29th TCTAP2024

CT based Planning for Bifurcation PCI

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CVRF

Potential conflicts of interest

Within the past 12+ months, Carlos Collet has had a financial interest/arrangement or affiliation with the organization(s) listed here.

Institutional Support
- Abbott Vascular
- HeartFlow Inc
- GE Healthcare
- ShockWave Medical
- Boston Scientific
- Insight Lifetech
- Pie Medical
- Medis Medical Imaging

Equity/stock options
- Medyria
- Xenter

Consultancy fee
- Abbott Vascular
- HeartFlow Inc
- GE Healthcare
- Boston Scientific
- Insight Lifetech
- Early Bird
- Pfizer
- Siemens

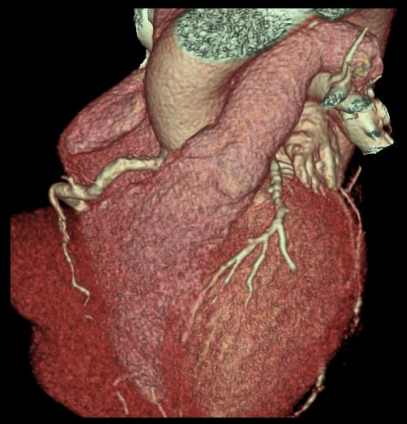
Others

CoreAalst BV

Patents filed: US20220164950A1, US20220175260A1, WO2022136637A1 and WO2021224458A1

