PLACE 2026
PLATFORM OF LABORATORIES FOR ADVANCES IN CARDIAC EXPERIENCE

CONGRESSO
ROMA, 25 - 27 Giugno 2026

CASE BASED HOT TOPICS

Valutazione post-DCB: imaging o funzionale?

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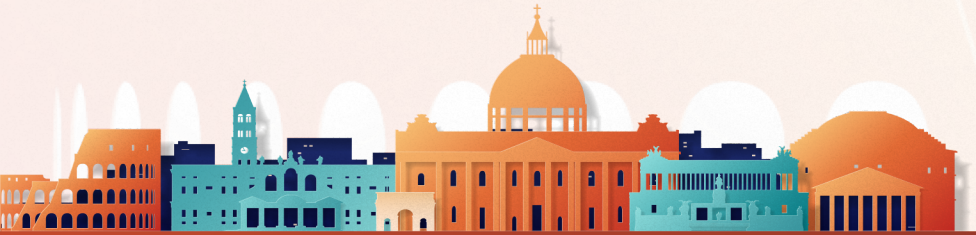
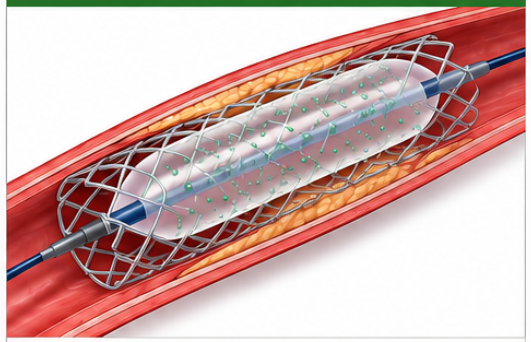


Indications for DCB in PCI

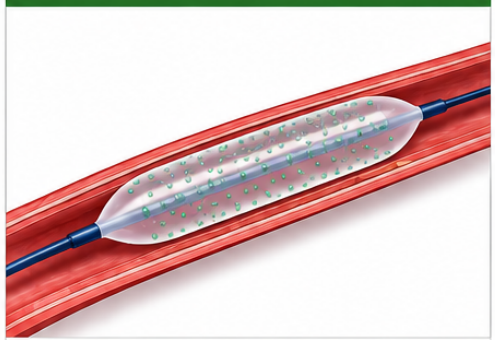
ISR



Treatment of in-stent restenosis without adding another layer of metal

ESTABLISHED INDICATION

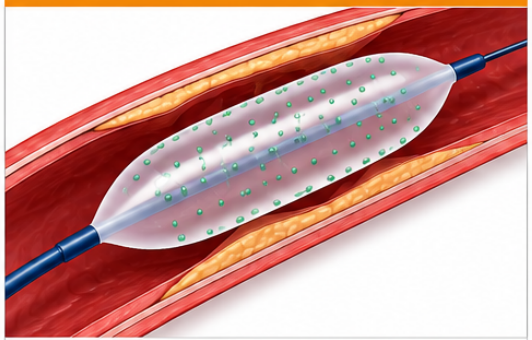
SMALL-VESSEL CAD



Superior to DES implantation

ESTABLISHED INDICATION

LARGE-VESSEL CAD



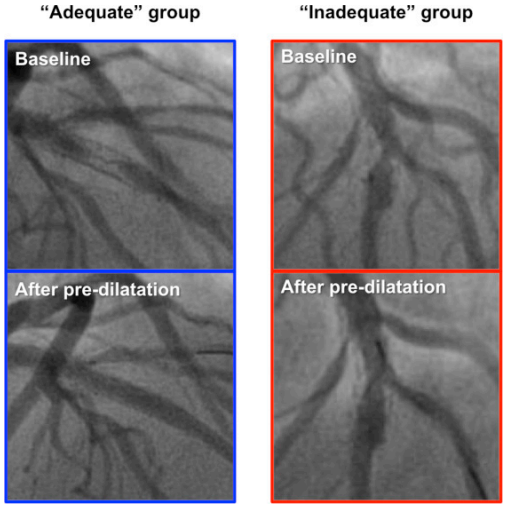
Emerging evidence in selected patients and lesion subsets

