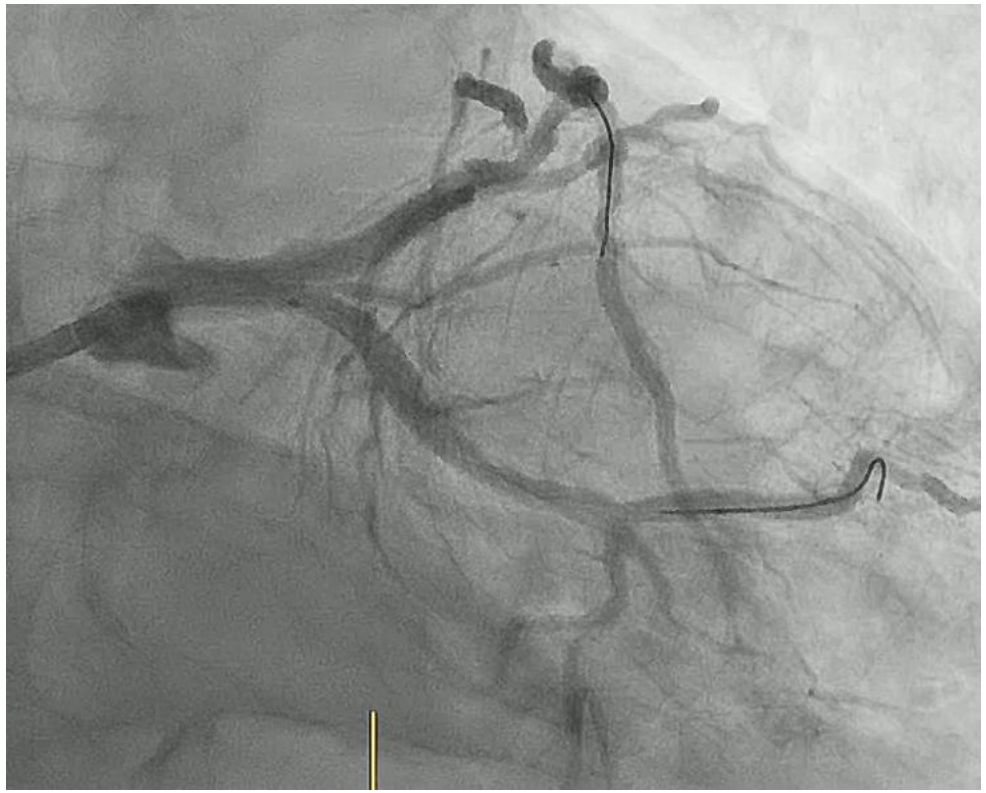


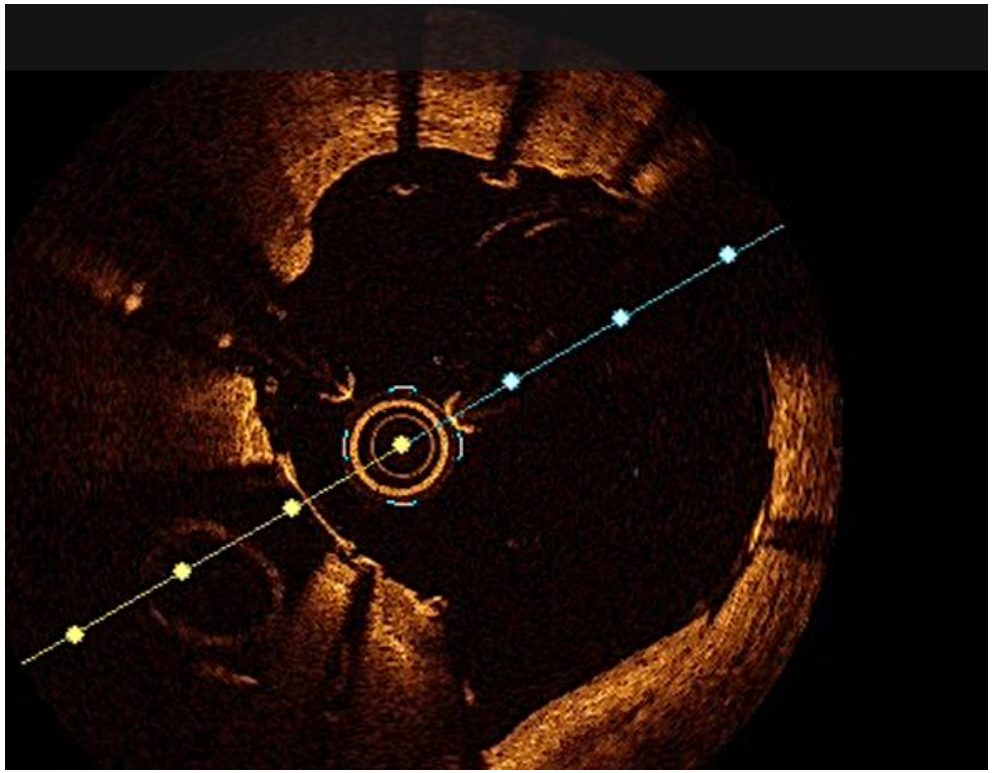

Viperwire


00:21:10


Backward atherectomy
No está activa la orientación automática del detector.
kV
116
mA
7,6
OAI
32°
CAUD
29°
DFI
119 cm
FD
22 cm
0°
0°
0°





Final result after TAP

Study Design

Key Entry Criteria:

- CCS, NSTEACS or stabilized post-STEMI
- *De novo* lesion with severe calcium
  - Via angiogram: opacities w/o cardiac motion involving both sides of wall w/total Ca^{++} ≥15 mm and extending into the target lesion, or
  - Via IVUS/OCT: ≥270° Ca^{++} in ≥1 cross section
- Equipoise regarding strategies (i.e. either no absolute requirement for or contraindication to atherectomy)

~2000 pts with severely calcified lesions; up to 150 US sites

Randomized after wire crossing 1:1

Orbital Atherectomy Lesion Preparation Strategy (1.25 mm Classic Crown followed by balloon pre-dilatation)	Conventional Angioplasty Lesion Preparation Strategy (conventional and/or specialty balloons per operator discretion)
2nd generation DES implantation and optimization	2nd generation DES implantation and optimization

1° endpoints:	1) Post-PCI in-stent MSA by OCT (N=~500 in imaging sub-study) 2) 1-year TVF (all subjects)
2° endpoints:	1) Procedural Success (stent deployed w/RS≤20% & no major complications) 2) Strategy Success (procedural success w/out crossover)

Patients with severely calcified lesions were enrolled by physician determination according to a pre-specified definition, with post-procedure calcium severity confirmed by an independent Core Lab