All the interventional cardiologists need to know about CT

Volume rendering

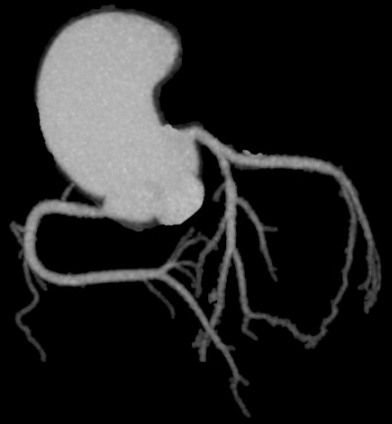


Overview of the heart anatomy

Myocardial bridges

Non-coronary structures

3D MIP

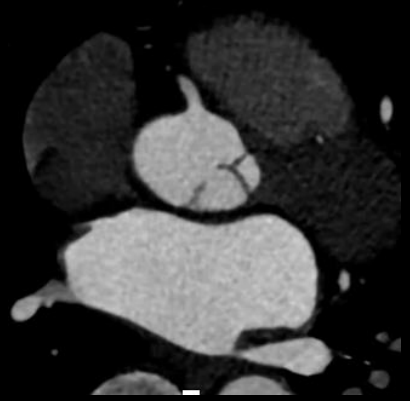


3D of the coronary tree

Distribution and severity of calcium

Location of stenosis

Axial images



Ostium take-off

Dominance

Complete diagnostic evaluation

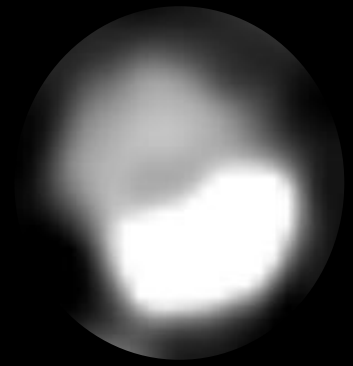