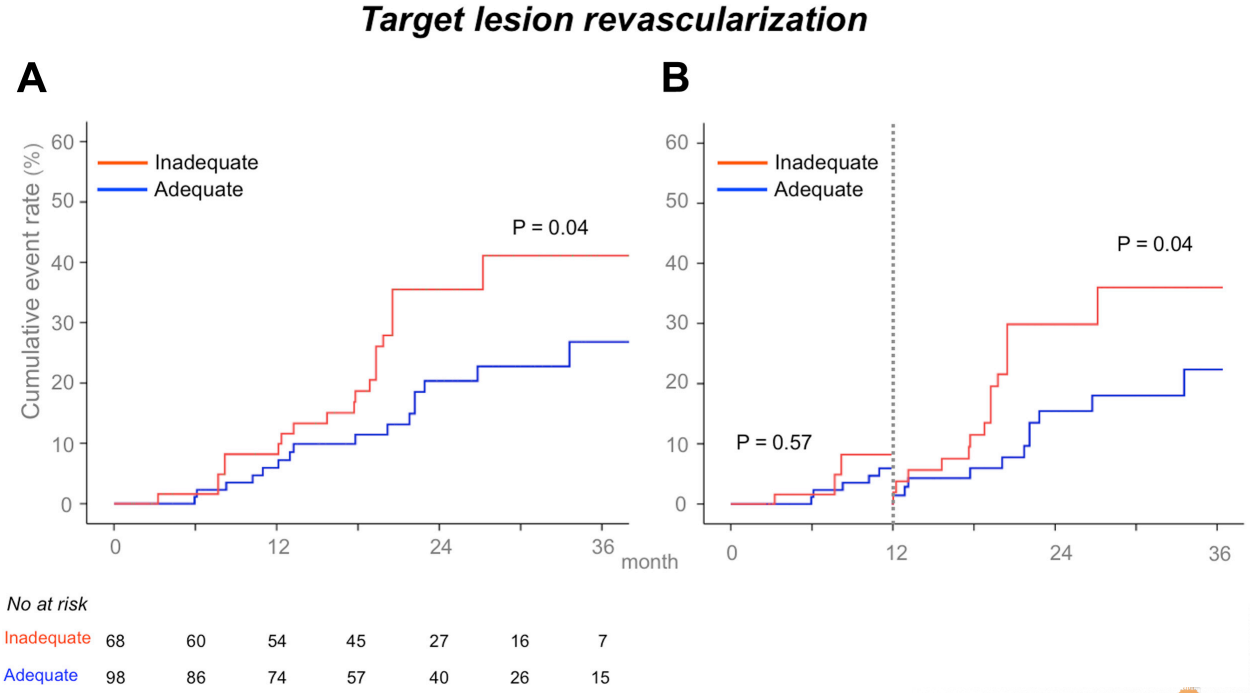
INDICATION UNDER DEFINITION

Importance of lesion preparation before DCB

Impact of Angiographic Result After Predilatation on Outcome After Drug-Coated Balloon Treatment of In-Stent Coronary Restenosis

Akihito Tanaka, MD[a,b], Azeem Latib, MD[a,b], Richard J. Jabbour, MD[a,b,c], Hiroyoshi Kawamoto, MD[a,b], Francesco Giannini, MD[b], Marco Ancona, MD[b], Damiano Regazzoli, MD[b], Antonio Mangieri, MD[b], Roberto Mattioli, MD[d], Alaide Chieffo, MD[b], Mauro Carlino, MD[b], Matteo Montorfano, MD[b], and Antonio Colombo, MD[a,b,*]





Tanaka A et al, Am J Cardiol. 2016 Nov 15;118(10):1460-1465

Ways to assess the result of lesion preparation

1. CORONARY ANGIOGRAPHY
2. INTRAVASCULAR IMAGING
3. CORONARY PHYSIOLOGY

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1. CORONARY ANGIOGRAPHY
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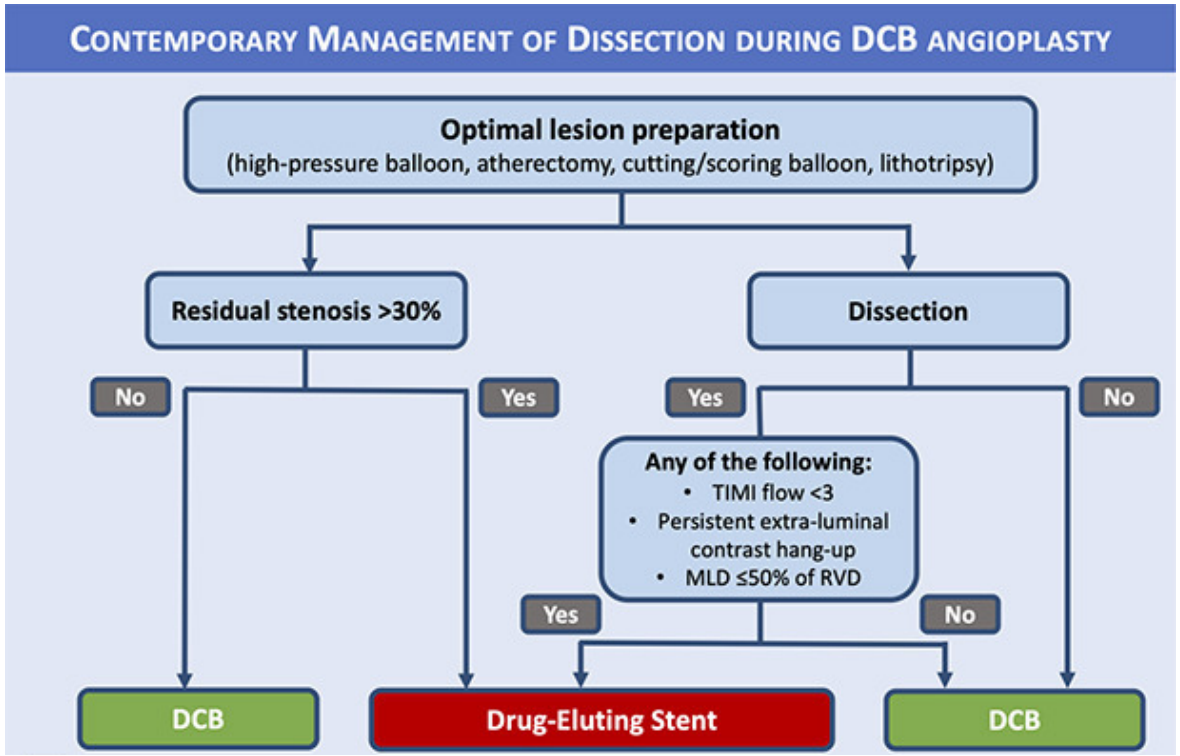
How to perform DCB angioplasty



