Current Status of DCB Therapy

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Nothing to disclose

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ESC
European Society of Cardiology
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VIEWPOINT
Interventional cardiology

Redefining the way to perform percutaneous coronary intervention: a view in search of evidence

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Philosophical approach: metal should be avoided/minimized, 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 suboptimal, more problematic to be implanted, in patients in whom DES should be minimized to shorten DAPT duration.
Usage of a hybrid strategy (DES+DCB) is encouraged.

DCB should not be a competitor of DES, we need to find the "sweet spot " where the use of DCB is simpler, not inferior, sometime superior to DES

The evaluation of this approach will require a

STRATEGY Trial

DES without DCB availability
versus
DES with DCB availability

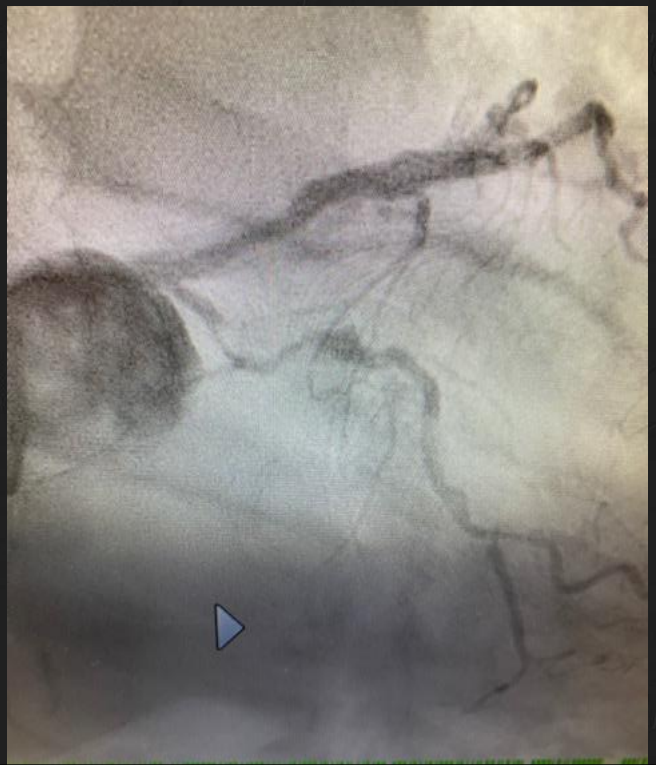
When we use DCB according to a Pragmatic Approach