Curved MPR

Stenosis and plaque assessment

Plaque composition

Myocardial bridges

Cross-section

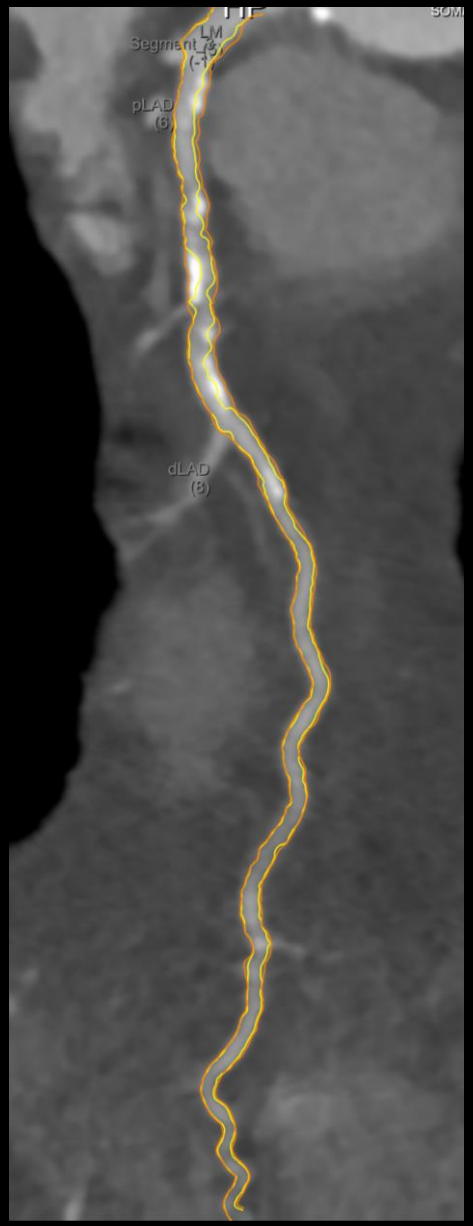


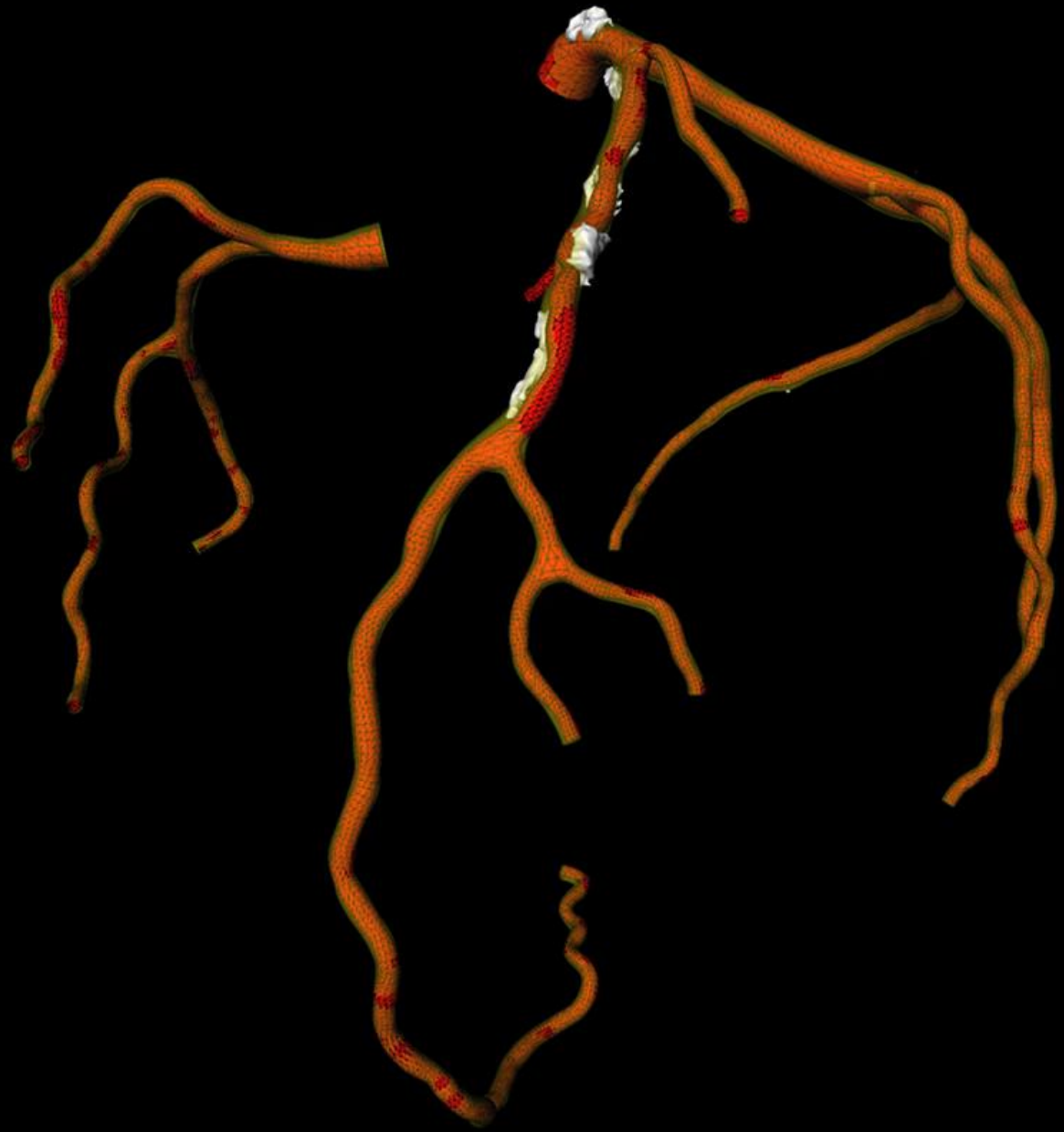
Plaque composition

Plaque burden

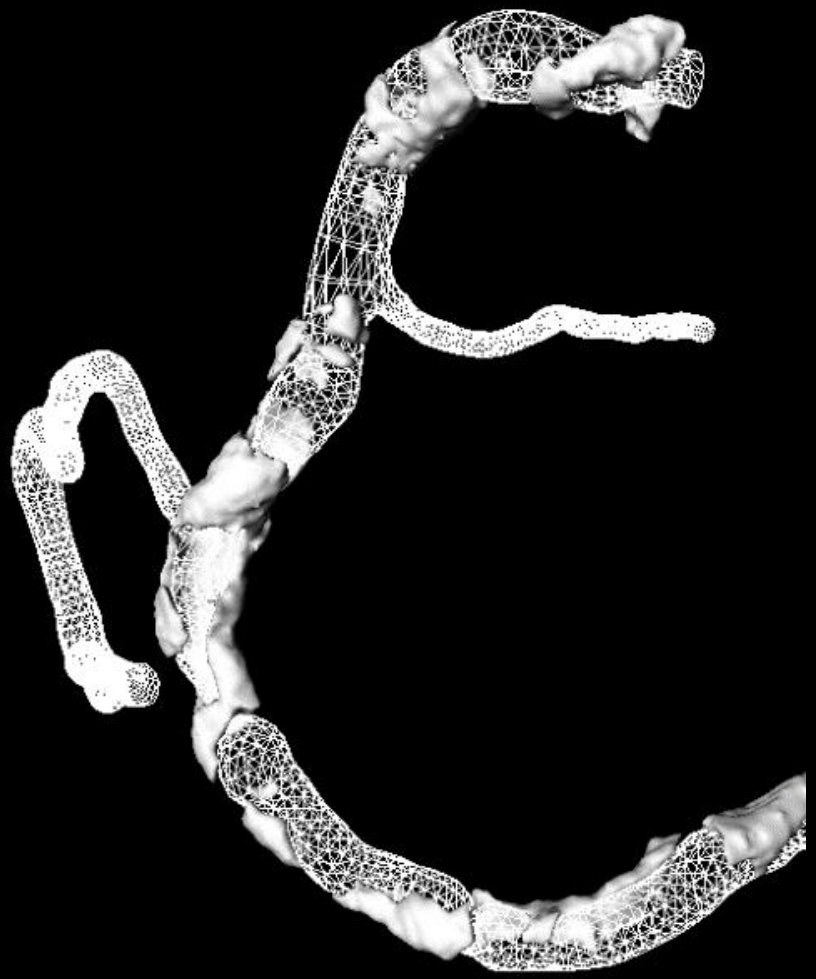
Calcium arc

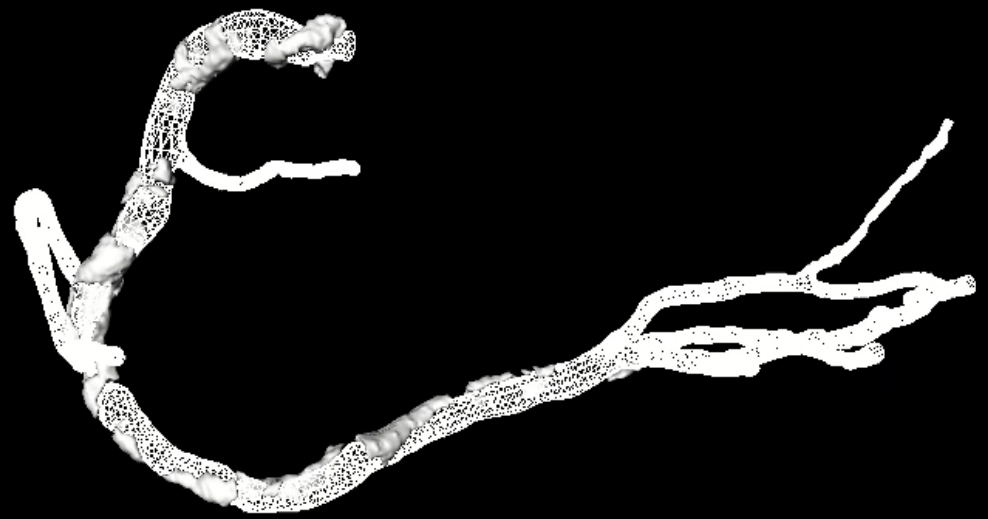
CT for interventional cardiologist



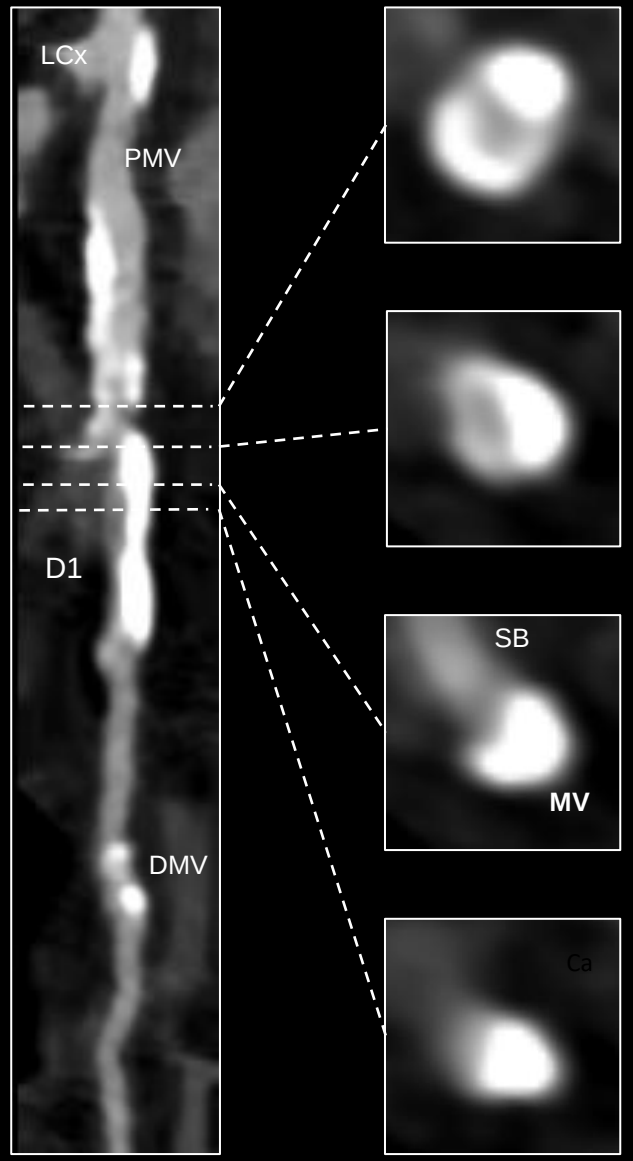


3D calcium map