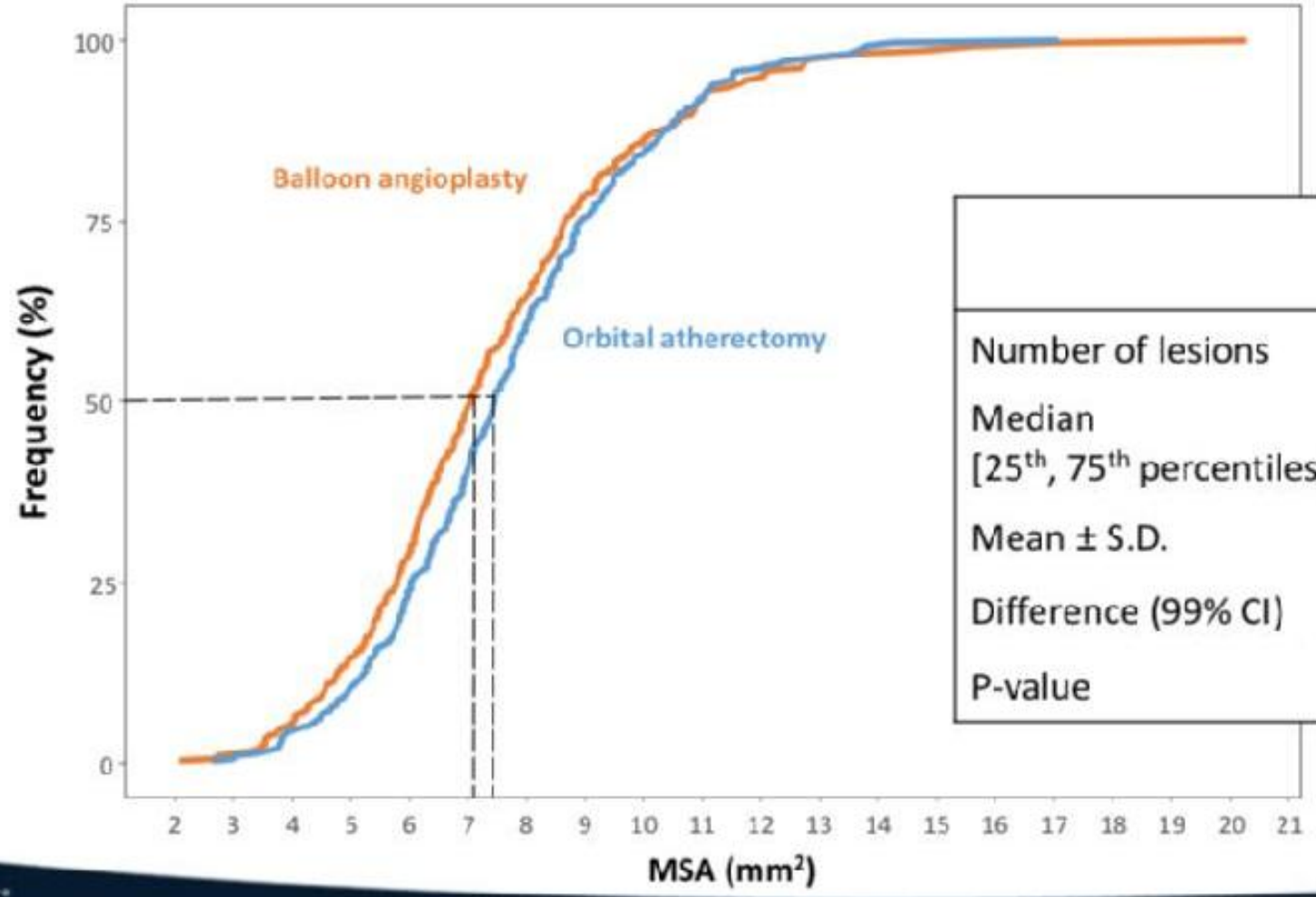
Funded by Abbott; ECLIPSE ClinicalTrials.gov number NCT03108456

Genereux P, et al. *Am Heart J.* 2022:249:1-11.

*62% of imaging use in the total cohort

Primary Imaging Endpoint (OCT Cohort)