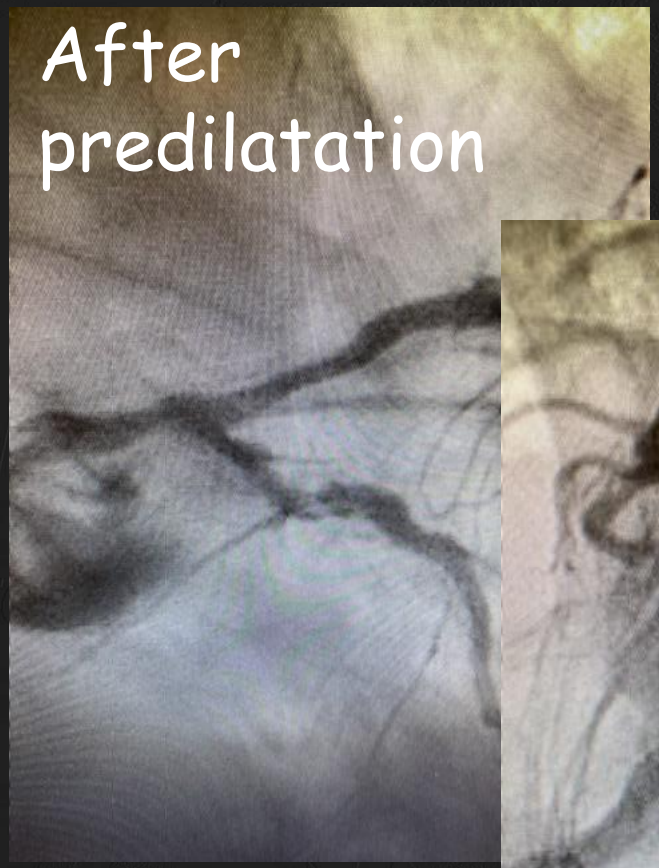
To simplify the procedure

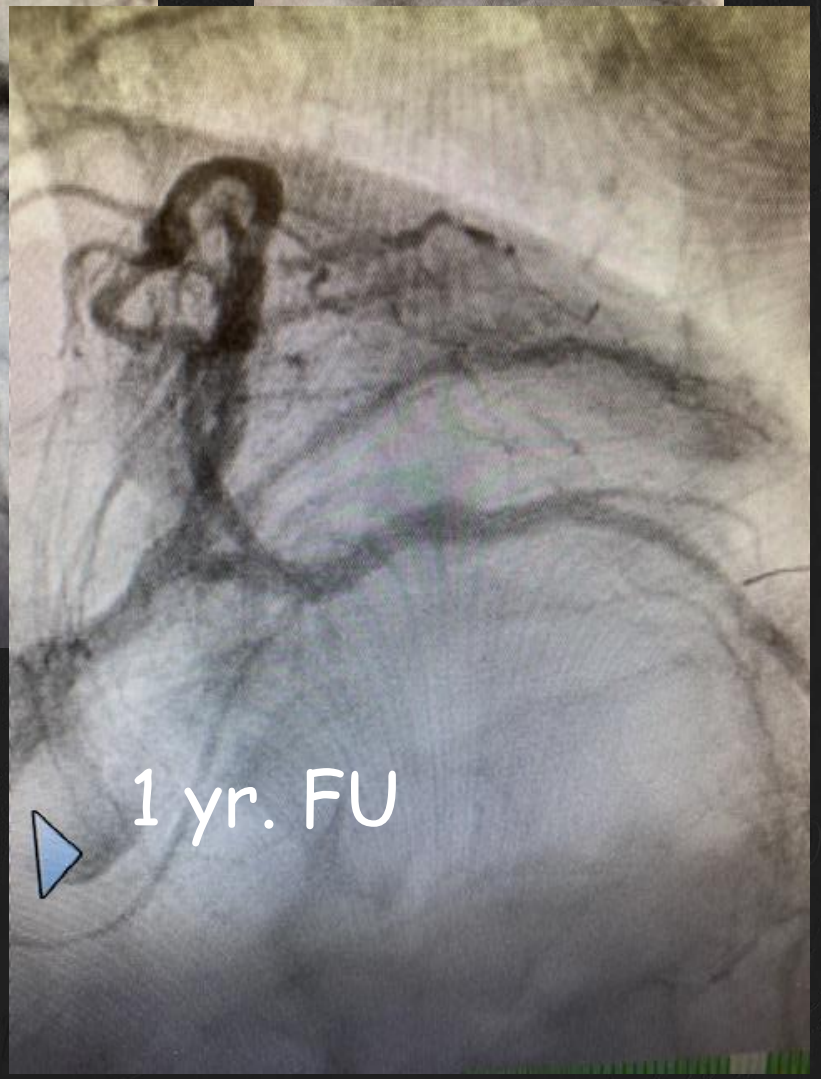
To avoid full metal jacket especially on LAD

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

To simplify the procedure







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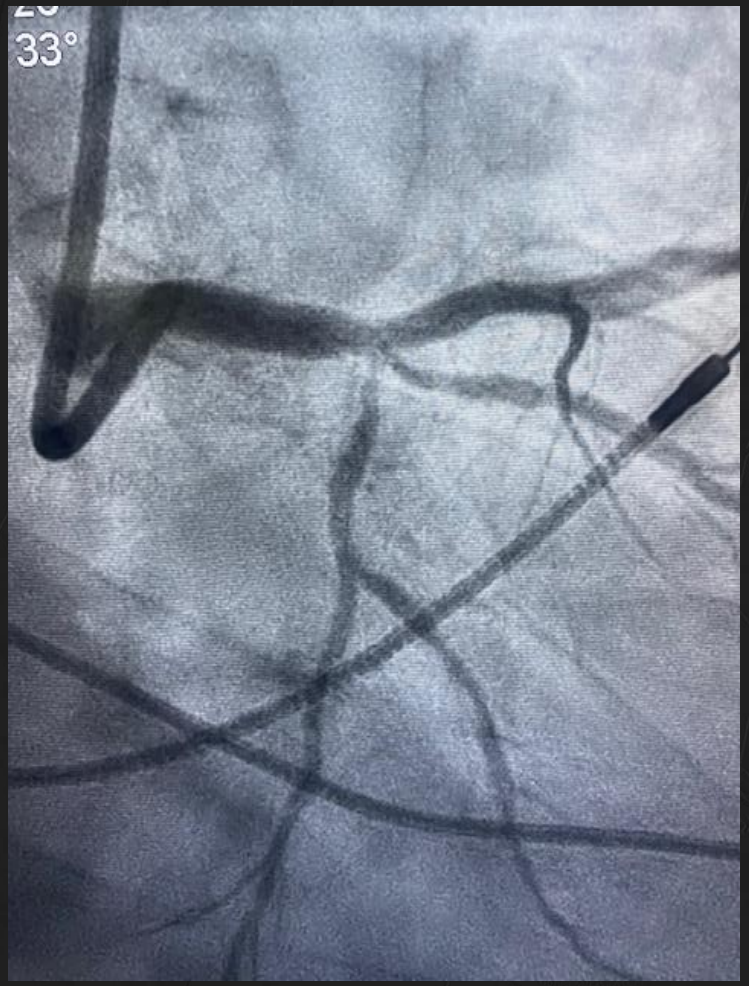
To simplify the procedure



