DCB for PCI When and How

Antonio Colombo

Centro Cuore Columbus and
Humanitas IRCCS, Rozzano, Milan, Italy

No conflicts to disclose

JACC Journals › JACC › Archives › Vol. 86 No. 15

FULL ACCESS | JACC State-of-the-Art Review | 6 October 2025

Indications for Use of Drug-Coated Balloons in Coronary Intervention: Academic Research Consortium Position Statement

Authors: Simone Fezzi, Patrick W. Serruys, Bernardo Cortese, Bruno Scheller, Fernando Alfonso, Raban Jeger, Antonio Colombo, … SHOW ALL … , and Yoshinobu Onuma | AUTHORS INFO & AFFILIATIONS

Publication: JACC • Volume 86, Number 15

1. homogeneous drug delivery to the vessel wall;

2. the absence of a foreign body after drug elution with the possibility of long-term vessel remodelling;

3. the possibility to preserve physiological vasomotion in response to increased oxygen demands;

4. the option of using DCB catheters as a stand-alone technology or in combination with a stent;

5. the potential of reducing the intensity and/or duration of antiplatelet therapy;

6. uncaged lesions remain amenable to regression through potent antiatherogenic drugs (eg, vulnerable plaques);

7. the possibility to avoid side branch (SB) jailing and reduce carina shifting in bifurcation lesions; and

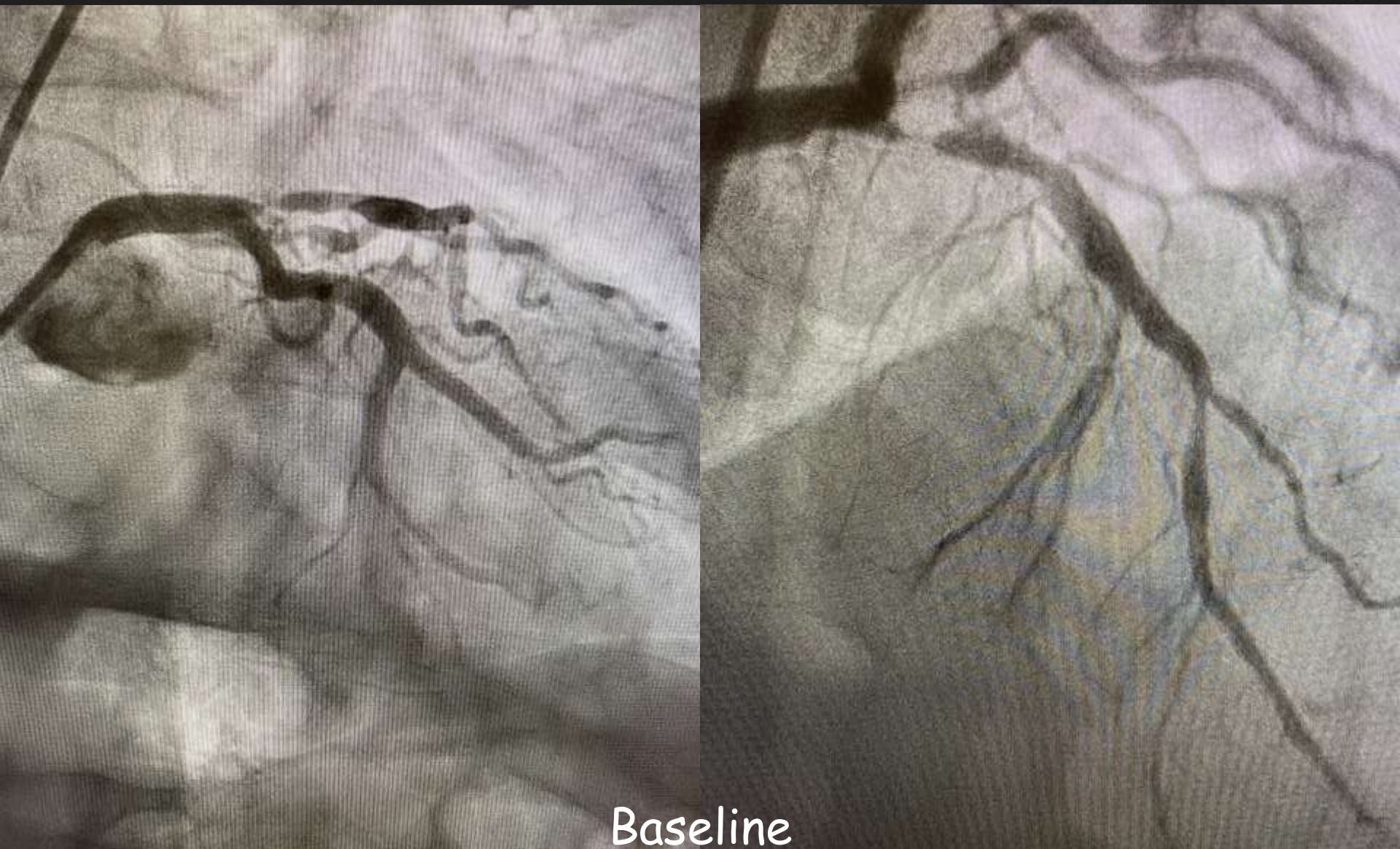
8. reinterventions are not limited by previously implanted metallic scaffolds.