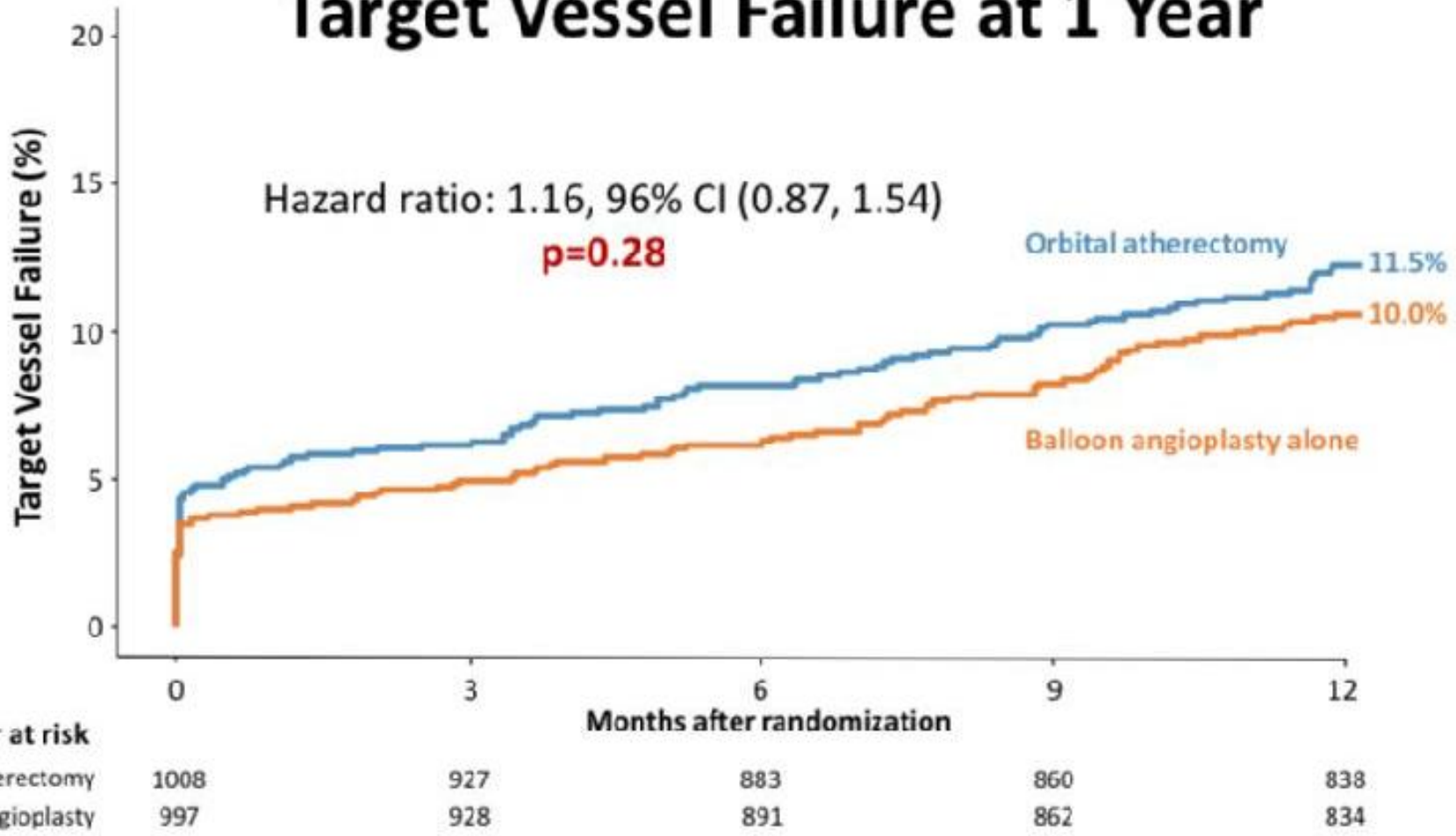
Minimal stent area at maximum calcium site



	Orbital atherectomy	Balloon angioplasty
Number of lesions	286	292
Median [25th, 75th percentiles]	**7.44** [6.03, 8.94]	**7.05** [5.78, 8.66]
Mean ± S.D.	**7.67** ± 2.27	**7.42** ± 2.54
Difference (99% CI)	**0.26** (-0.31, 0.82) mm²	
P-value	**0.08**	

Overall MSA: 6.13 ± 2.01 with Orbital Atherectomy vs. 5.87 ± 2.04 with Balloon Angioplasty; p=0.10