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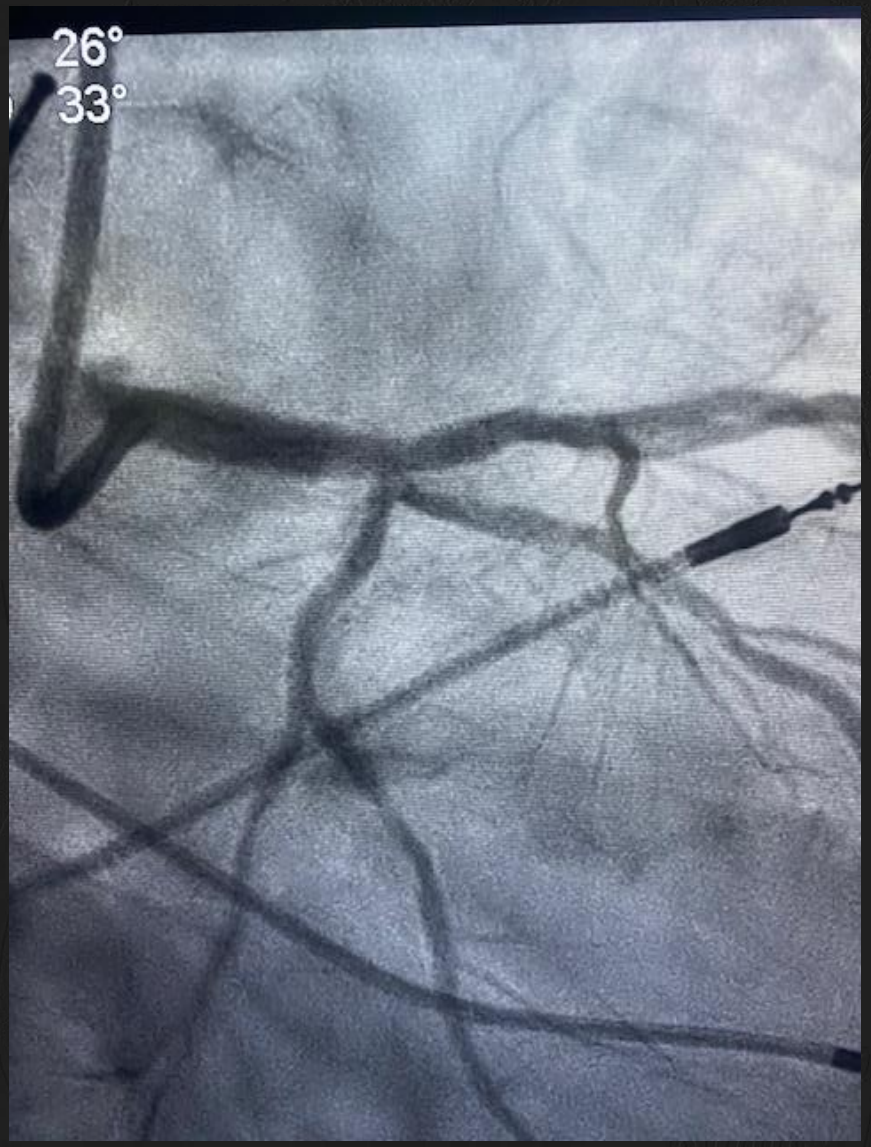