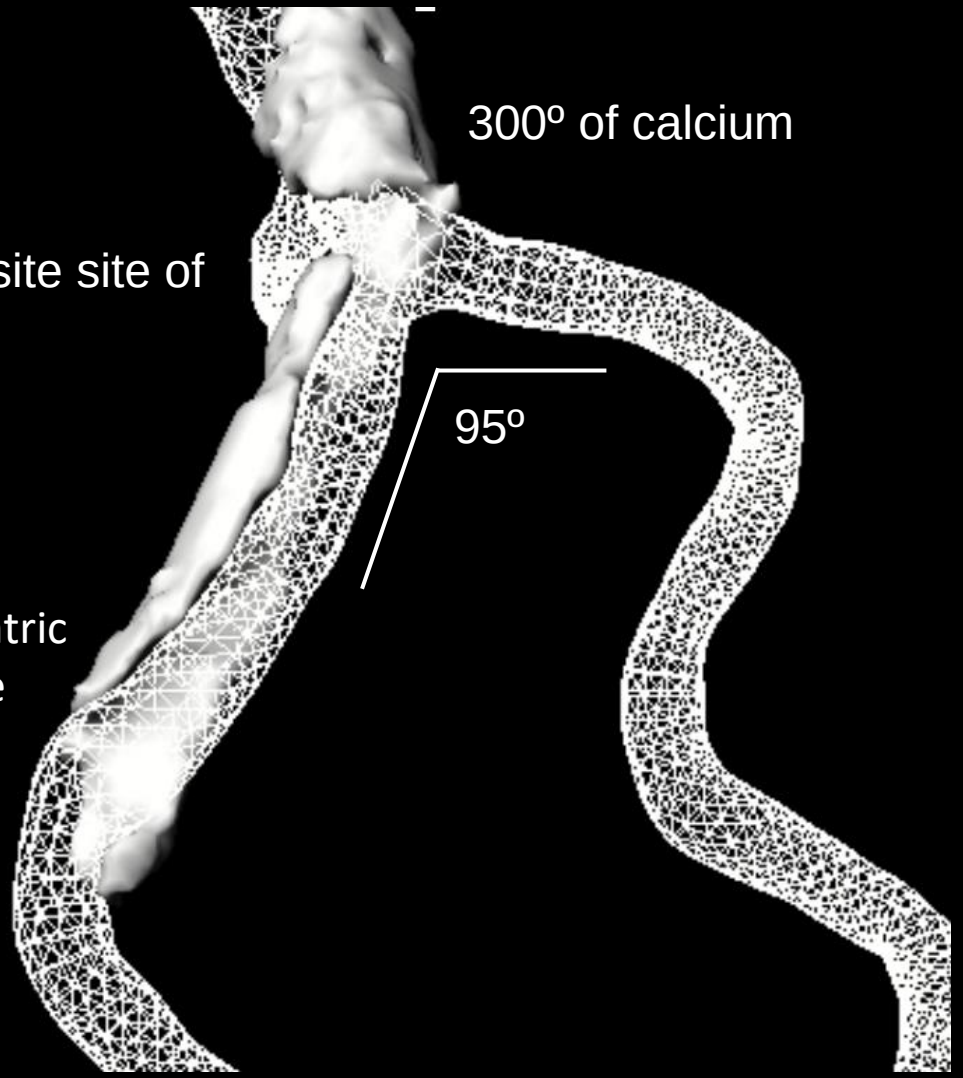


3D calcium map



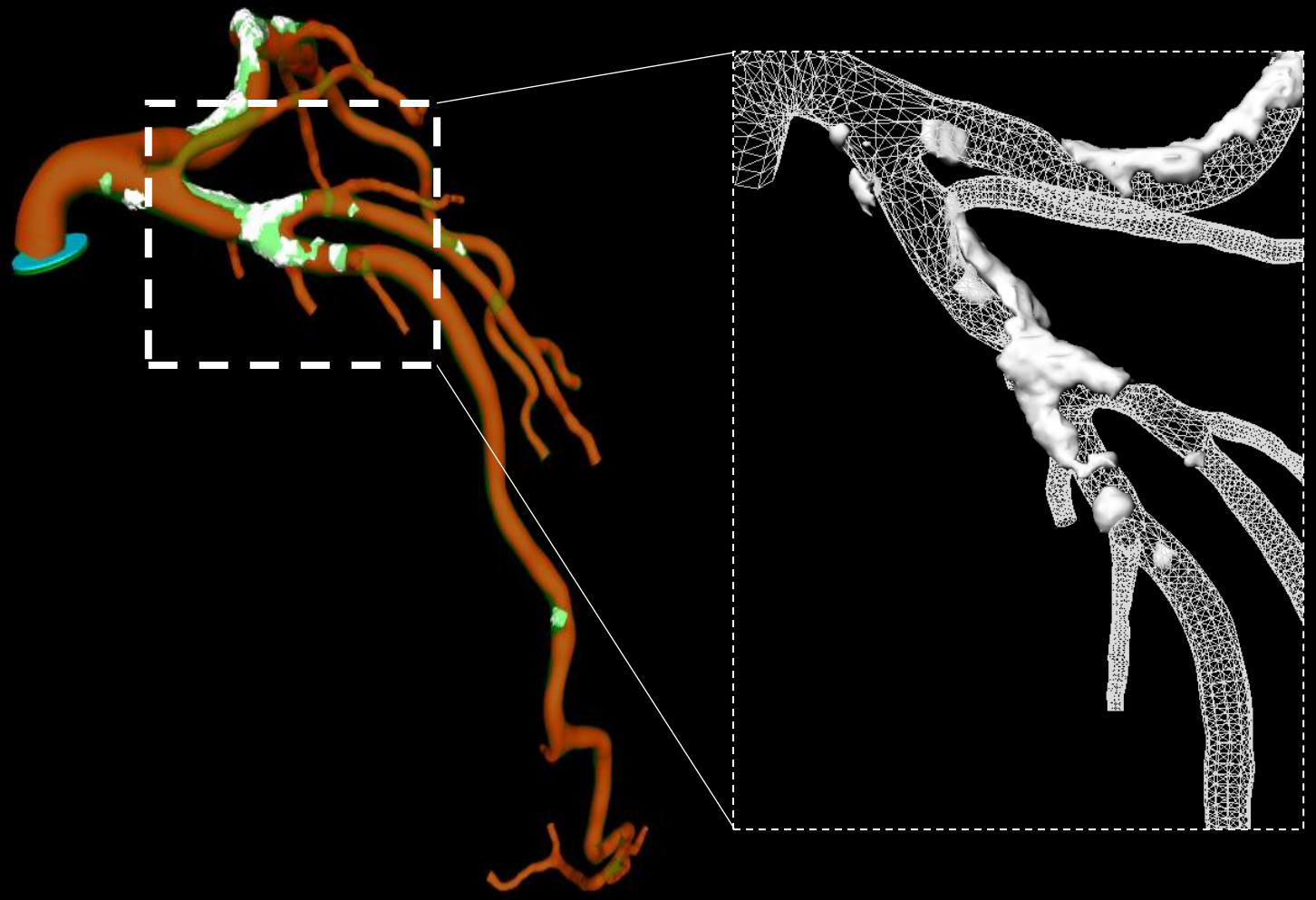
Calcium in the opposite site of carina

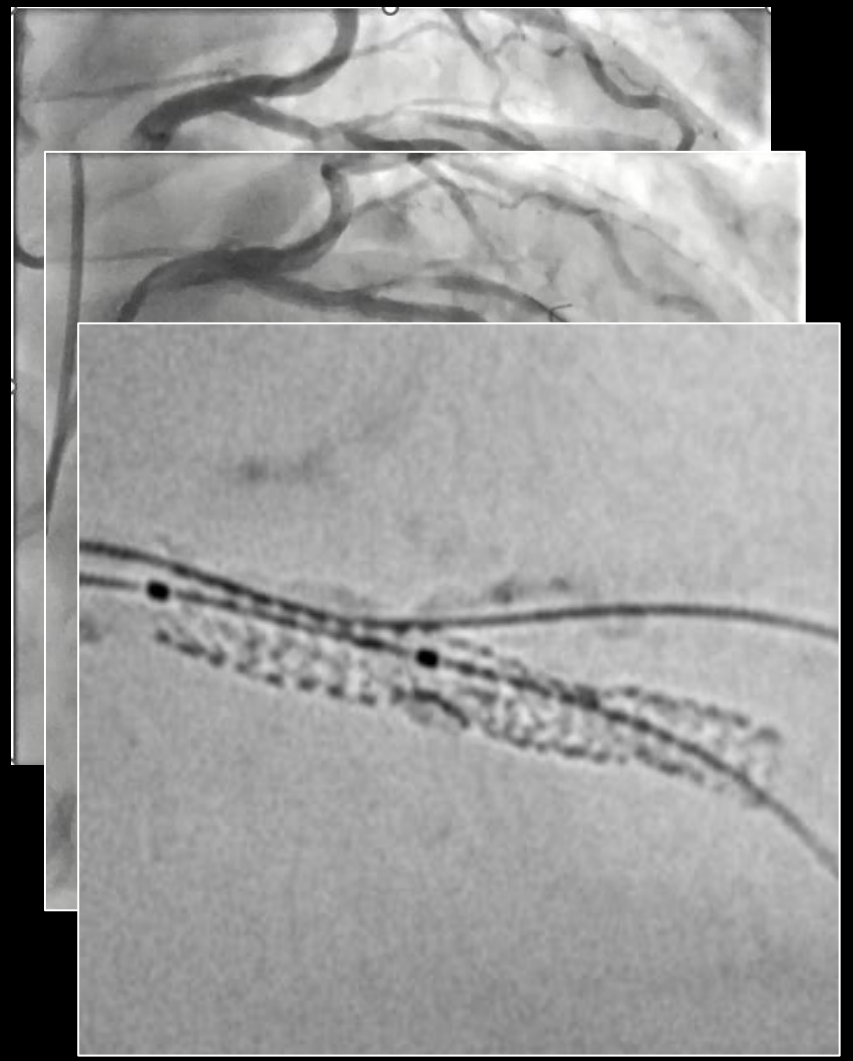
Long non-concentric calcific plaque



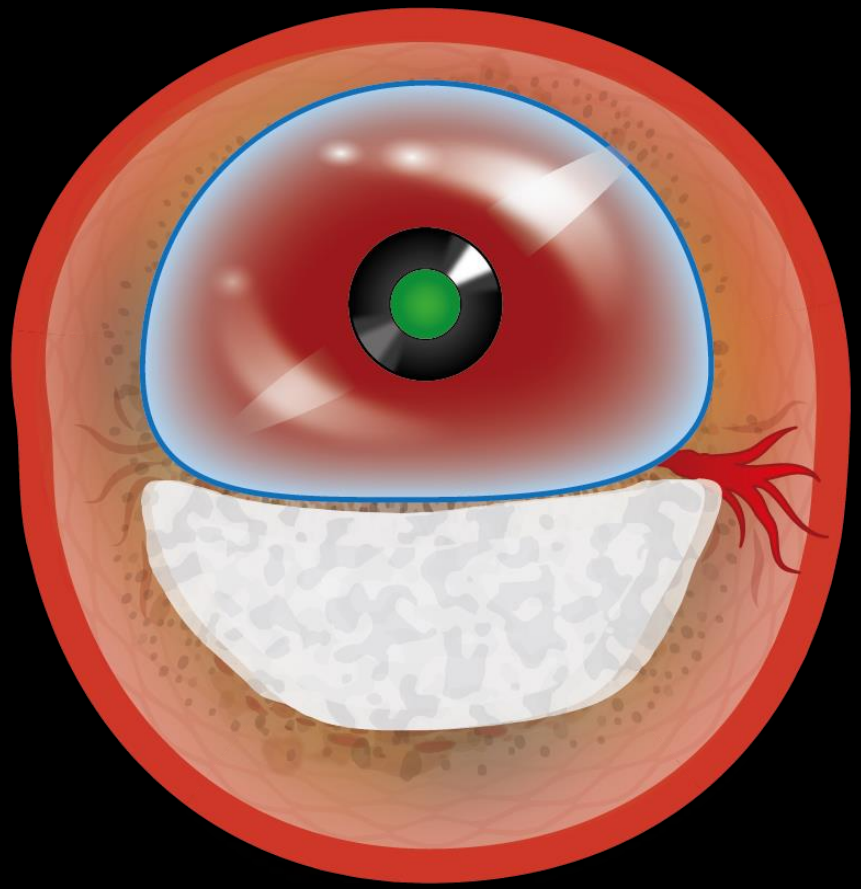
Calcium burden 71%

Calcium location and bifurcations

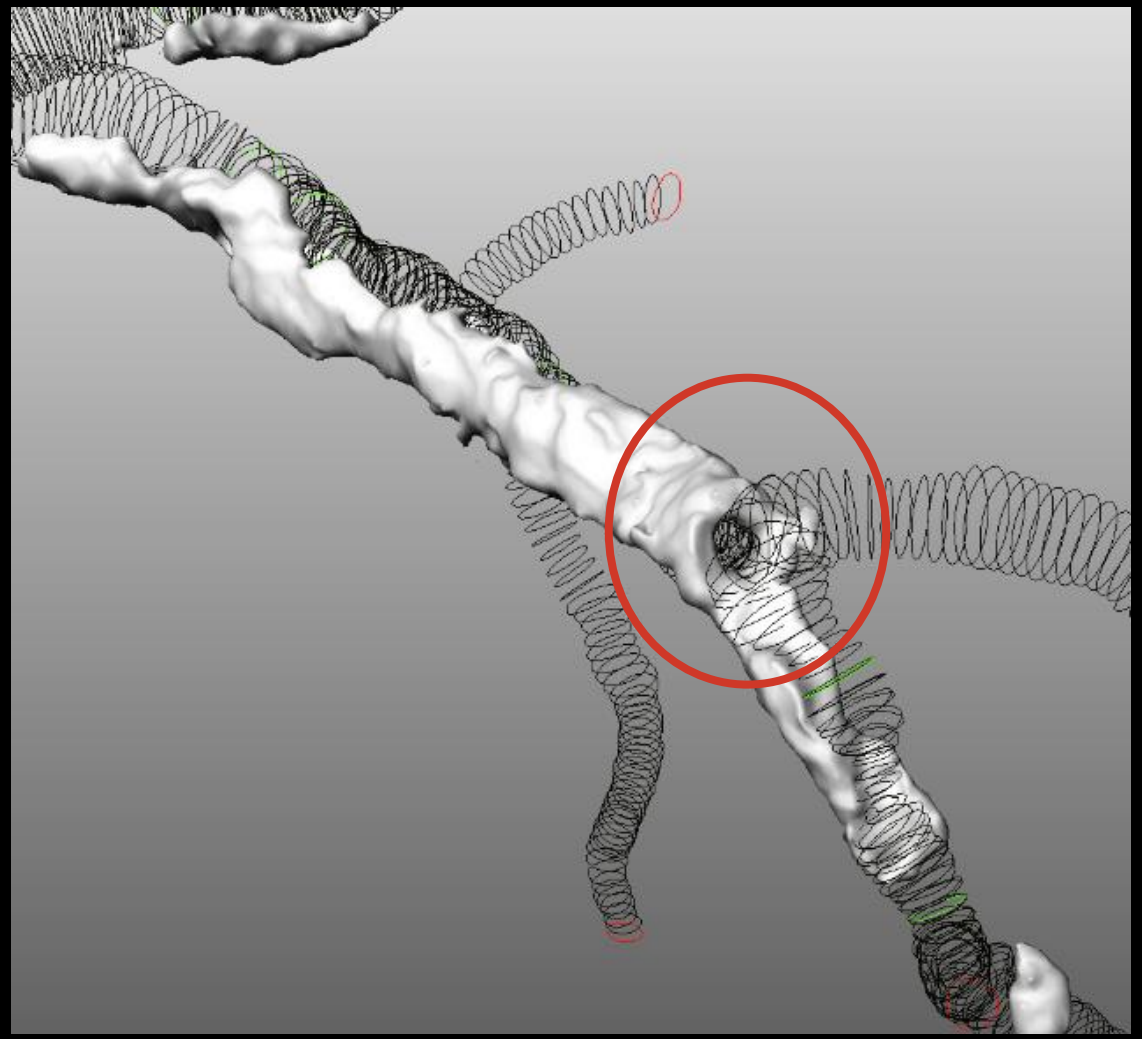




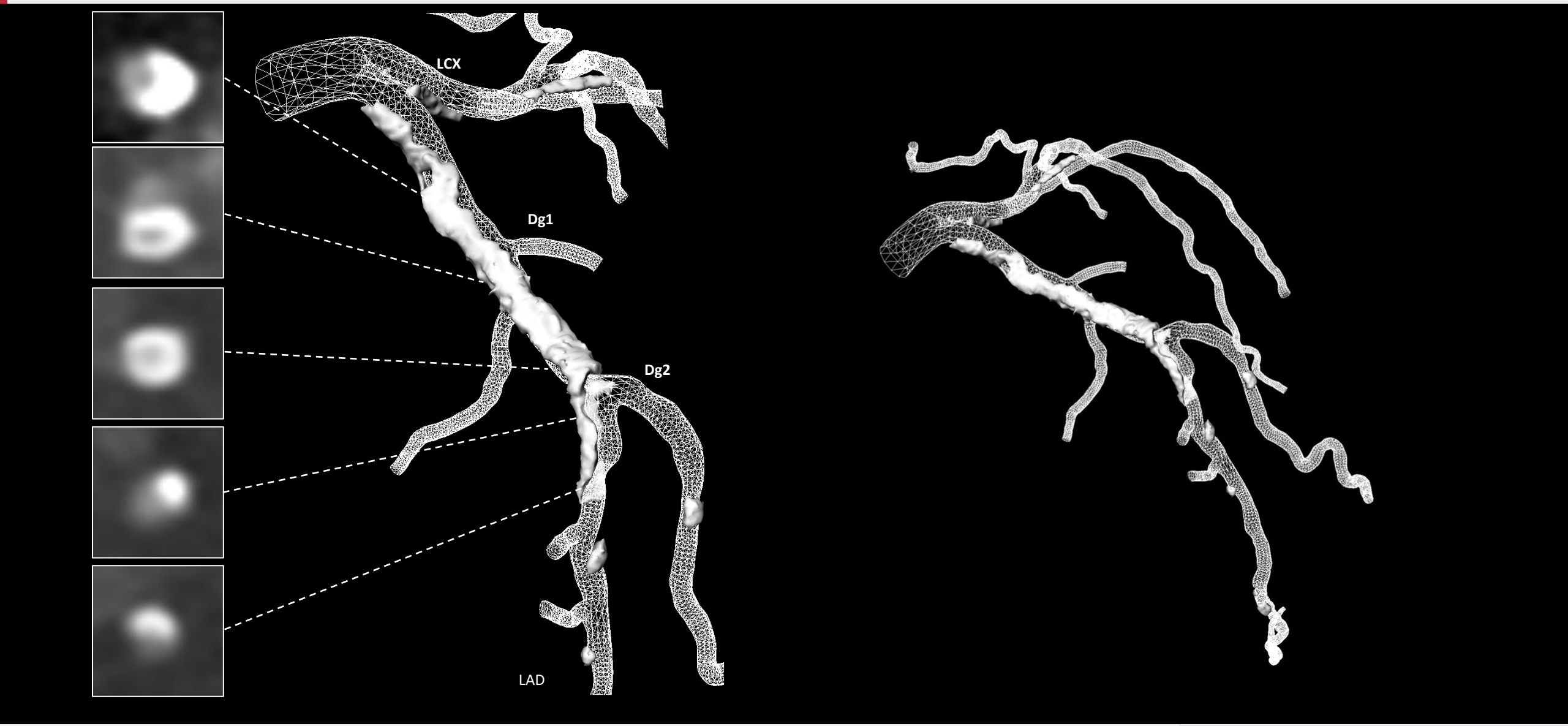
Expansion towards the carina