When to use DCB

Philosophical approach: metal should be avoided. DCB should be used to replace DES every time it's possible (no impending closure, no poor result)

Pragmatic approach: DCB should be used in settings where DES perform suboptimally or are more problematic to be implanted or in patients in whom DES should avoided or minimized (high bleeding risk)

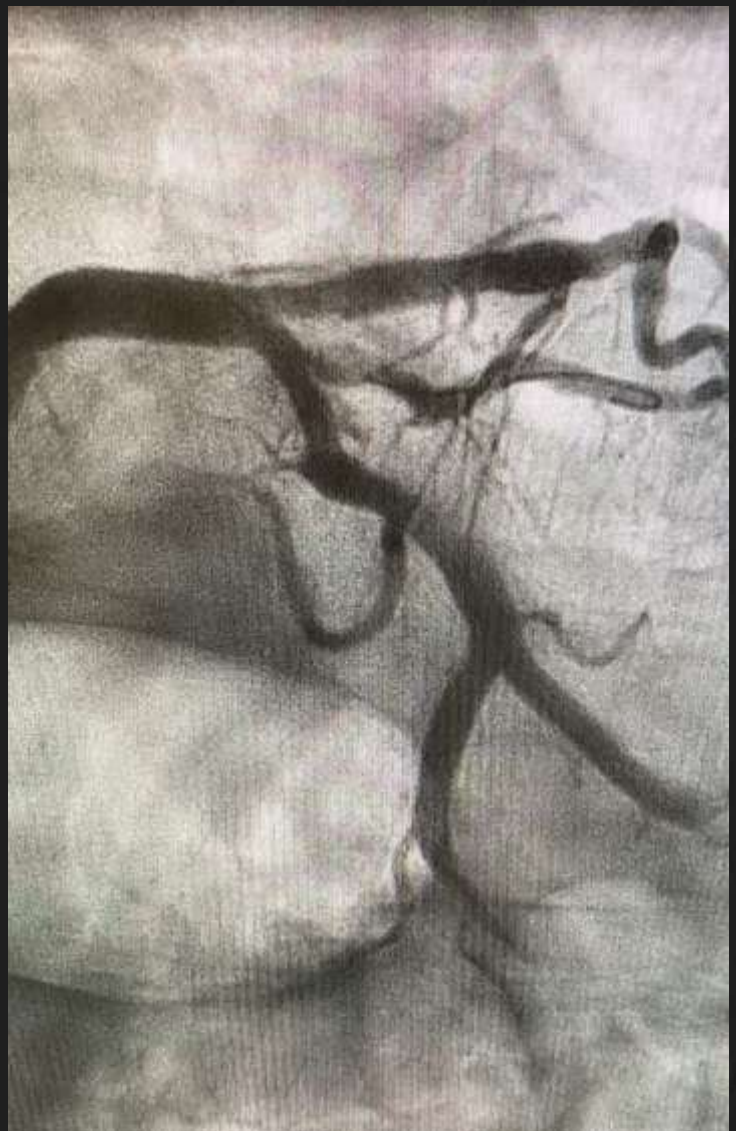
Philosophical approach

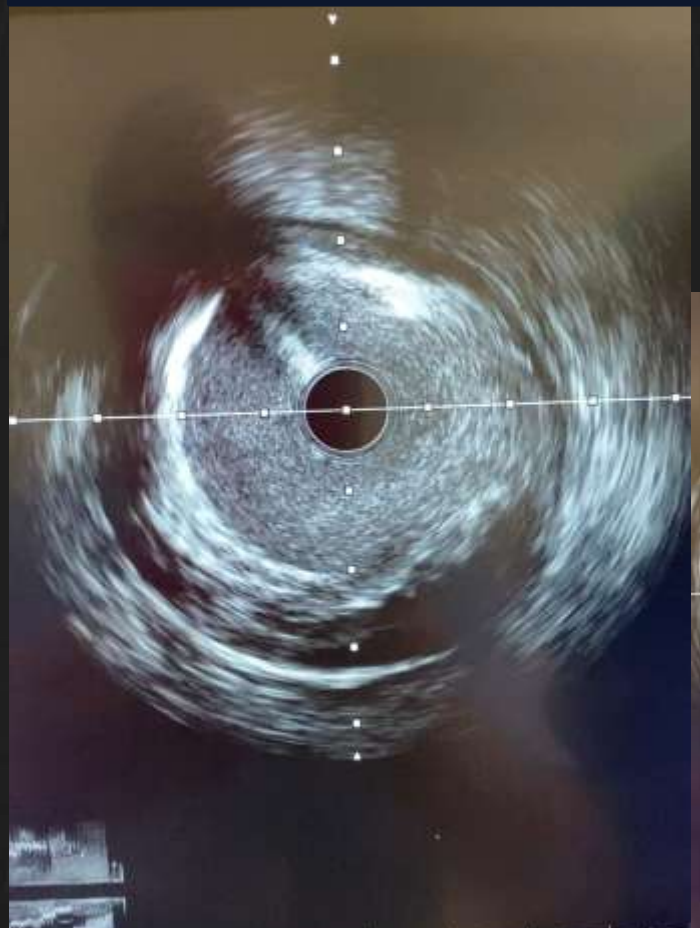


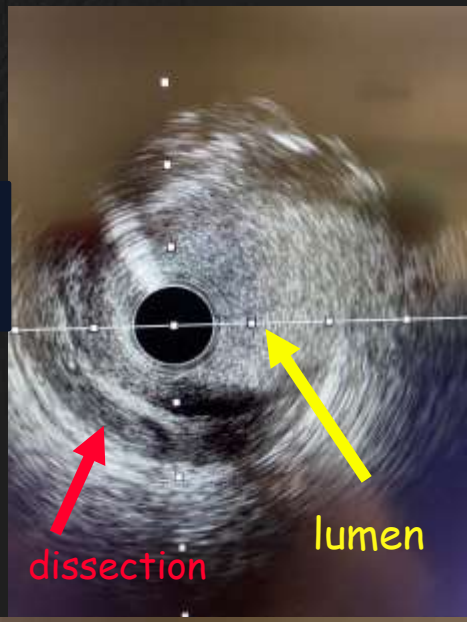
Baseline

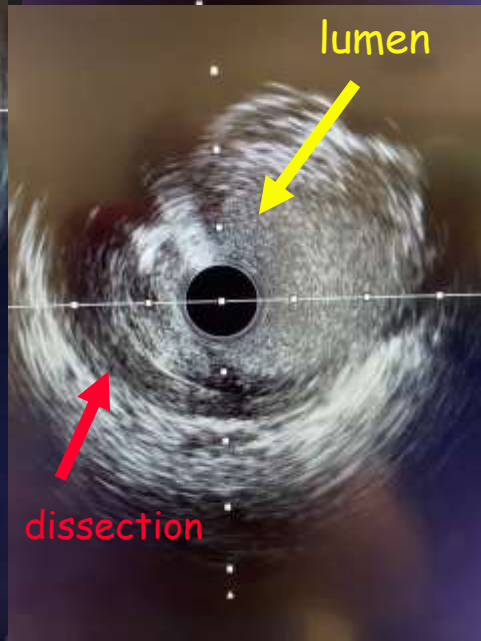
After PTCA: 3.5/30 mm NC distal, 4.0/20 mm NC and 4.0/10 Cutting Balloon prox