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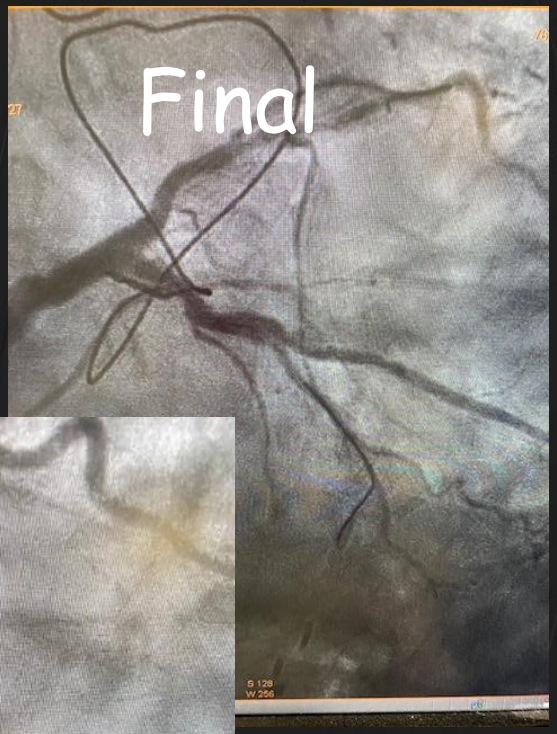
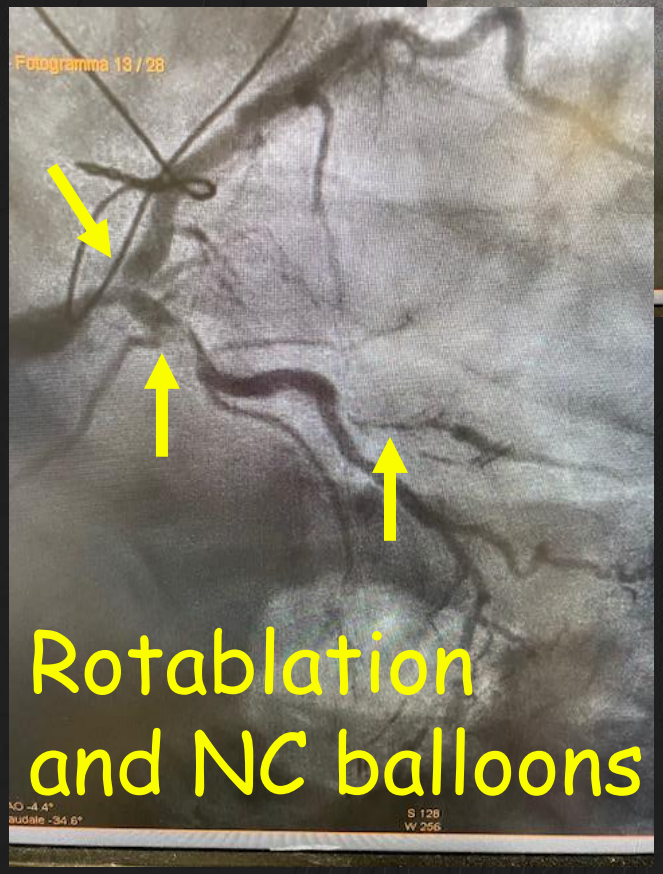
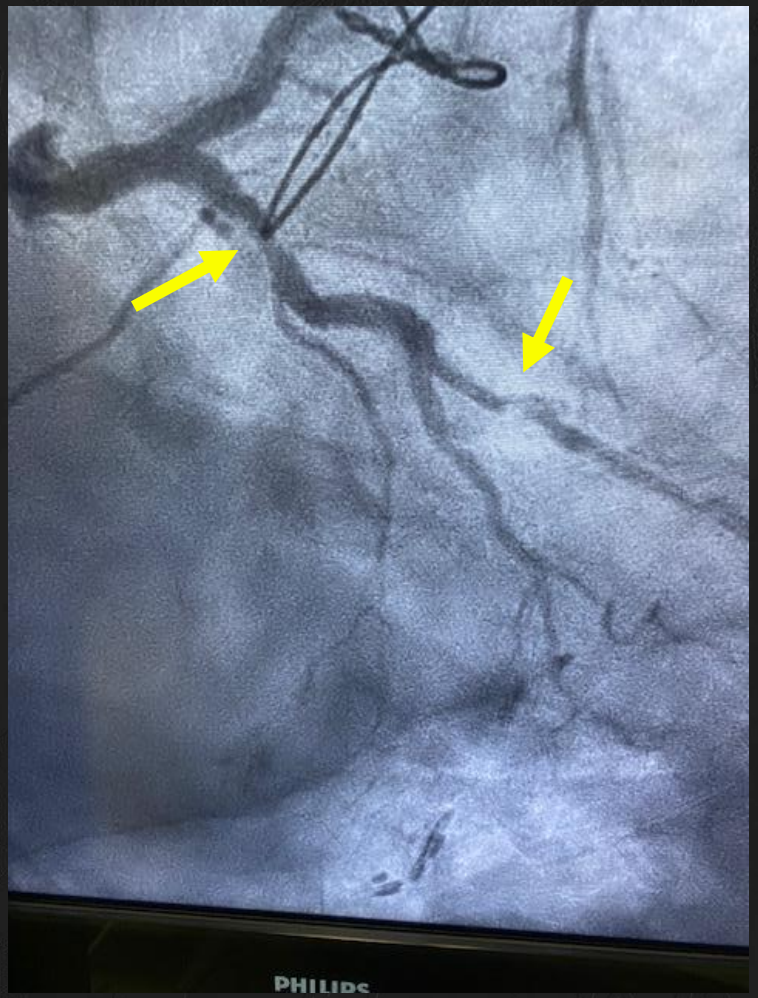