- DCBs should be inflated at their nominal pressure with the only goal to deliver the antiproliferative drug to the vessel wall
- **DCBs are not tools for lesion preparation**

Gitto M, Leone PP, Colombo A et al, Am J Cardiol. 2025 Mar 15;239:28-35

Ways to assess the result of lesion preparation

1. CORONARY ANGIOGRAPHY
2. INTRAVASCULAR IMAGING
3. CORONARY PHYSIOLOGY

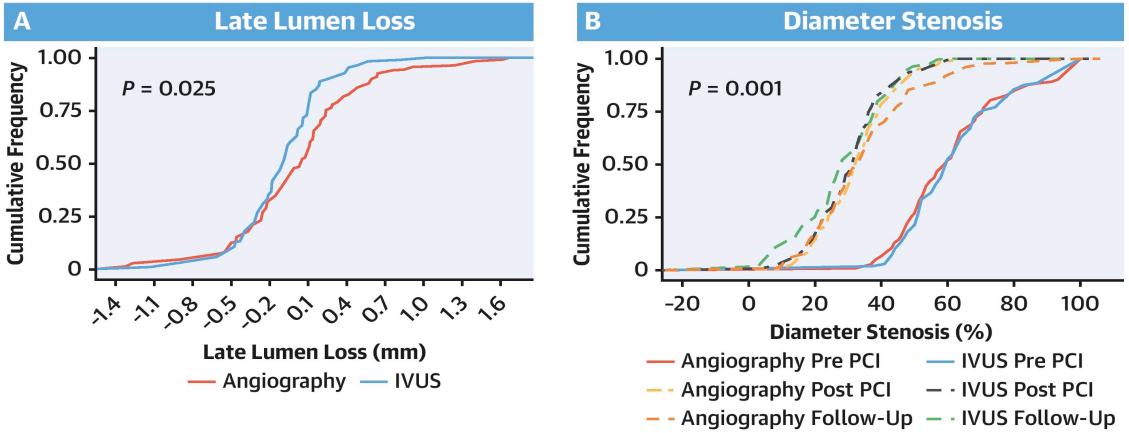
Intravascular Imaging

IVUS Guidance Versus Angiography Guidance During DCB Angioplasty in De Novo Coronary Lesions: The ULTIMATE III Trial

Patients with a coronary de novo lesion (N = 260)

- Angiography-Guided DCB Angioplasty (n = 130)
- IVUS-Guided DCB Angioplasty (n = 130)

Primary Endpoint: In-Segment Late Lumen Loss 7 Months After Procedure



How do we define adequate lesion preparation on intravascular imaging?

Gao XF et al, JACC Cardiovasc Interv. 2024 Jul 8;17(13):1519-1528

How to use IVUS to guide DCB angioplasty

1) **Assess MLA after lesion preparation** according to reference vessel diameter[1]
   - **MLA ≥4.5 mm²** for reference vessel diameter ~3.0 mm
   - **MLA ≥6.0 mm²** for reference vessel diameter ~3.5 mm
   - **MLA ≥7.5 mm²** for reference vessel diameter ~4.0 mm

2) **Evaluate residual dissections** using gray-scale IVUS
   - MLA at the dissection site >50% of vessel area
   - **Dark gray, granular speckled appearance:**
   communication between the true and false lumen
   → **safe-to-leave dissection**
   - **Bright gray or hyperechoic speckled appearance:**
   pressurized intramural hematoma with potential for **true lumen compression**