Primary Clinical Endpoint
Target Vessel Failure at 1 Year

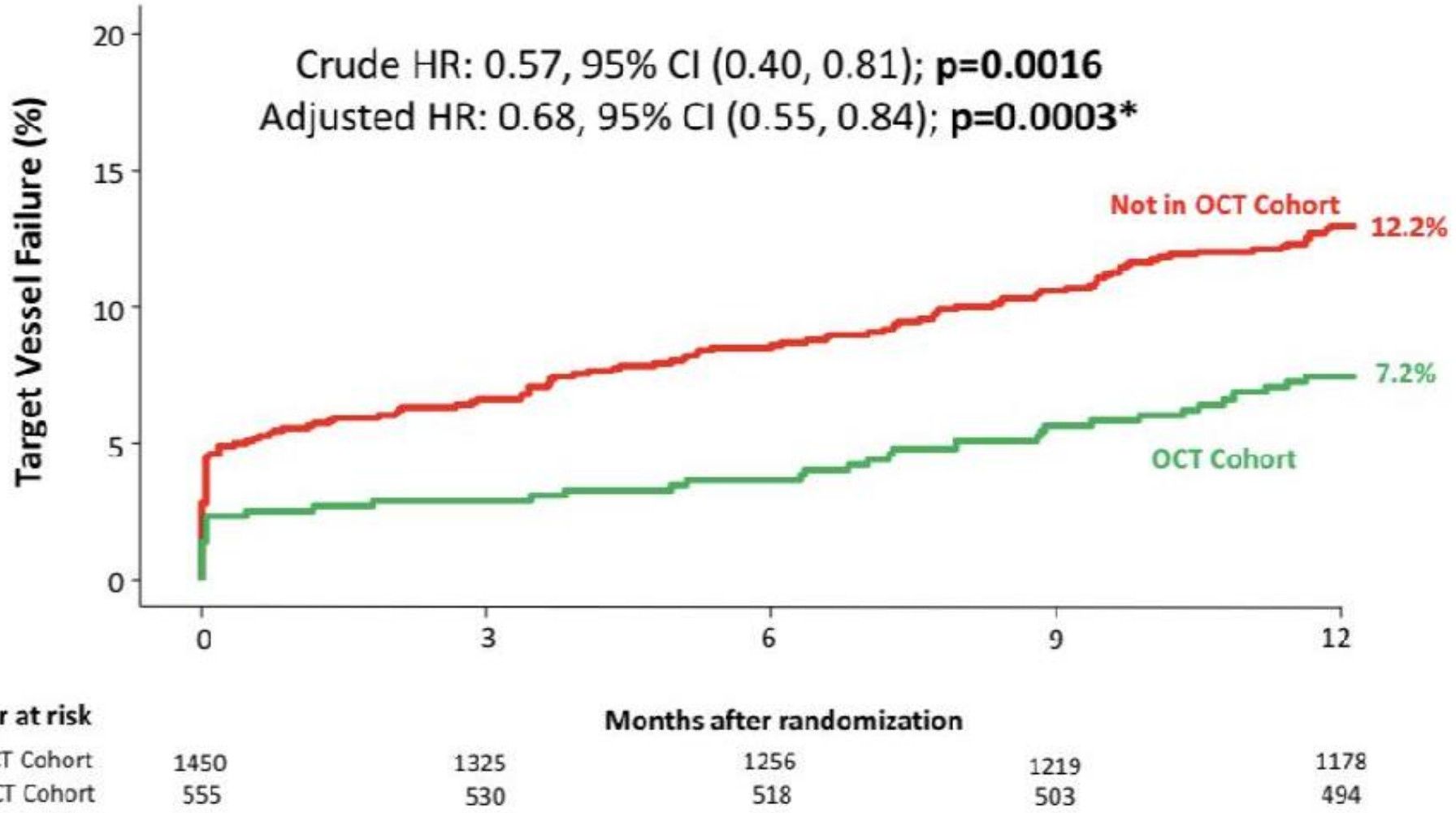


Number at risk					
Orbital Atherectomy	1008	927	883	860	838
Balloon Angioplasty	997	928	891	862	834

ECLIPSE

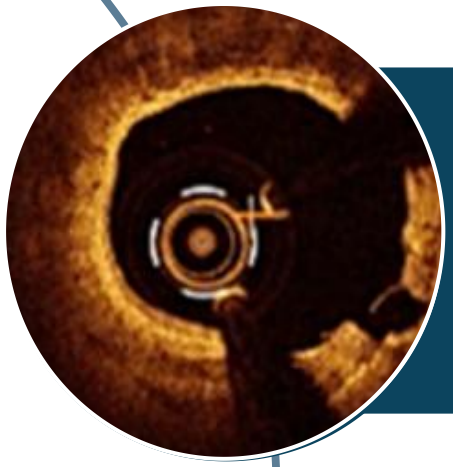
- Lesions needed to be amenable for balloon treatment. Severely calcified lesions in whom the operator thought atherectomy was required were excluded.
- Only 4.9% of lesions randomized to balloon crossed over (vs 12.5% in ROTAXUS and 16% in PREPARE-CALC)
- Meticulous plaque preparation and 62% imaging use in the total cohort.
- Low TVF rates
- Results in terms of MSA much better than expected in balloon arms.

TVF Stratified by Enrollment Cohort



ECLIPSE. TCT 2024

Mensajes



La OCT puede mejorar el tratamiento de las lesiones calcificadas permitiendo una adecuada evaluación del calcio, ayudando en la selección de la técnica de modificación de placa y optimizando el resultado de la implantación del stent

Existen actualmente diversas técnicas de modificación de placa. La elección de cada una depende de diversos factores y debe individualizarse en función de las características del paciente.

Muchas gracias