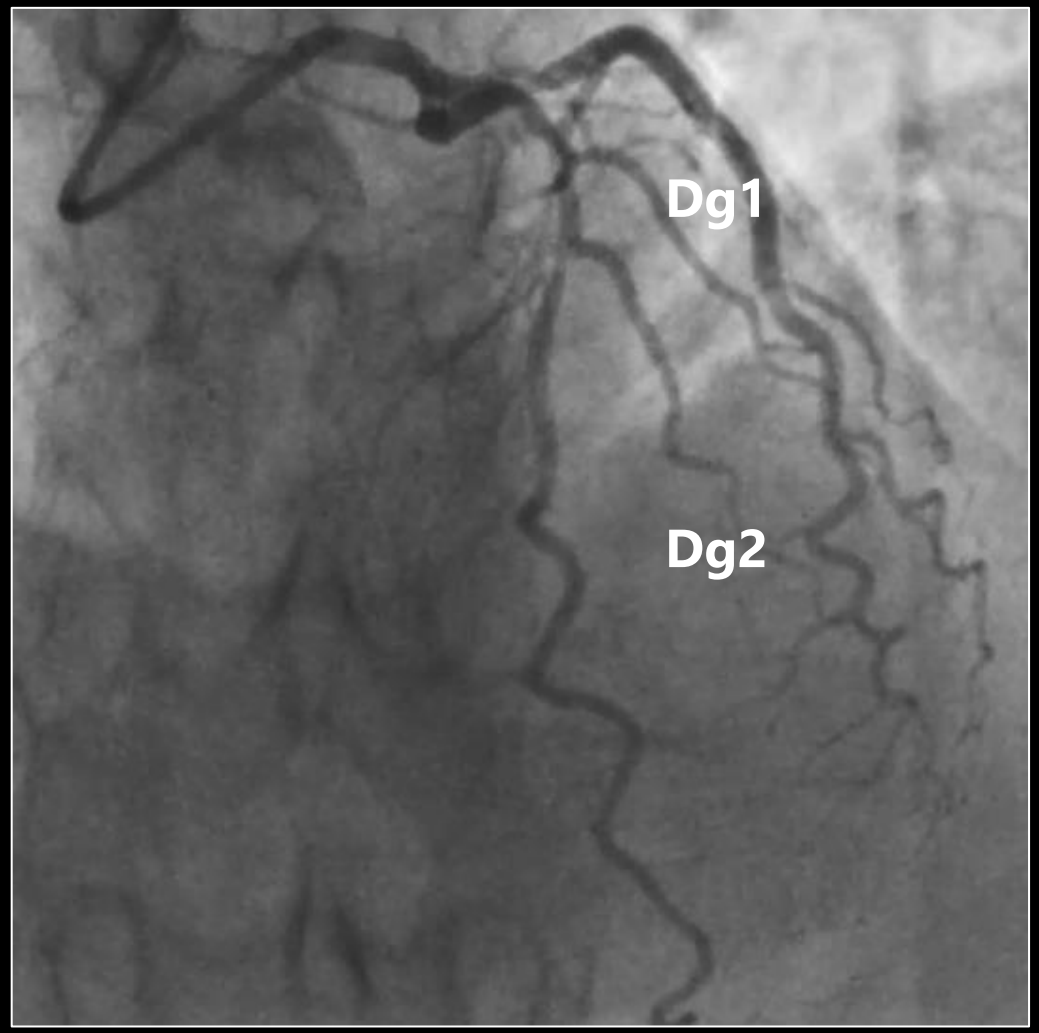
Eccentric calcium

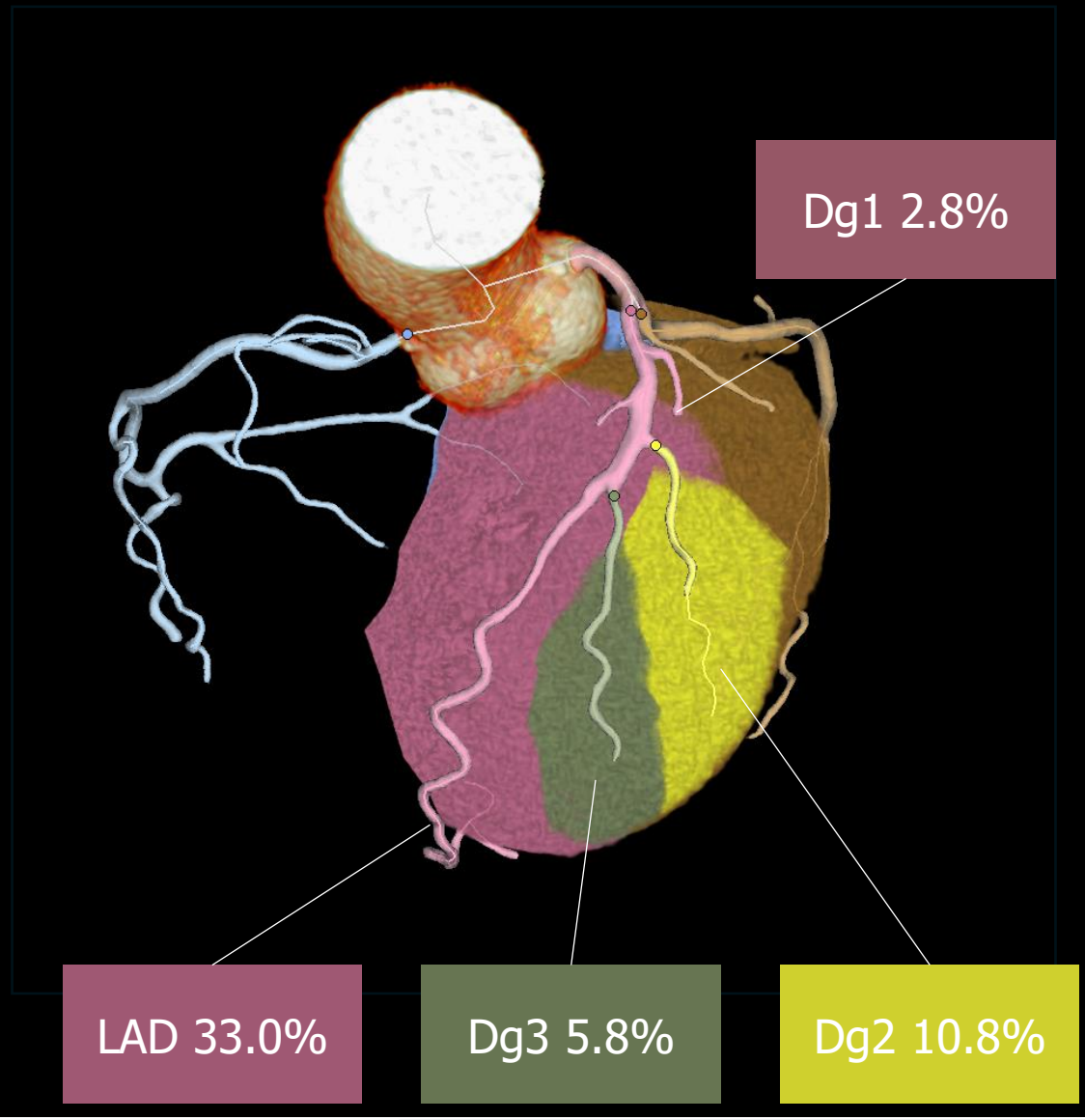


3D Calcium assessment by CTA



LAD PCI: which diagonal to protect?

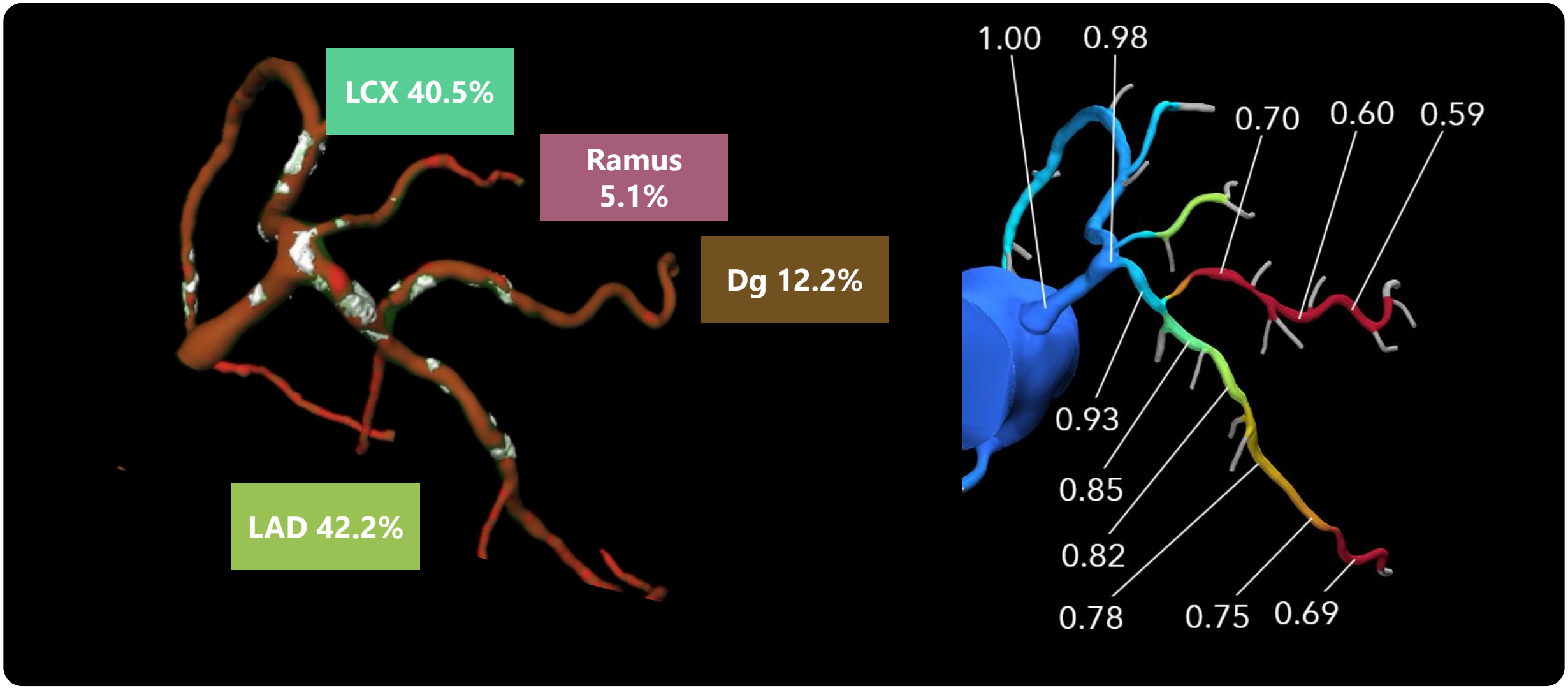




Procedural planning by CT

CoreAalst | OPTIMA

Is the side branch important?



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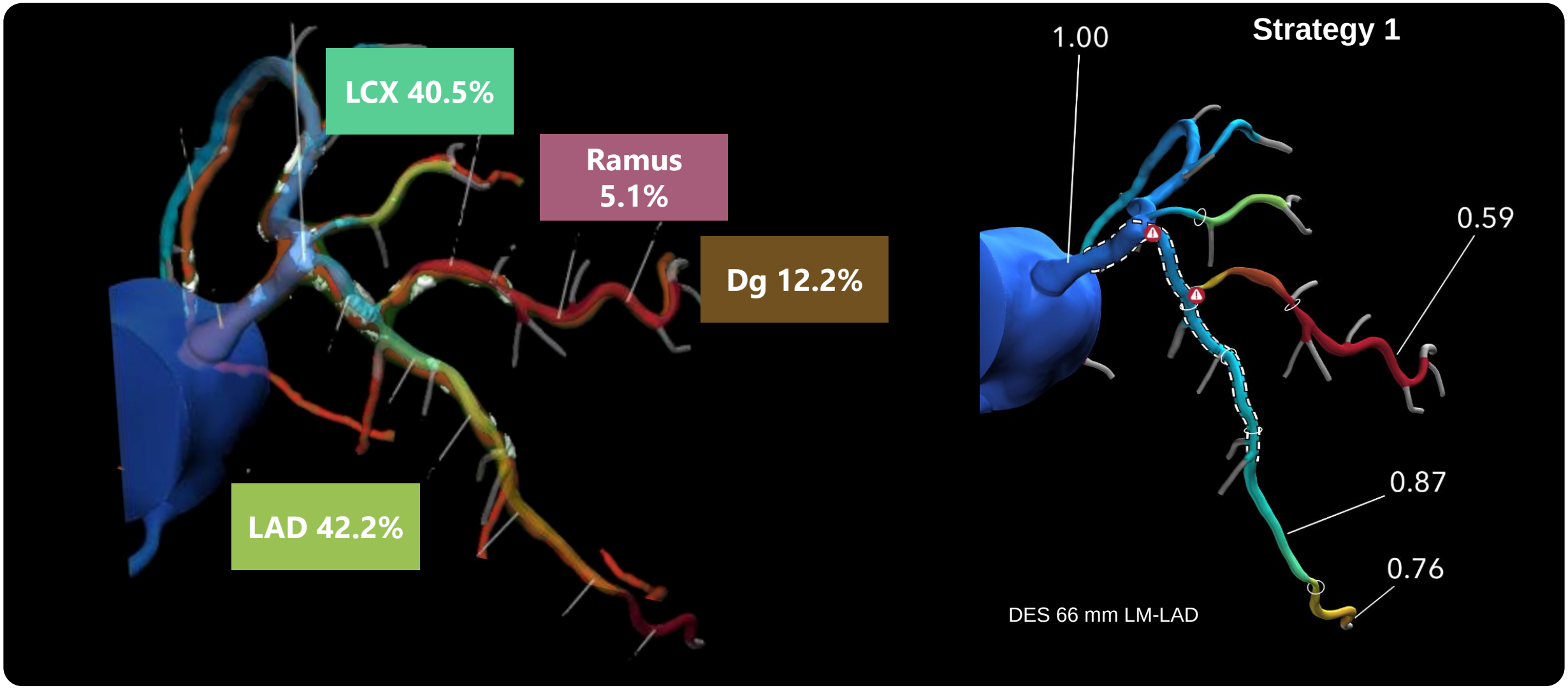
What is the best stenting strategy?