Philosophical approach









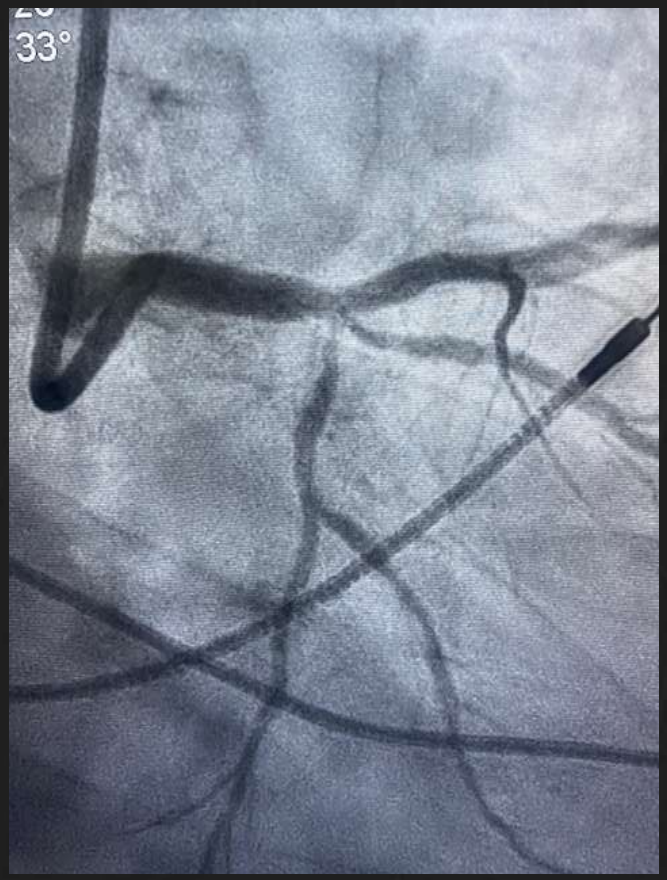
When we use DCB according to a Pragmatic Approach

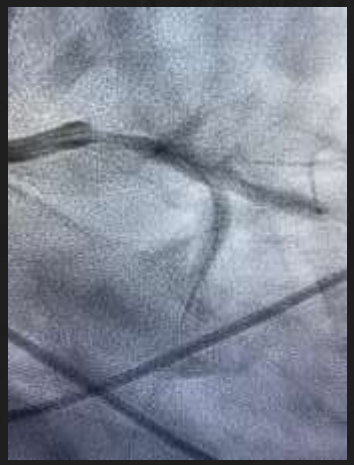
To simplify the procedure

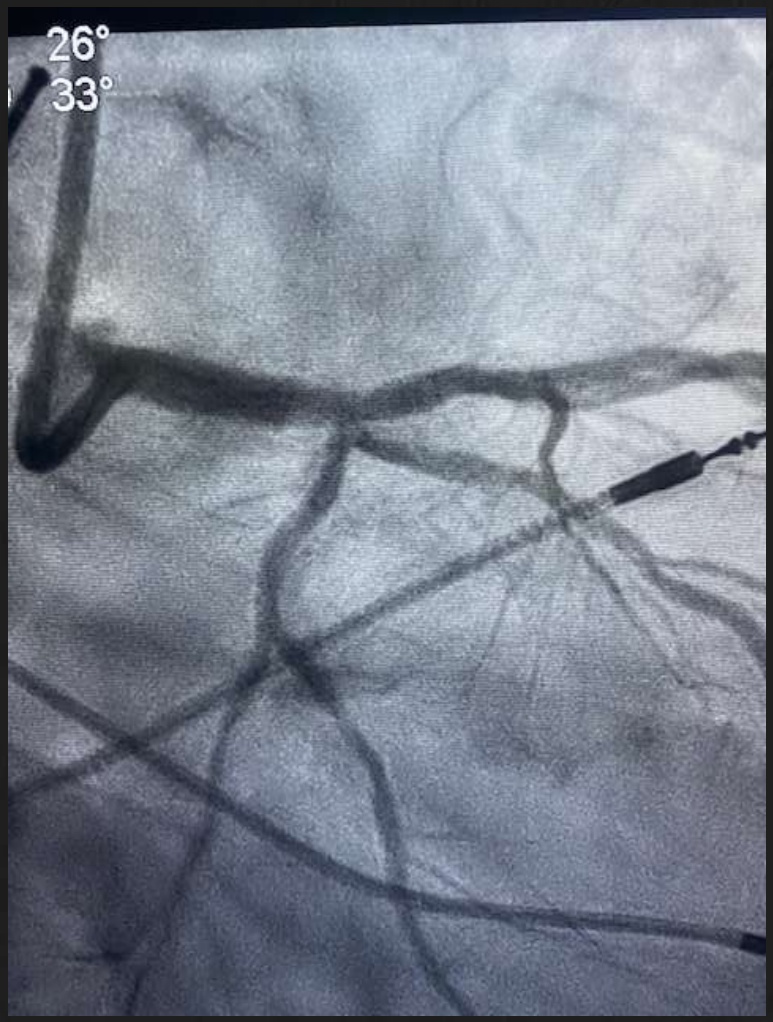
To avoid full metal jacket especially on LAD

In high bleeding risk patients to avoid excessive stenting with the need for prolonged DAPT