7-month FU



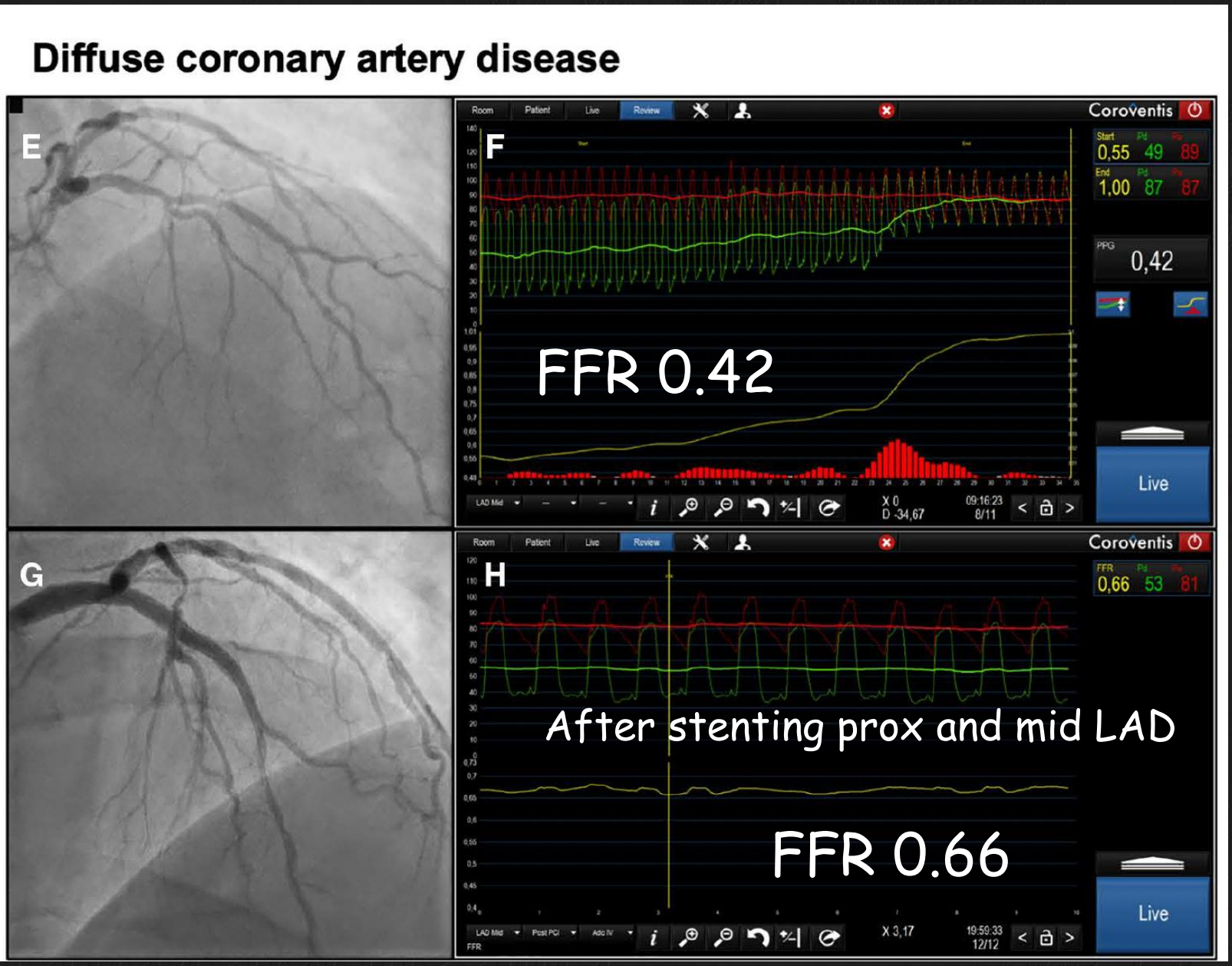
DCB restenosis may be less problematic compared to ISR