1. Chieffo A et al, Am Heart J. 2013 Jan;165(1):65-72

Ways to assess the result of lesion preparation

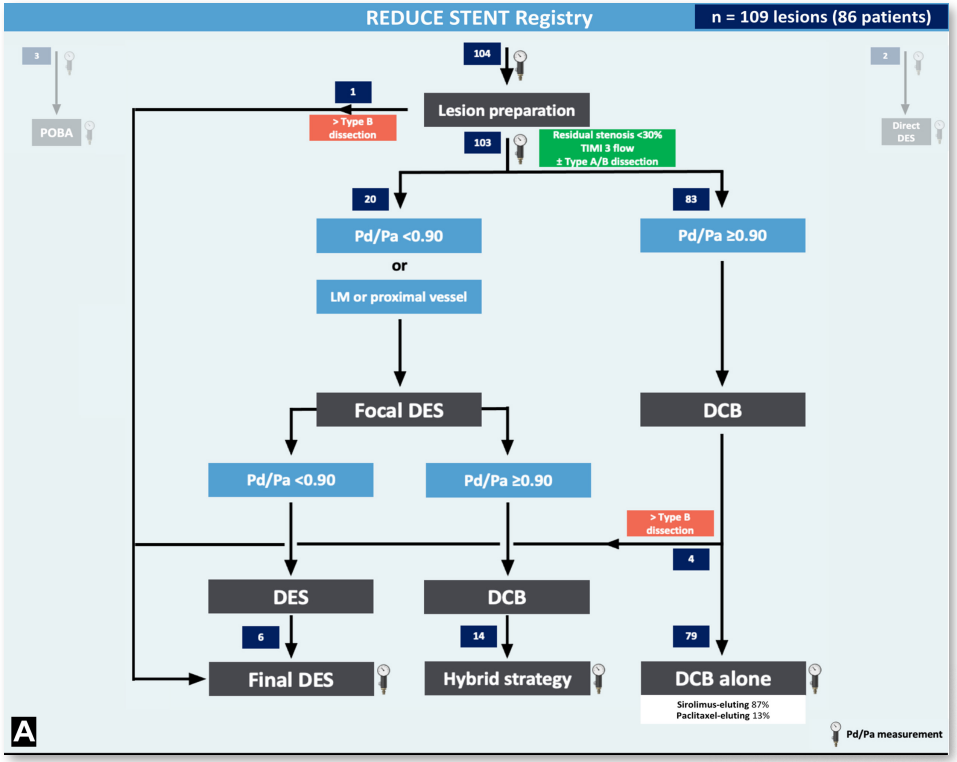
1. CORONARY ANGIOGRAPHY
2. INTRAVASCULAR IMAGING
3. CORONARY PHYSIOLOGY

Functional assessment

RESEARCH CORRESPONDENCE

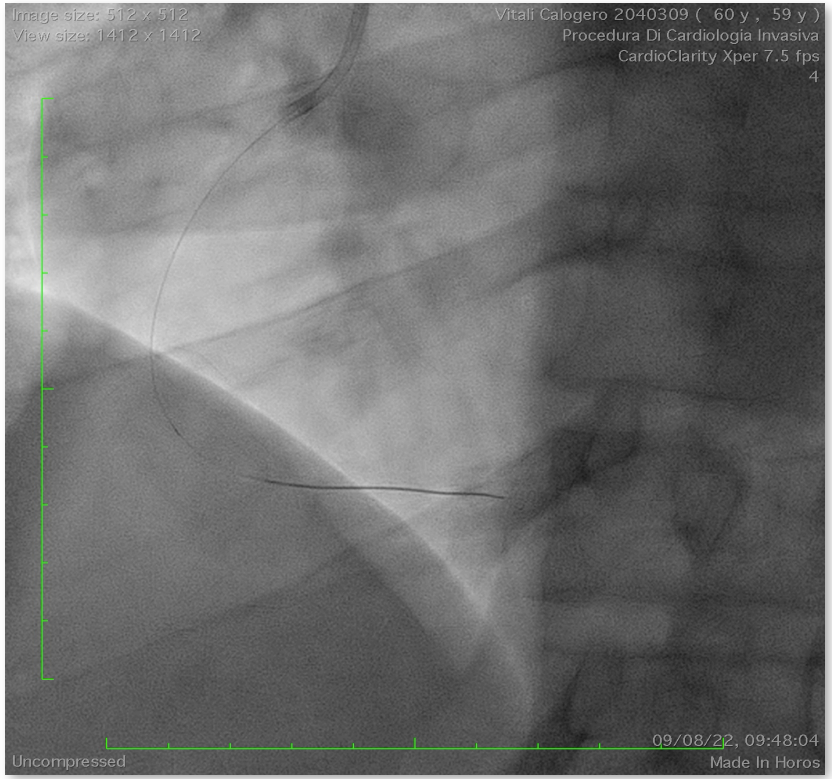
Drug-Coated Balloon Angioplasty Guided by Postpercutaneous Coronary Intervention Pressure Gradient