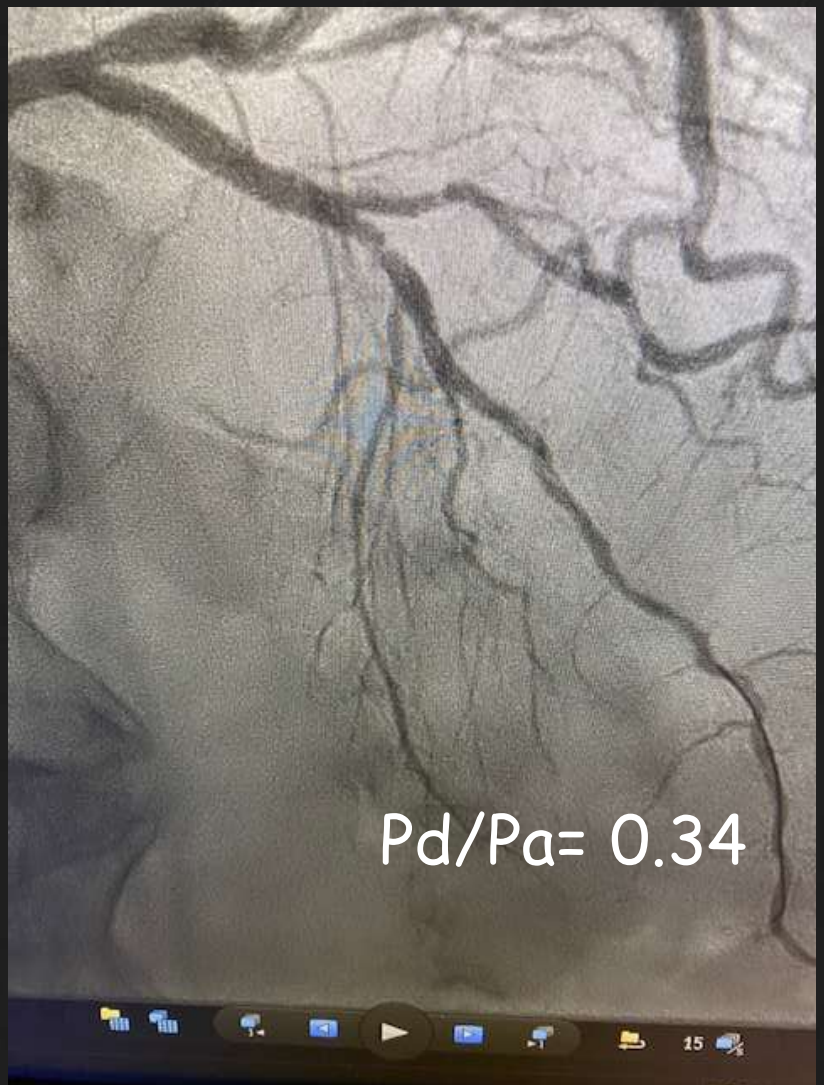
To simplify the procedure

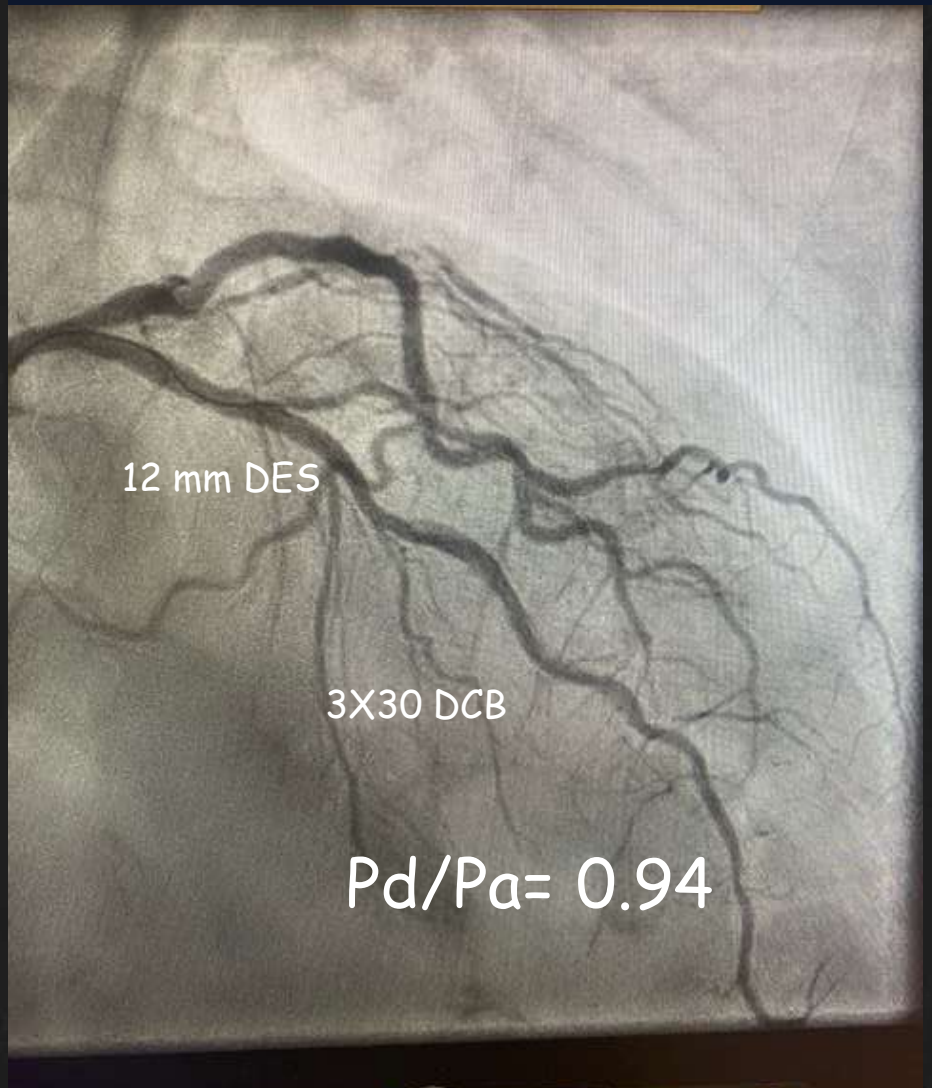




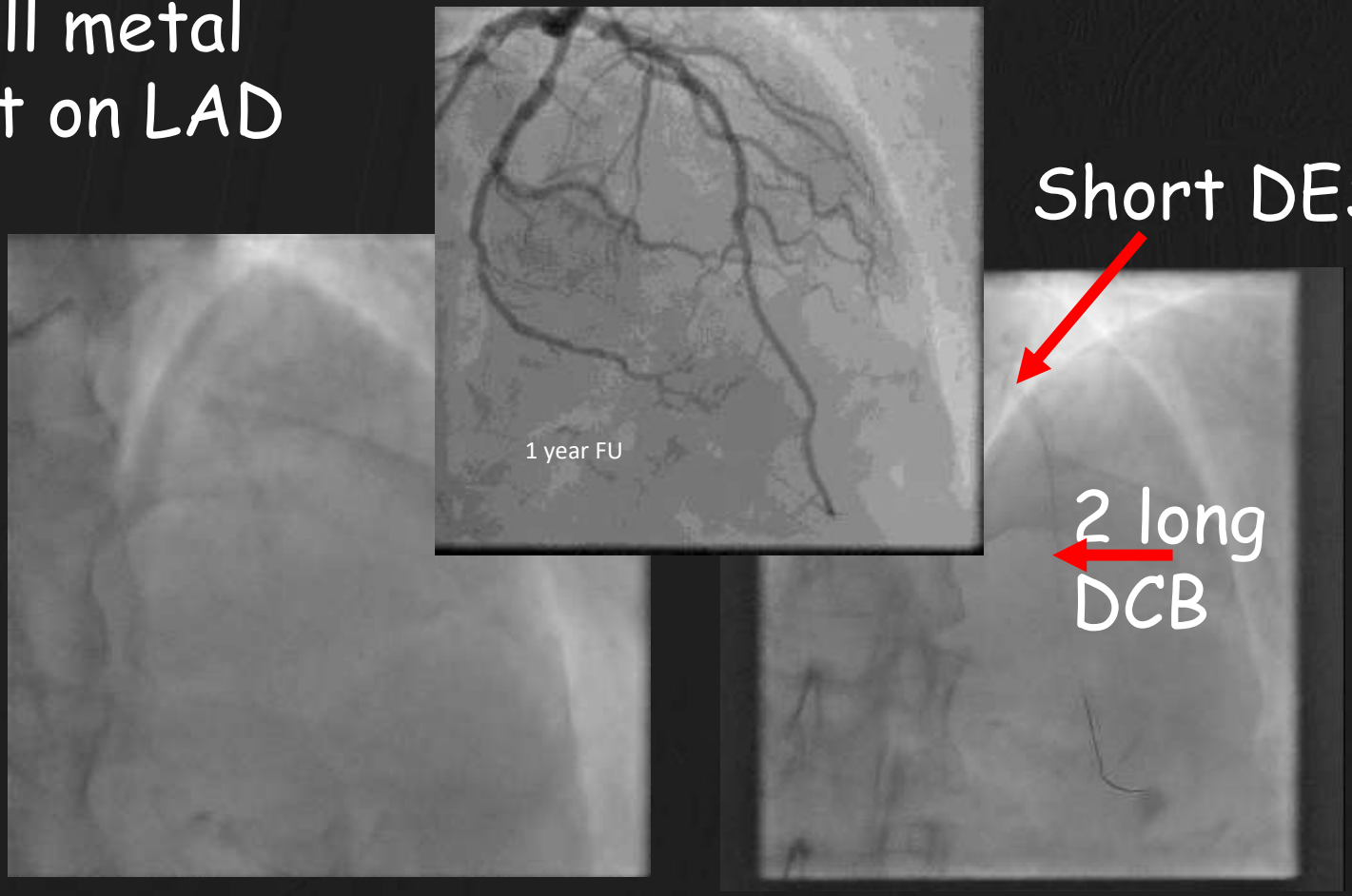

26°
33°

To avoid "full metal jacket" especially on LAD



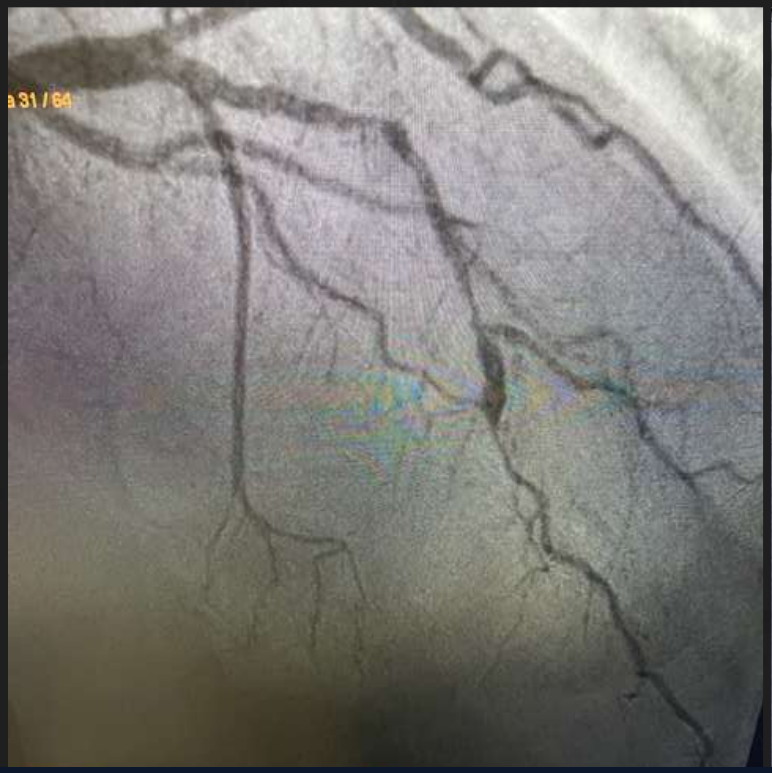


No full metal jacket on LAD



Rotational atherectomy,
NC balloons and 3 long DCB

6-month follow-up
DFR 0.91



research-article

Circulation: Cardiovascular Interventions

ORIGINAL ARTICLE

Drug-Coated Balloon Angioplasty for De Novo Lesions on the Left Anterior Descending Artery