CoreAalst | OPTIMA

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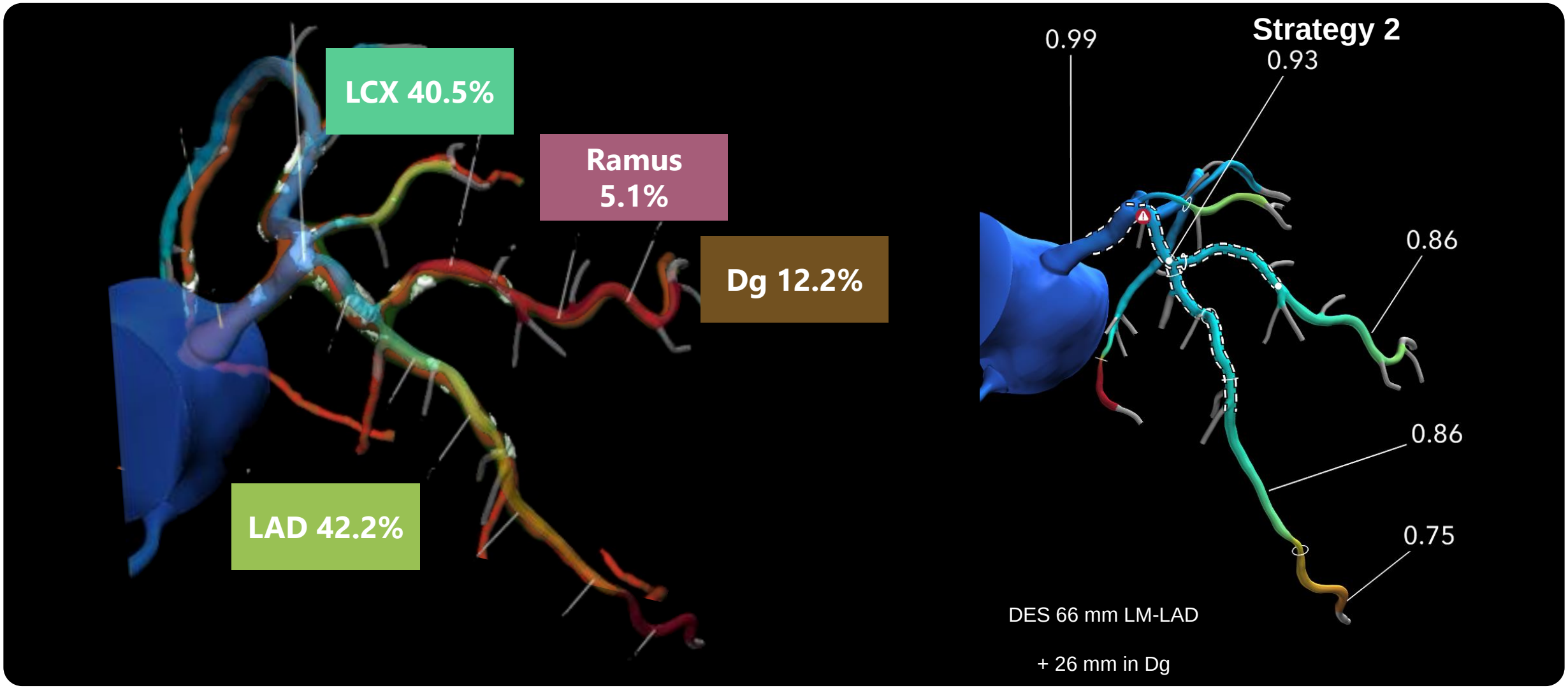
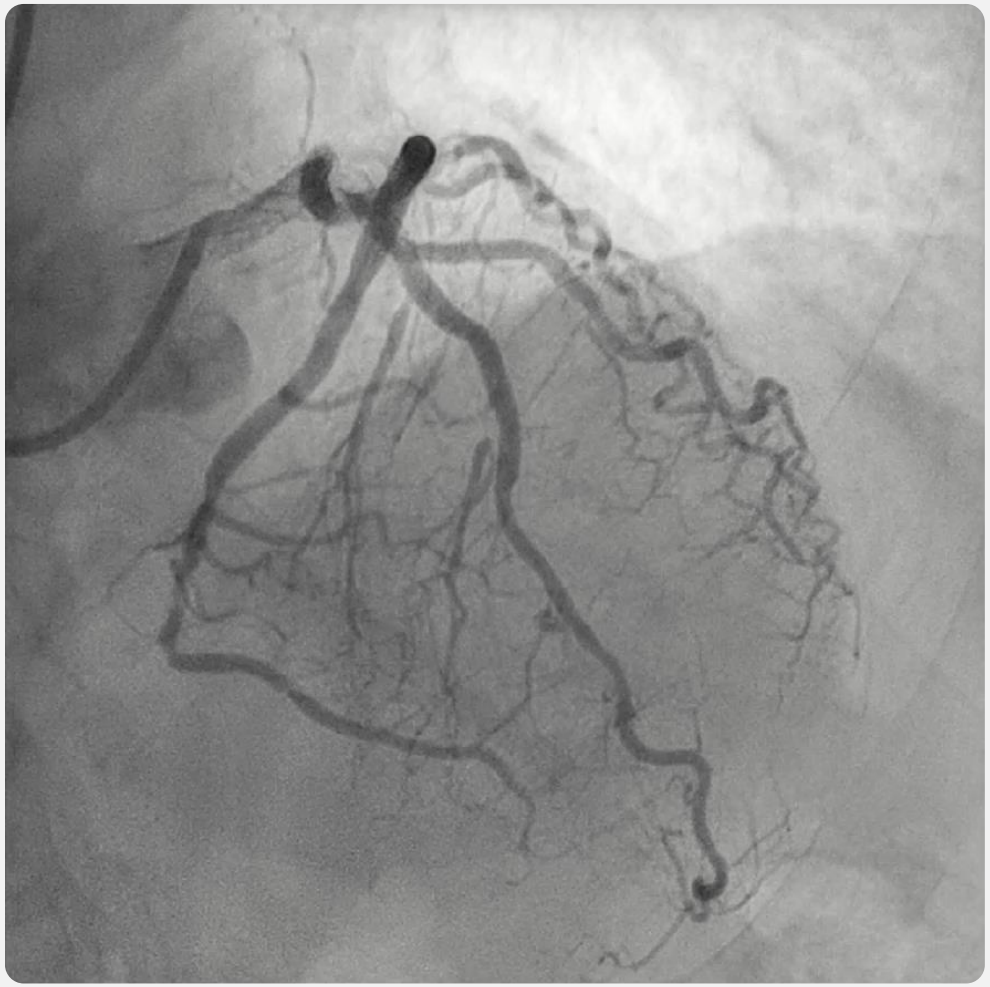
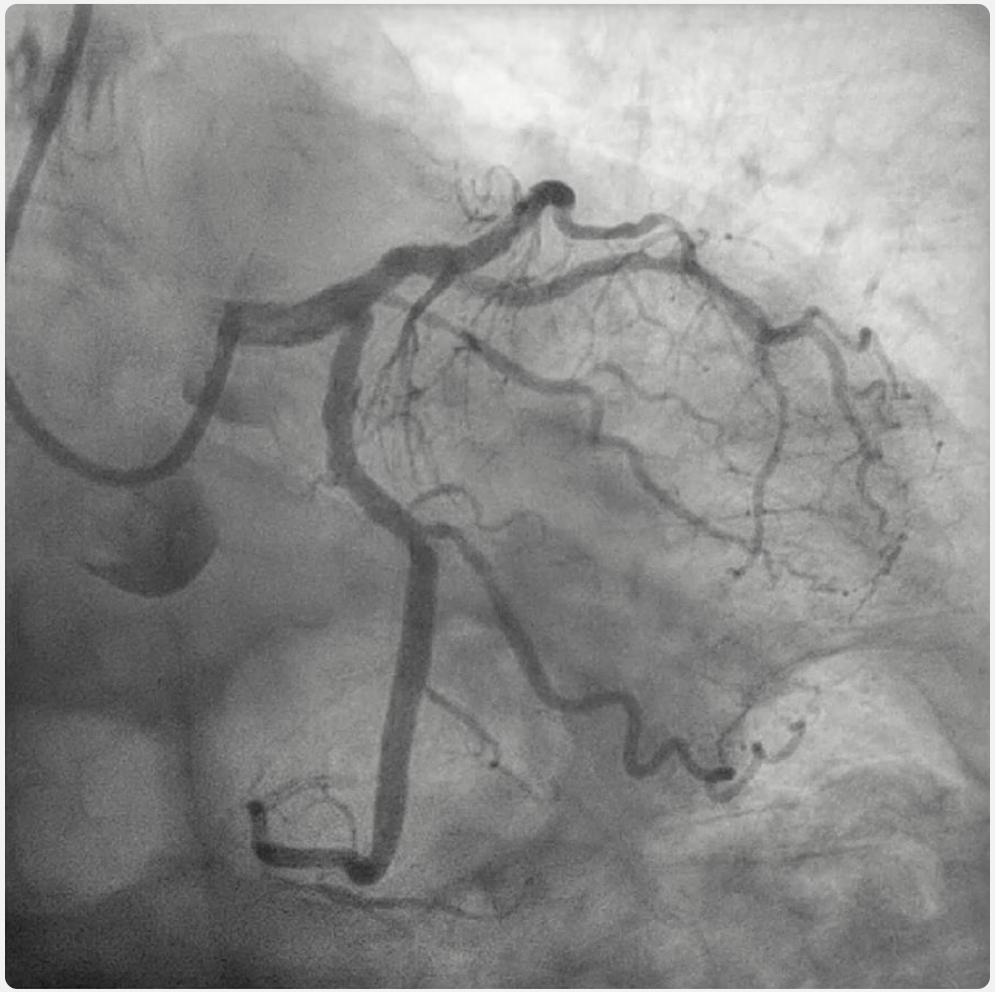