The REDUCE-STENT Retrospective Registry



Leone PP et al, JACC Cardiovasc Interv. 2023 Feb 13;16(3):363-365

Clinical Case. Pd/Pa guided RCA PCI



Male 68 years old

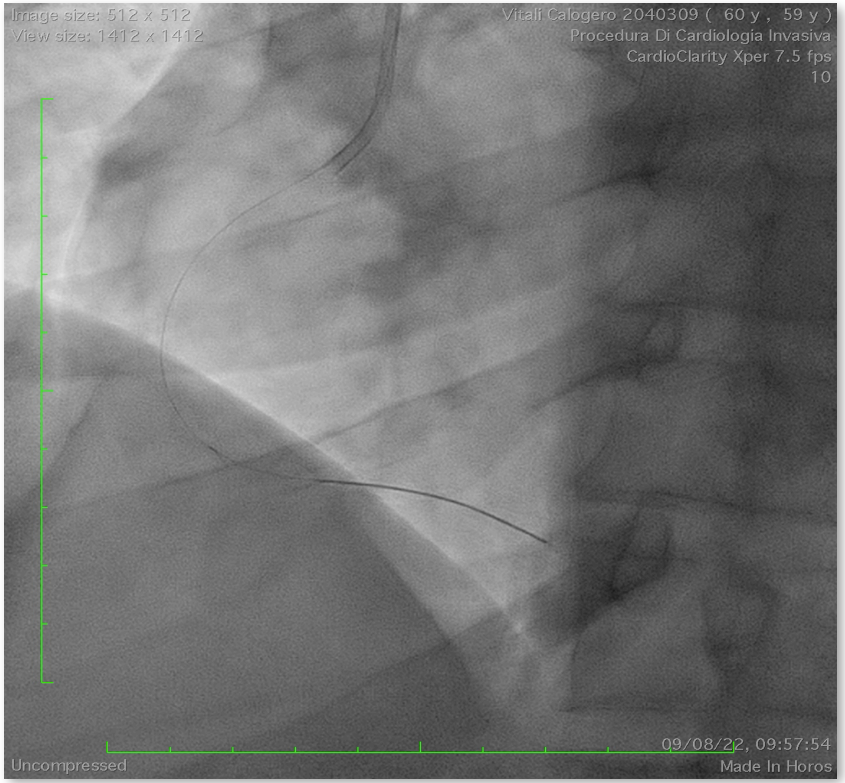
Symptomatic for dyspnea

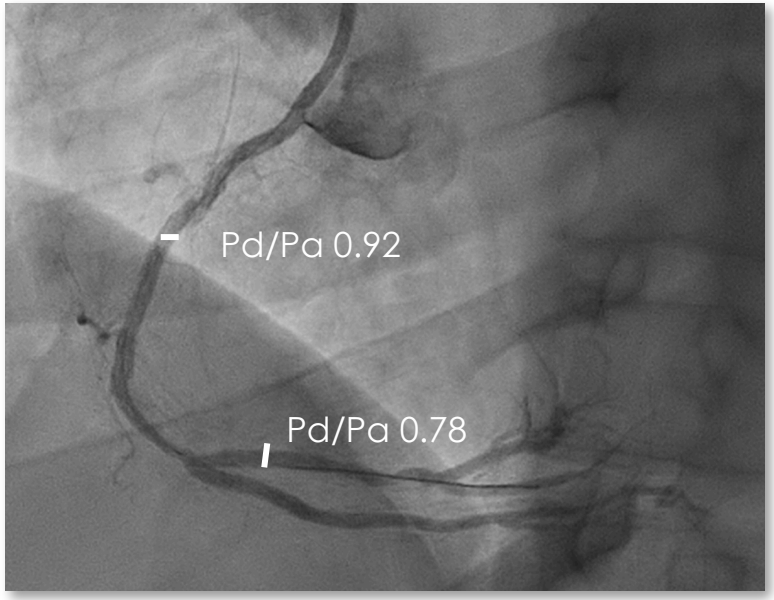
Diffuse disease of the RCA with multiple stenosis in the proximal segment

Planned revascularization using DCB

Baseline Pd/Pa 0.69, FFR baseline 0.79, DFR 0.77

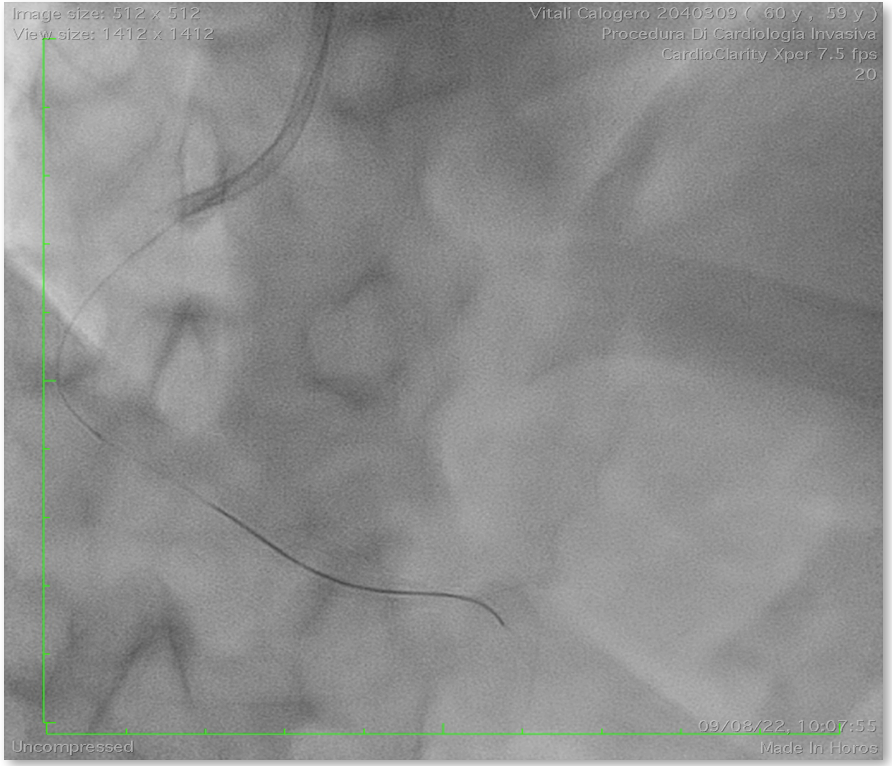
Clinical Case. Pd/Pa guided RCA PCI

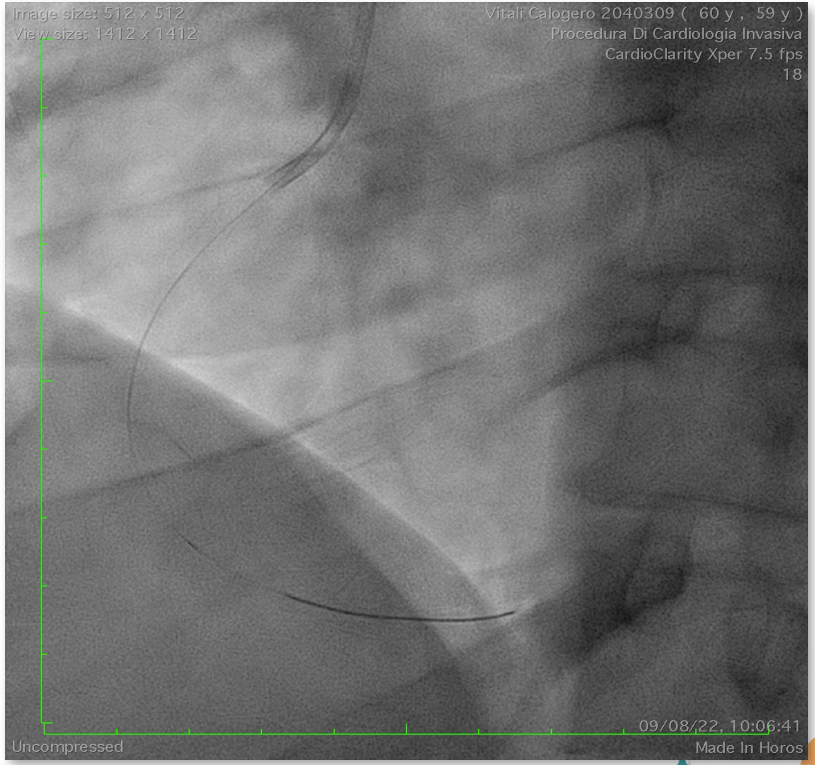




Further pre dilatation with a NC balloon 3.0@ 24 atm
Improvement of distal Pd/Pa: 0.78→ 0.90
Planned DCB mid-distal + DES proximal (3.0x18 mm)+ NC 3.5