Mauro Gitto, MD*; Alessandro Sticchi, MD*; Mauro Chiarito, MD; Laura Novelli, MD; Pier Pasquale Leone, MD, MSc; Gianluca Mincione, MD; Angelo Oliva, MD; Francesco Condello, MD; Marco Luciano Rossi, MD; Damiano Regazzoli, MD; Gabriele Gasparini, MD; Ottavia Cozzi, MD; Giulio G. Stefanini, MD; Gianluigi Condorelli, MD; Bernhard Reimers, MD; Antonio Mangieri, MD; Antonio Colombo, MD

Circ Cardiovasc Interv. 2023;16:e013232.
DOI: 10.1161/CIRCINTERVENTIONS.123.013232

Long De Novo LAD Disease

DCB-based PCI (N=147)

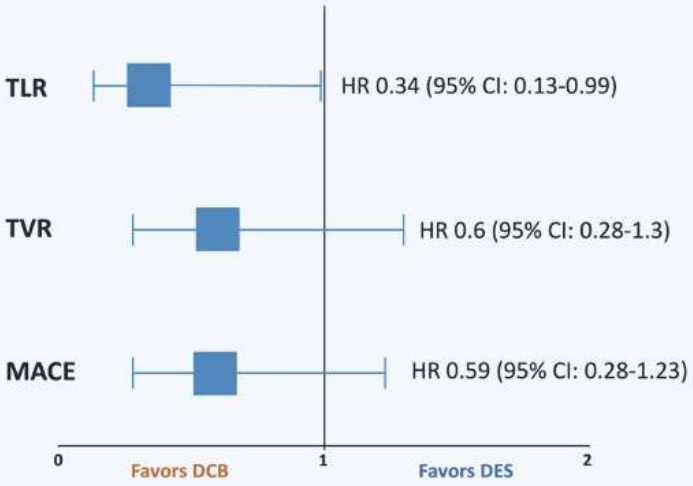
- Hybrid PCI in 70.8% of pts
- DCB length > DES length in 61.9% of patients

DES-only PCI (N=701)

- Short (<23 mm) DES excluded

1:1 PSM to account for imbalance in baseline clinical and angiographic covariates → 144 matched pairs

Lower risk of TLR with DCB after PSM



147 pts treated with DCB *propensity matched (**PSM**)* with 147 pts. treated only with DES

Dissections are not a complication

Circulation 72, No. 3, 530-535, 1985.

Influence of intimal dissection on restenosis after successful coronary angioplasty

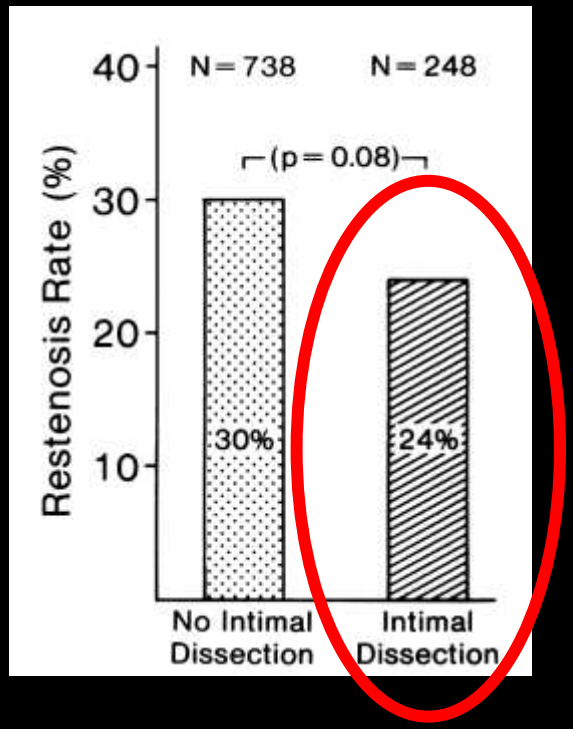
Pierre P. Leimgruber, M.D.,* Gary S. Roubin, M.B., Ph.D., H. Vernon Anderson, M.D., Clayton E. Bredlau, M.D., Hall B. Whitworth, M.D., John S. Douglas, Jr., M.D., Spencer B. King III, M.D., and Andreas R. Greuntzig, M.D.