CoreAalst | OPTIMA

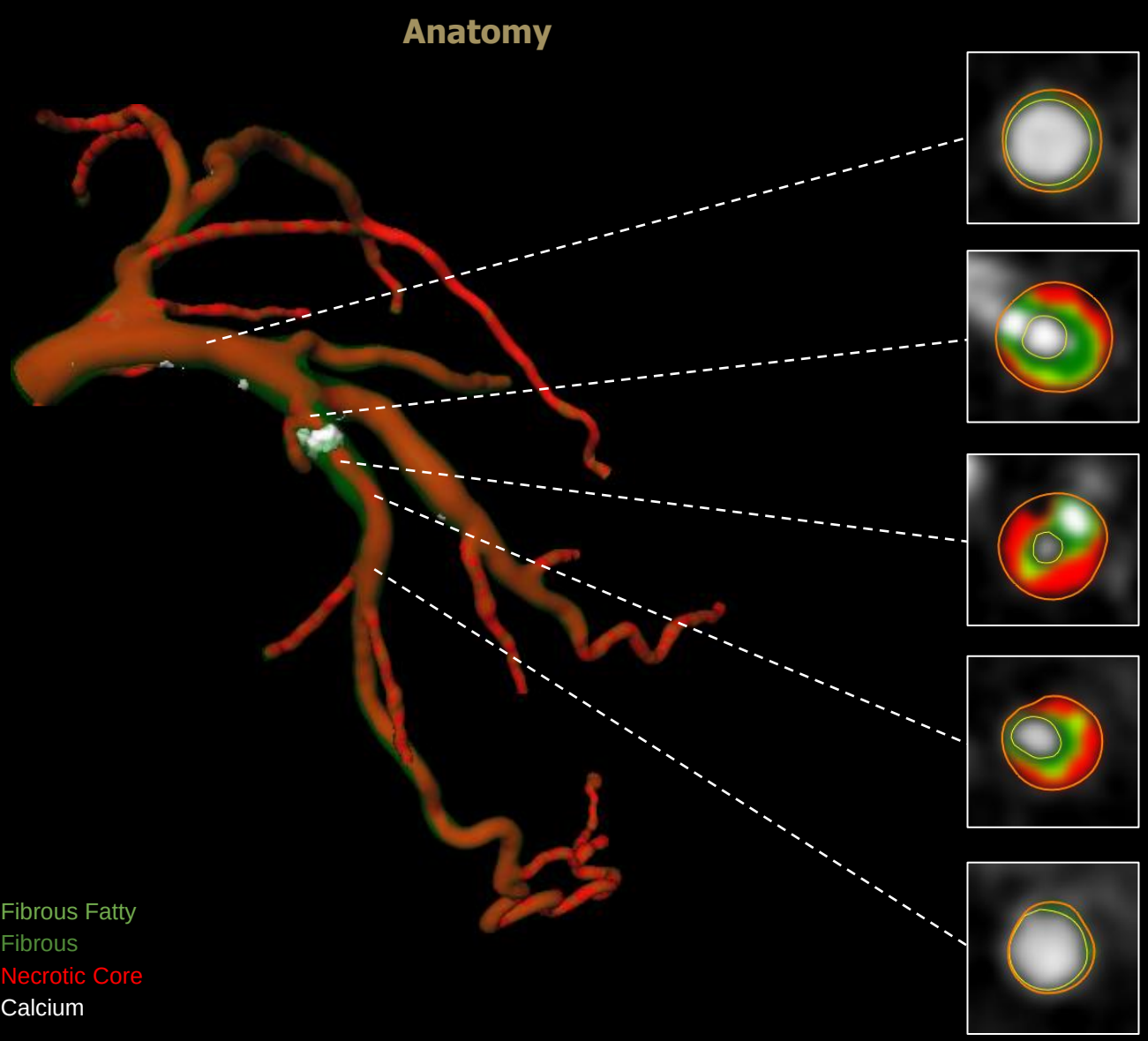
Pre-procedure planning translates to efficient execution