Clinical Case. Pd/Pa guided RCA PCI





SPAGO Randomized Controlled Trial

Patients with **long** (length ≥30 mm) **lesions** on vessels with **RVD 2.0-3.0**

↓

Adequate Angiographic and Functional Result of Lesion Preparation
(No type D-F dissection, no stenosis ≥30%, TIMI 3, Pd/Pa ≥0.89)

↓

IMR and **CFR** assessment (Pressure Wire X, Abbott)

↓

R

↙ ↘

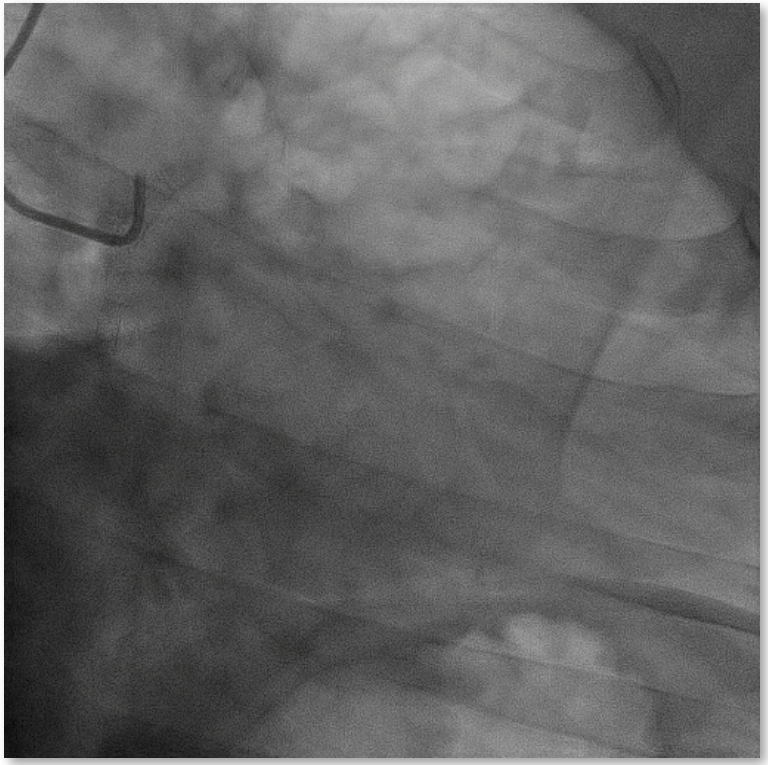
Selution SCB (Cordis) | **Sequent Please PCB** (B.Braun)

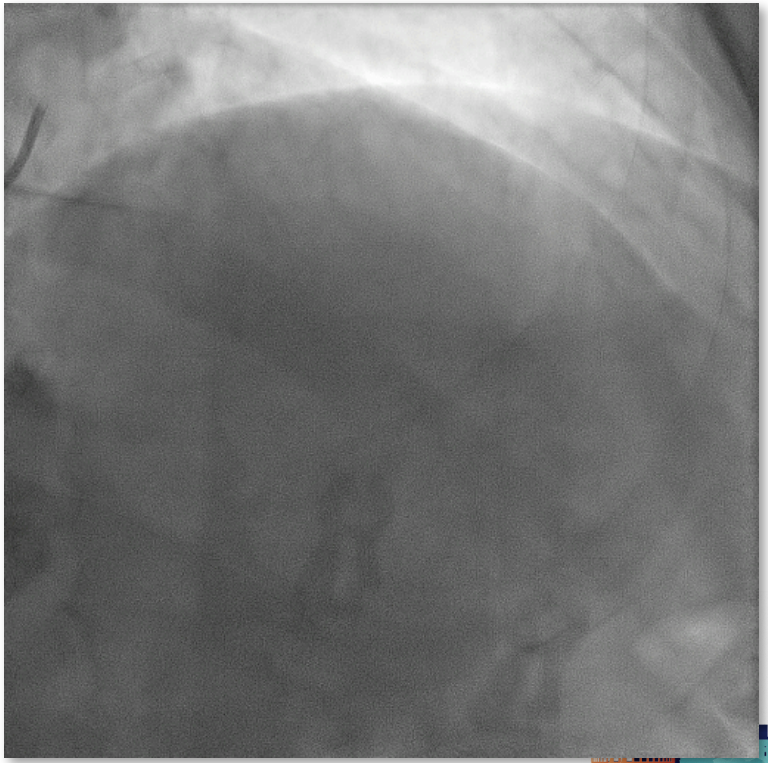
Post-PCI: **IMR** and **CFR** assessment (Pressure Wire X, Abbott)

1-year FU: **Angiographic Follow-up** (LLL, NLG)