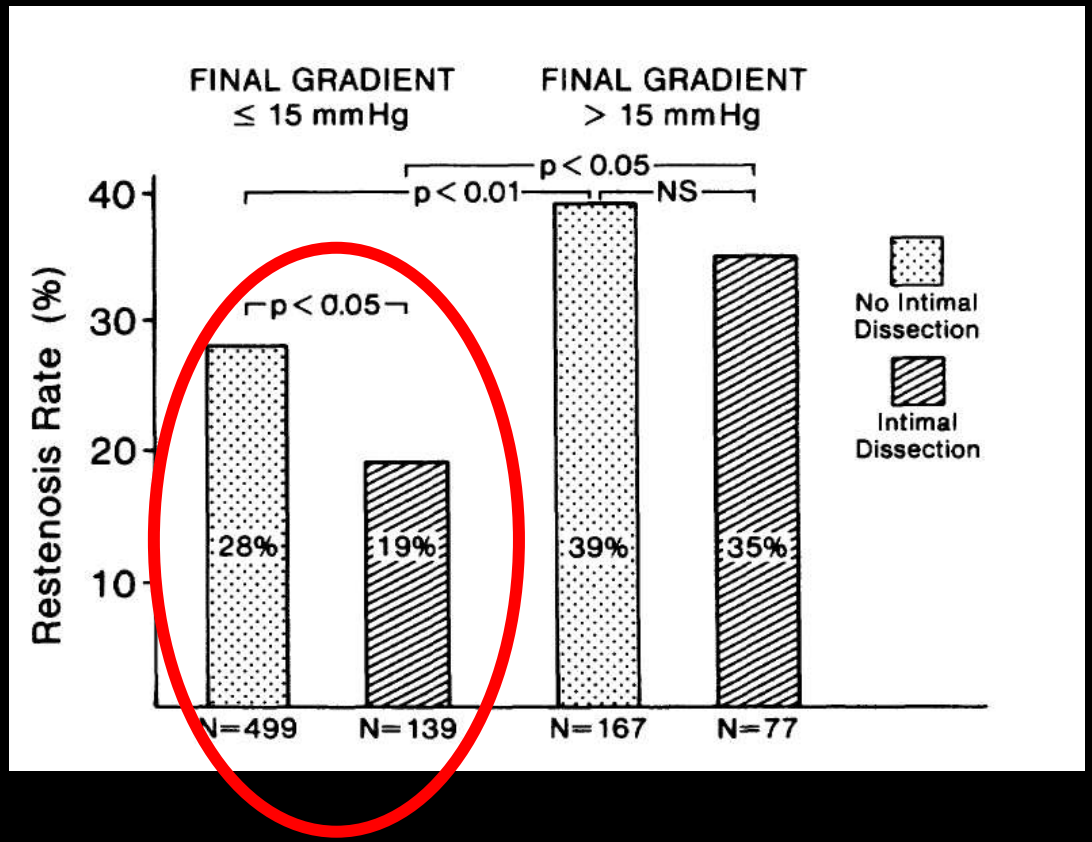
Best combination

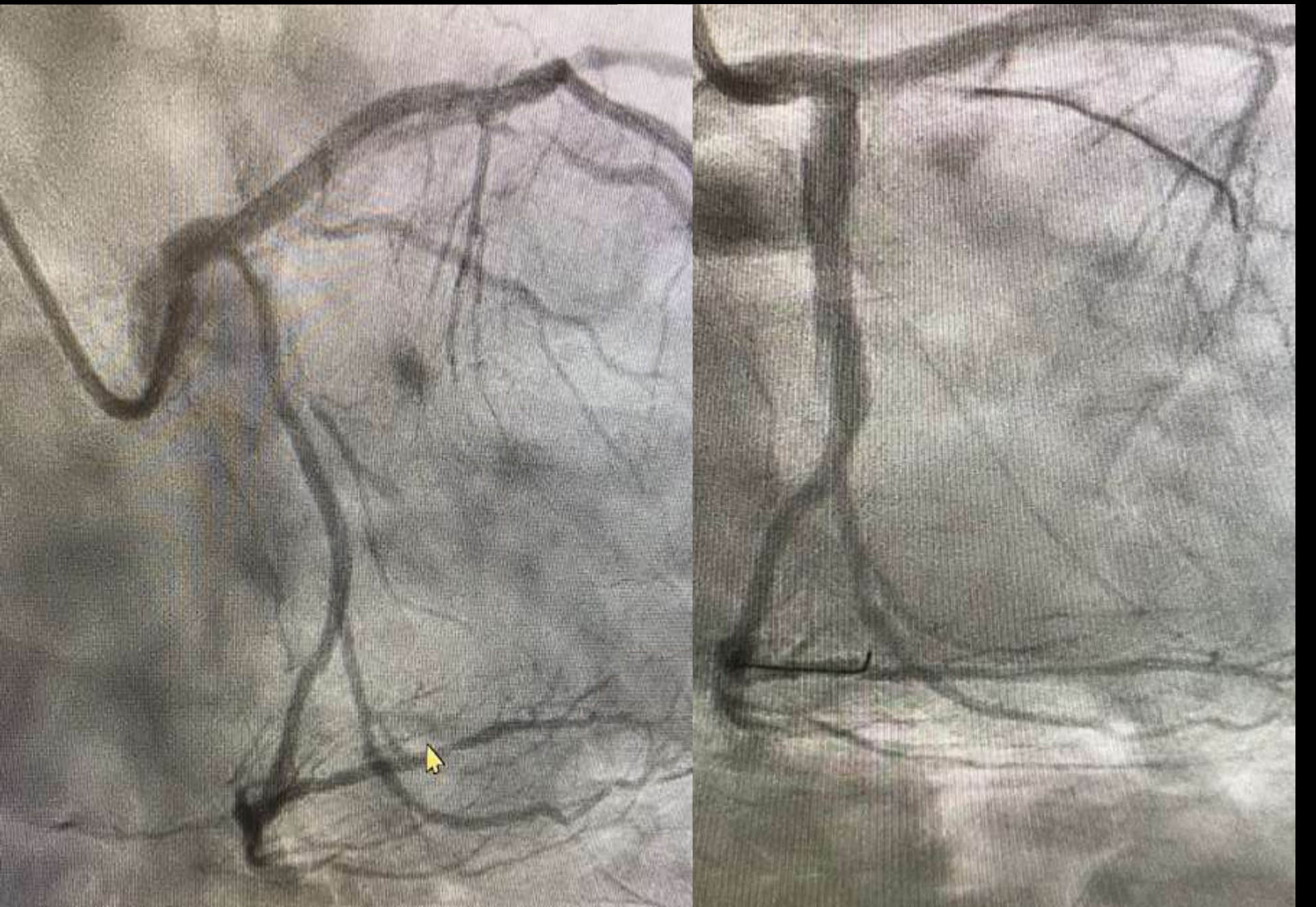
Low gradient

+

Dissection







Eurointervention 2024

Predictors of target lesion failure after percutaneous coronary intervention with a drug-coated balloon for *de novo* lesions

Tetsumin Lee[1]*, MD, PhD; Takashi Ashikaga[1], MD, PhD; Toshihiro Nozato[1], MD, PhD; Yasutoshi Nagata[1], MD; Masakazu Kaneko[1], MD, PhD; Ryoichi Miyazaki[1], MD; Toru Misawa[1], MD; Yuta Taomoto[1], MD; Shinichiro Okata[1], MD, PhD; Masashi Nagase[1], MD; Tomoki Horie[1], MD; Mao Terui[1], MD; Daigo Kachi[1], MD; Yuki Odanaka[1], MD; Kazuki Matsuda[1], MD; Michihito Naito[1], MD; Ayaka Koido[1], MD; Taishi Yonetsu[2], MD, PhD; Tetsuo Sasano[2], MD, PhD