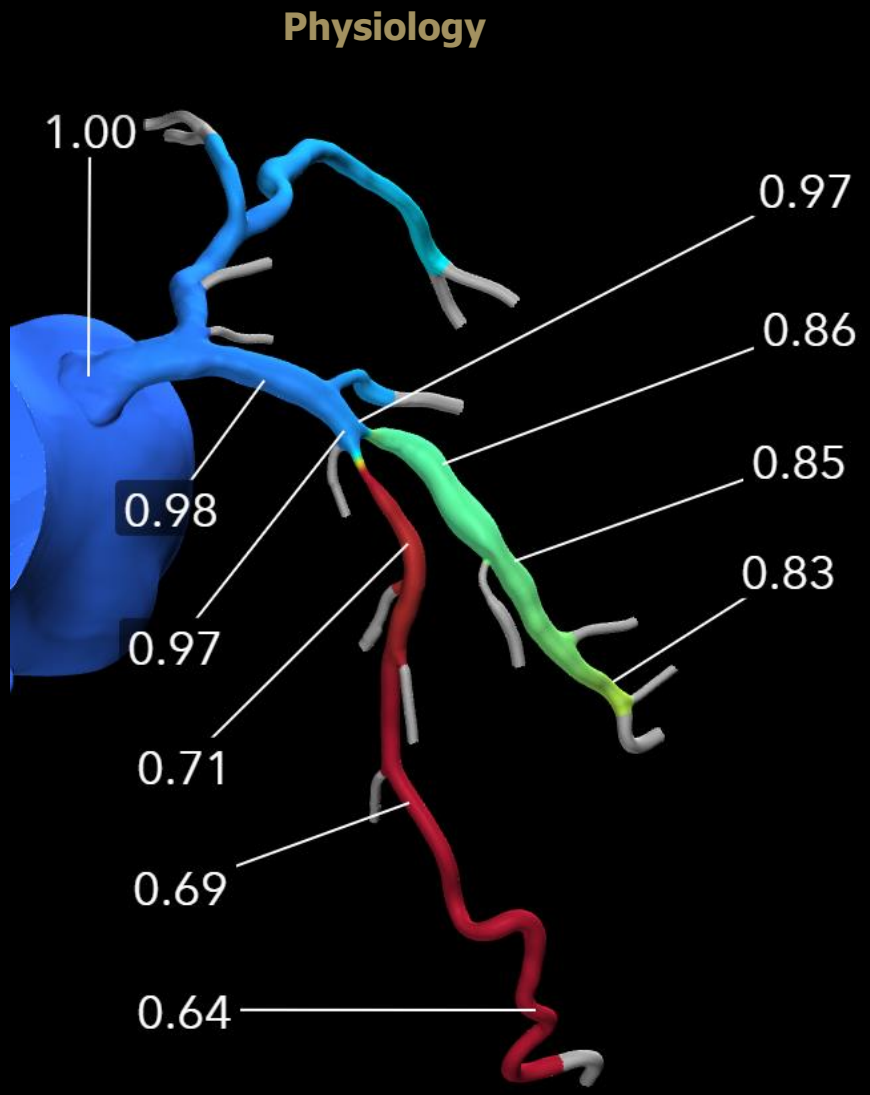
LM-LAD/Dg PCI



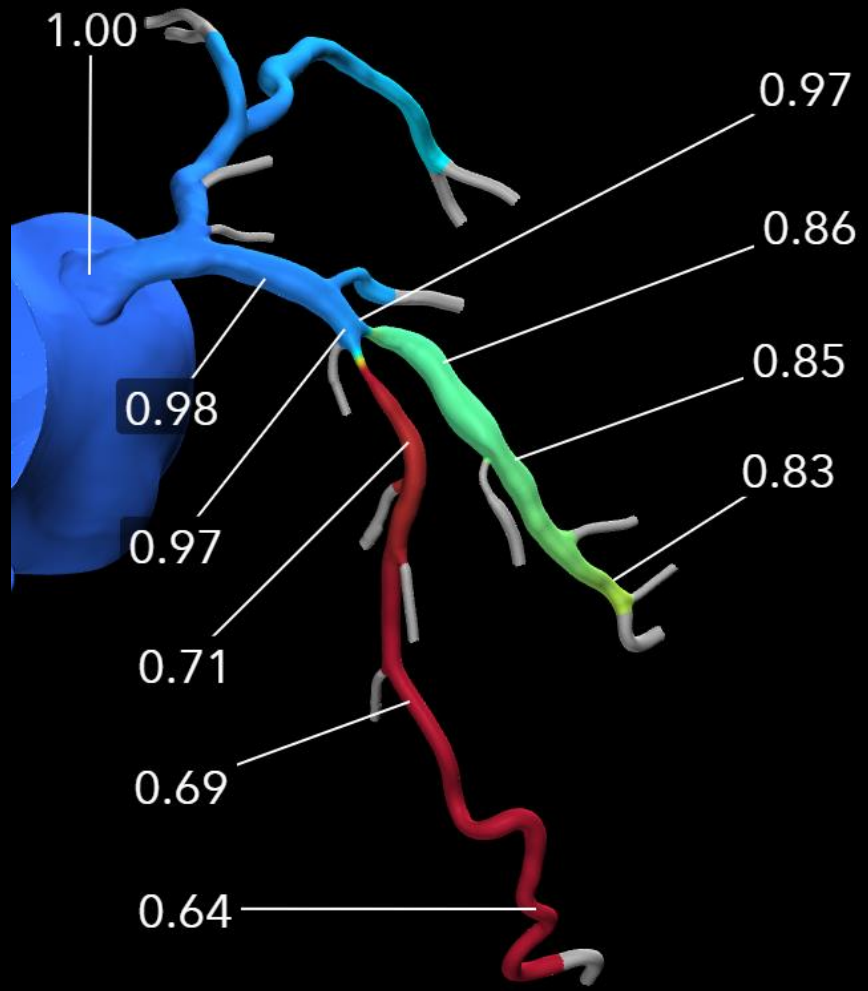


CT Plaque morphology and FFR_{CT}

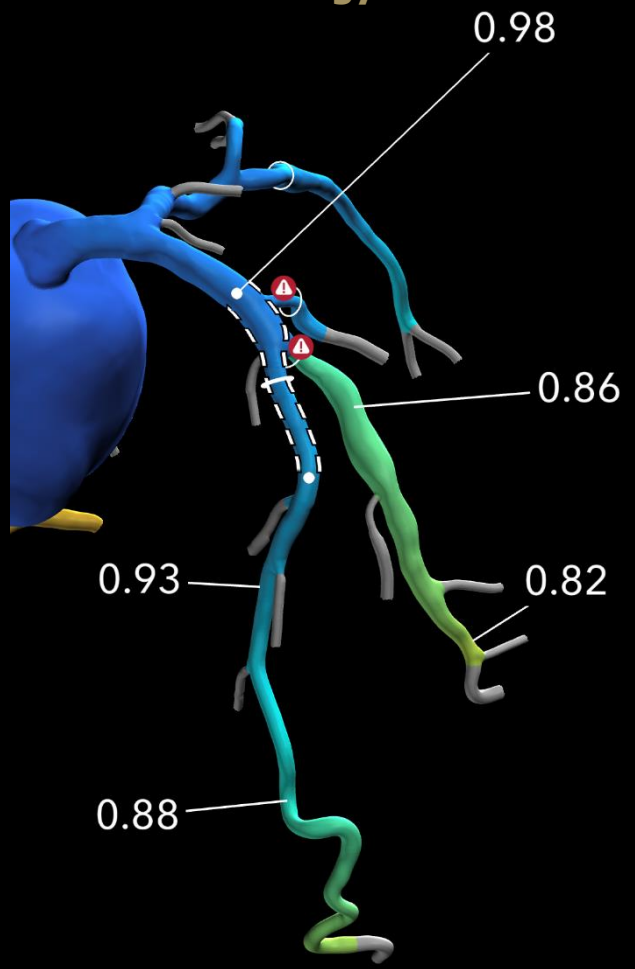




Virtual bifurcation PCI

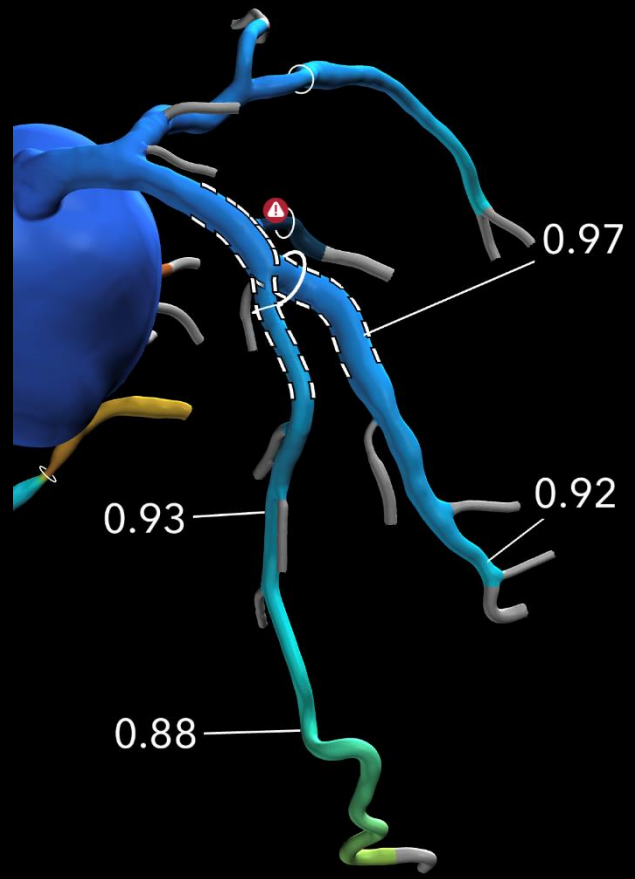


Strategy 1



Provisional LAD DES 22 mm

Strategy 2



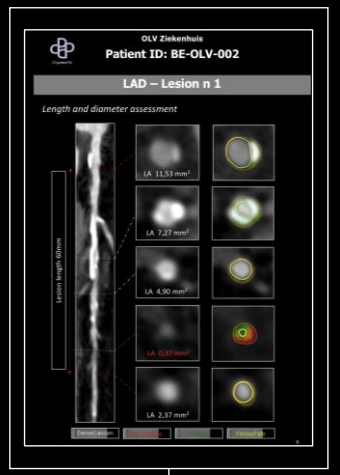
TAP LAD DES 22 mm
+ Dg2 DES 15 mm

PLAN

CT Based PCI Planning

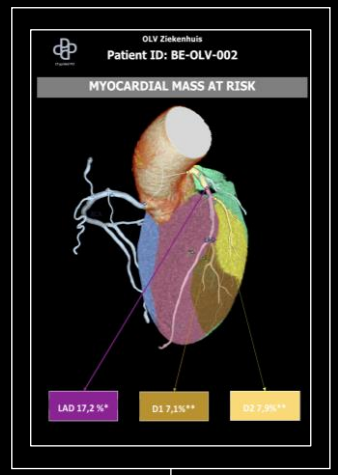
3D coronary anatomy
Global distribution of calcium
Position of the ostium
Tortuosity ~ Calcium ~ Lesion location
Expected level of guiding support

Catheter selection
Anticipate case complexity



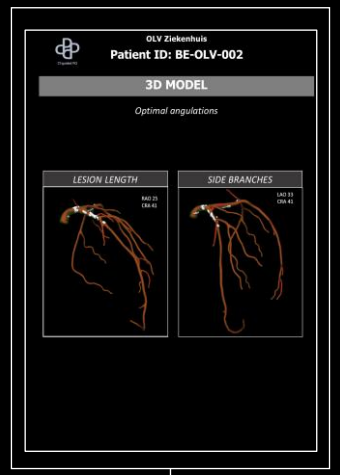
Lesion location
Plaque composition
Lesion length

Lesion preparation
(Probability of stent under-expansion)
Stent length



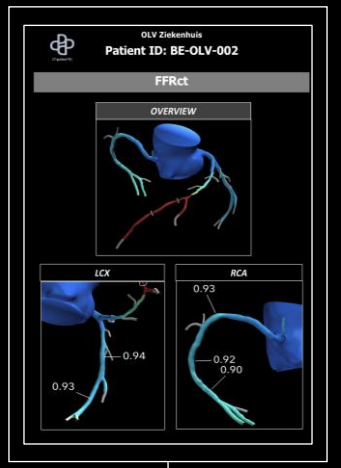
Myocardial mass at risk
Side branch protection

SB wire protection or stenting



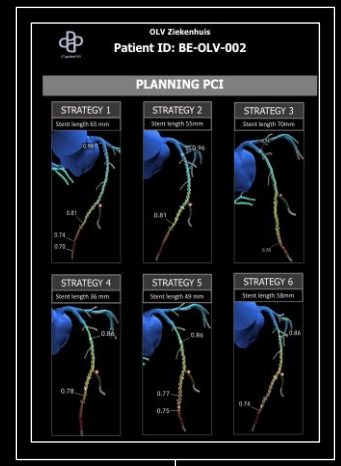
Best achievable projection

C-arm angulation
Awareness of sub-optimal projection



Lesion significance
Pattern of CAD

Appropriateness of PCI
Awareness of diffuse disease



Prediction of post-PCI FFR

PCI strategy

P4 RCT

CT-guided PCI

Patients with stable CAD* (n=1000) with at least one lesion with diameter stenosis >70% and FFR_{CT} ≤0.80

* or stabilized ACS

20 clinical sites in 6 countries (BE, IT, DK, UK, US and HU)

Centralize Core Laboratory Screening for Eligibility

Key Exclusion Criteria: LM stenosis, STEMI, eGRF <30 ml/Kg,previous PCI in target vessel or CABG, insufficient CTA quality.

R

PI: Carlos Collet & Daniele Andreini
Chairman: Bernard De Bruyne
Sponsor: CoreAalst BV
Core Lab: CoreAalst BV
CRO: QbD Consulting

CT-guided PCI strategy
FFR_{CT} Planner + Online CT guidance

x

IVUS-guided PCI strategy
Mandatory pre and post PCI imaging

PCI at operator discretion
Invasive physiology pre and post-PCI recommended

Primary endpoint (non-inferiority)

MACE (cardiac death, target vessel MI and ischemia-driven TVR) between CT- vs. IVUS-guided PCI at 1-year follow-up.

Key secondary endpoint

Radiation dose and contrast volume between CT-and IVUS-guided PCI strategies.
Post-PCI FFR measured immediately after PCI between CT-and IVUS-guided PCI strategies.
SAQ-7 scores between CT and IVUS guided PCI strategies at 12 months.

Hypothesis: *A CT-guided PCI strategy is* ***non-inferior*** *to IVUS guided PCI with respect to* ***MACE***

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CT GUIDED PCI
COURSE

24th to 25th June 2024

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Limited Capacity On-Site & Virtual

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