Clinical Case from SPAGO

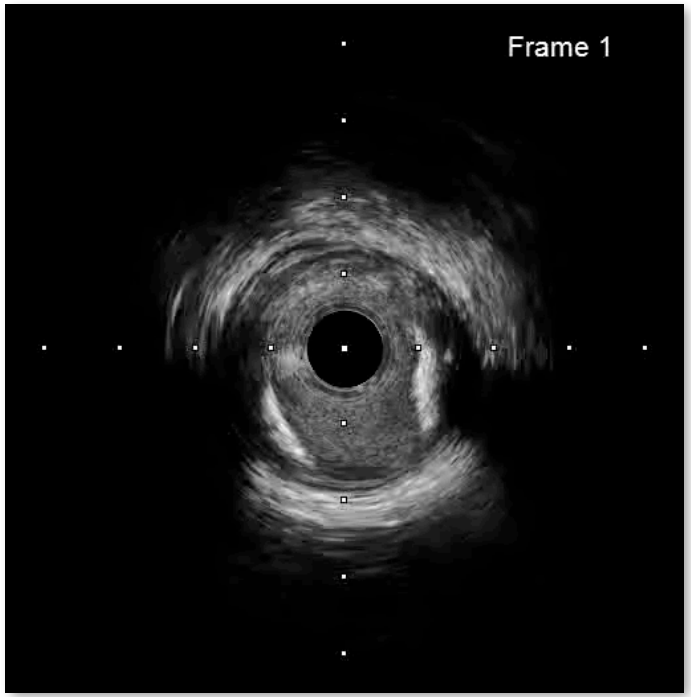
45 years-old man with long and functionally significant mid LAD lesion (FFR 0.76)