**Corresponding author: Department of Cardiology, Japanese Red Cross Musashino Hospital, 1-26-1 Kyonancho, Musashinoshi, Tokyo, 180-8610, Japan. E-mail: tetsumin@gmail.com*

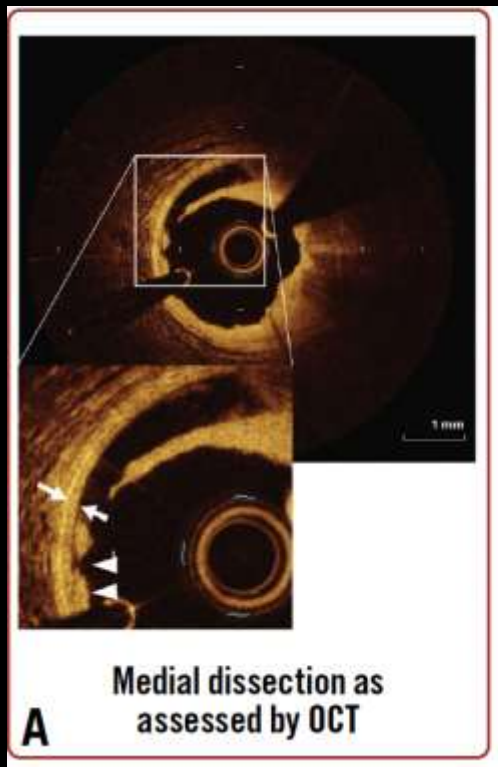
The authors' affiliations can be found at the end of this article.

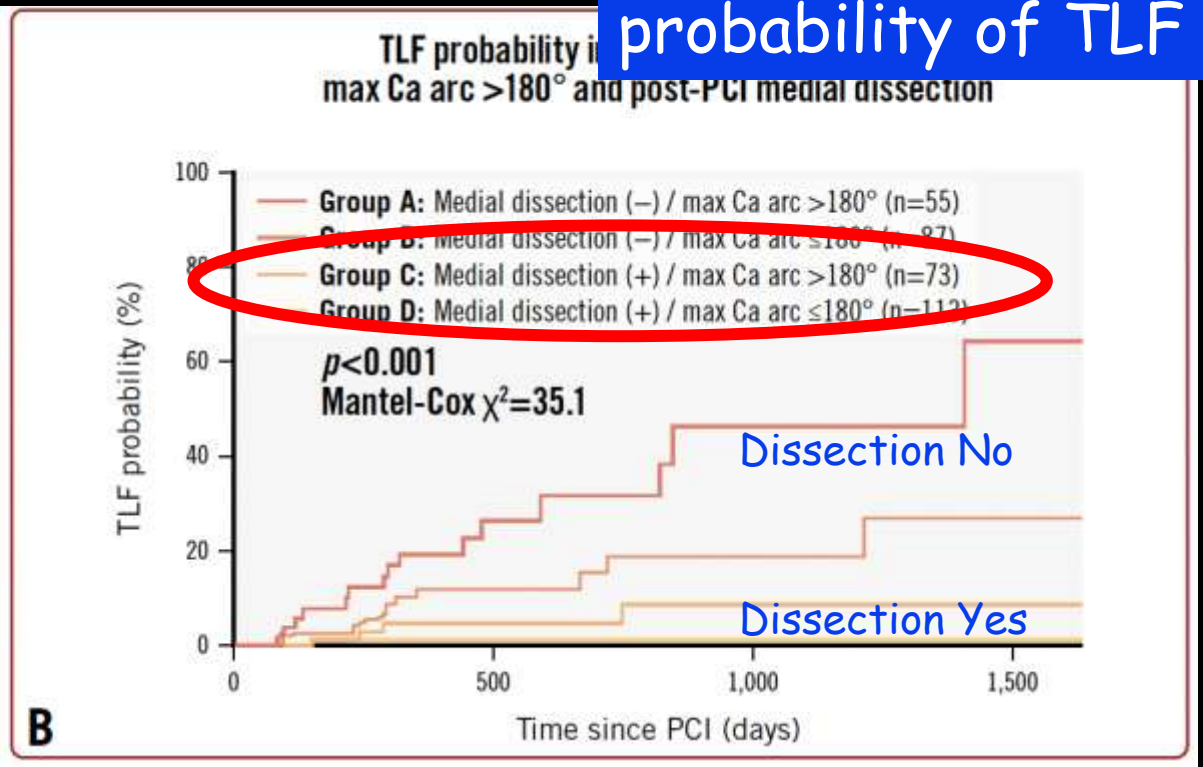
This paper also includes supplementary data published online at: https://eurointervention.pcron

328 pts evaluated

Dissections occurred in 186 pts

The presence of a dissection lowered the probability of TLF





The journey started we need to wait for long term results

Comparing a strategy of sirolimus-eluting balloon treatment to drug-eluting stent implantation in de novo coronary lesions in all-comers: Design and rationale of the SELUTION DeNovo Trial

Christian Spaulding, MD, PhD[a,*], Florian Krackhardt, MD[b,*], Kris Bogaerts, PhD[c,d], Philip Urban, MD[e], Susanne Meis, BA[f], Marie-Claude Morice, MD[g], and Simon Eccleshall, MD[h] *Paris, France; Berlin, Germany*

American Heart Journal, epub January 2023
https://doi.org/10.1016/j.ahj.2023.01.007

3326 pts
TVF
1 and 5 yrs

TCT October 2025

ClinicalTrials.gov Identifier: NCT04859985

Shigeru Nakamura

Interventional Cardiologist

in Kyoto

We are working debulking plus DCB strategy for 75% of lesions.

DES use is 16% of lesions.