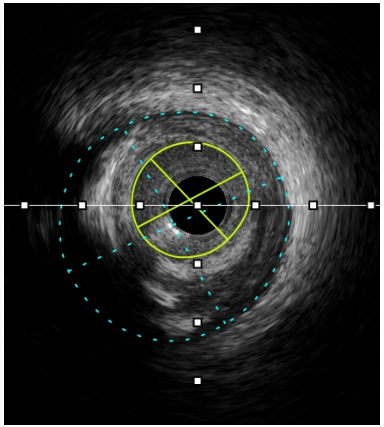


Clinical Case from SPAGO

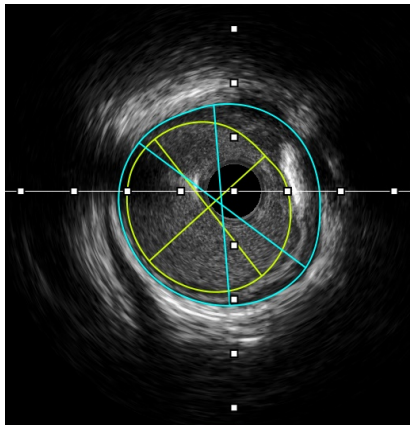
Baseline IVUS assessment



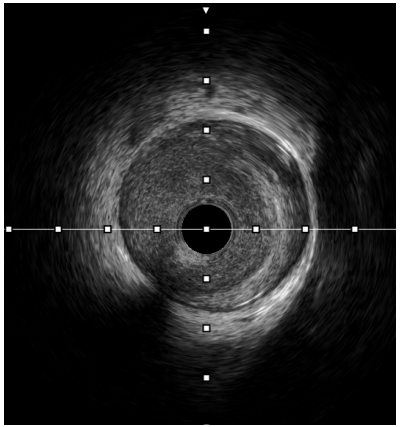
MLA: 3.10 mm^2



Distal RVD: 3.0 mm



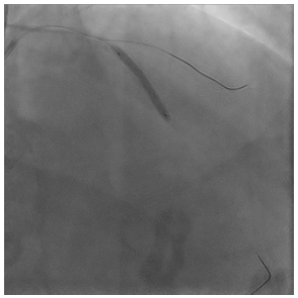
Prox RVD: 3.5 mm

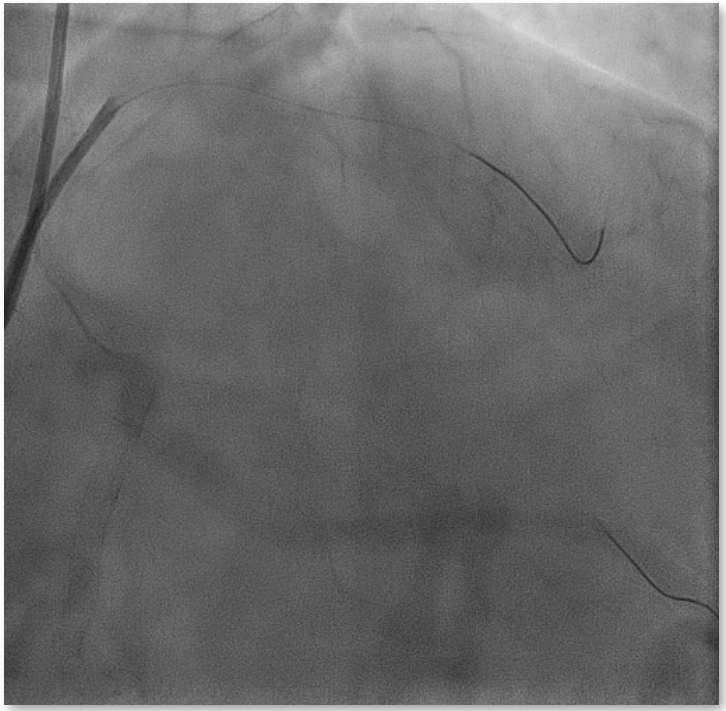


Clinical Case from SPAGO

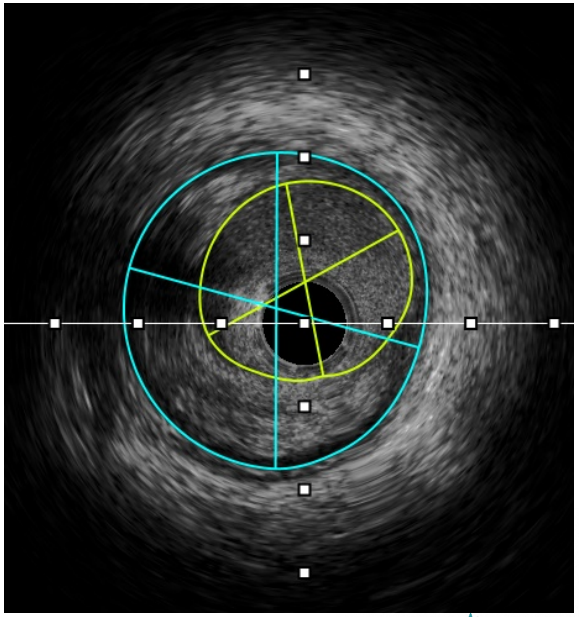
Angiographic, IVUS and functional result **after lesion preparation** (**Pd/Pa 0.92**)

NC3.0x30 mm balloon (prolonged Inflations, max 16 atm)





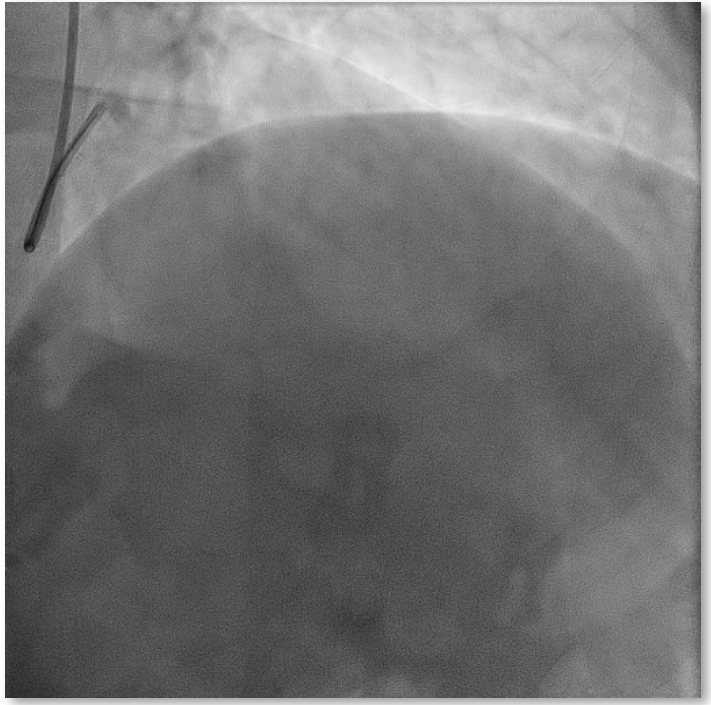
MLA: 4.80 mm2
Type B dissection (dark grey)

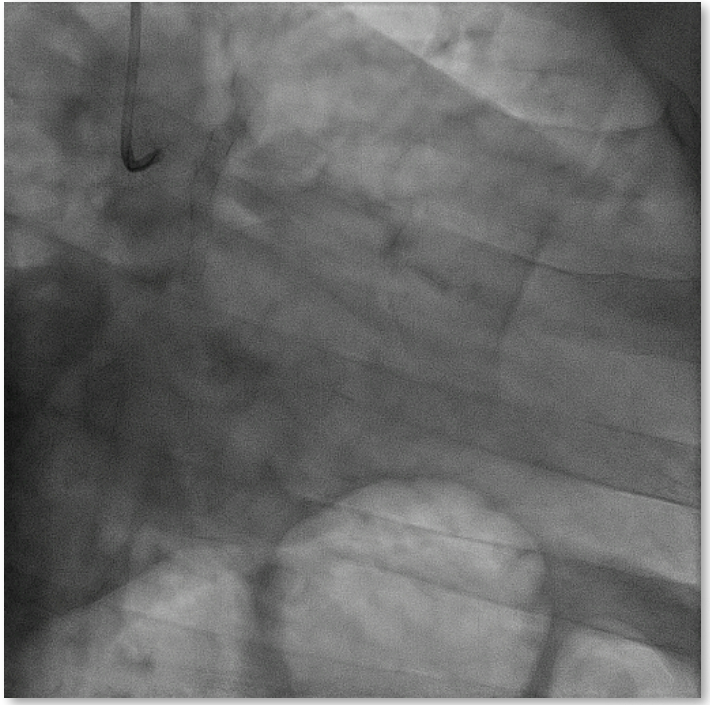


PressureWire X Assessment after lesion prep: **IMR 32, CFR 3.0**

Clinical Case from SPAGO

Selution SCB 3.0x40 mm (8 atm, 60 sec)





PressureWire X Assessment after SCB: **IMR 21, CFR 3.3**

Take home messages

- The success of DCB-based PCI largely depends on careful assessment of the result of lesion preparation
- Coronary angiography remains the cornerstone of lesion preparation assessment, while **IVUS** and **coronary physiology** may provide complementary information in selected cases.
- Although standardized IVUS criteria are lacking, IVUS assessment should integrate both minimum lumen area (MLA) and the qualitative characteristics of residual dissections