We need a new approach for diffuse disease especially for LAD

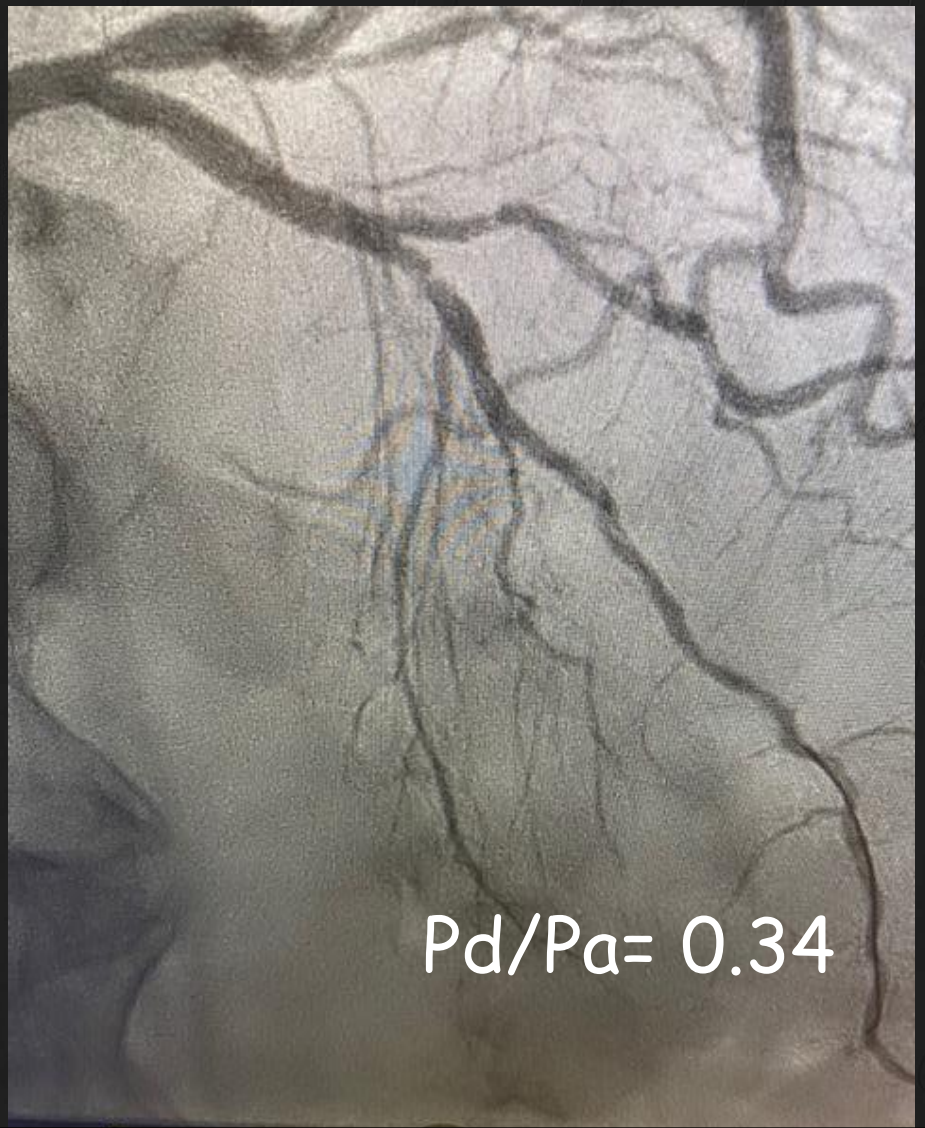
Influence of pathophysiologic pattern of coronary artery disease on immediate percutaneous coronary intervention outcome

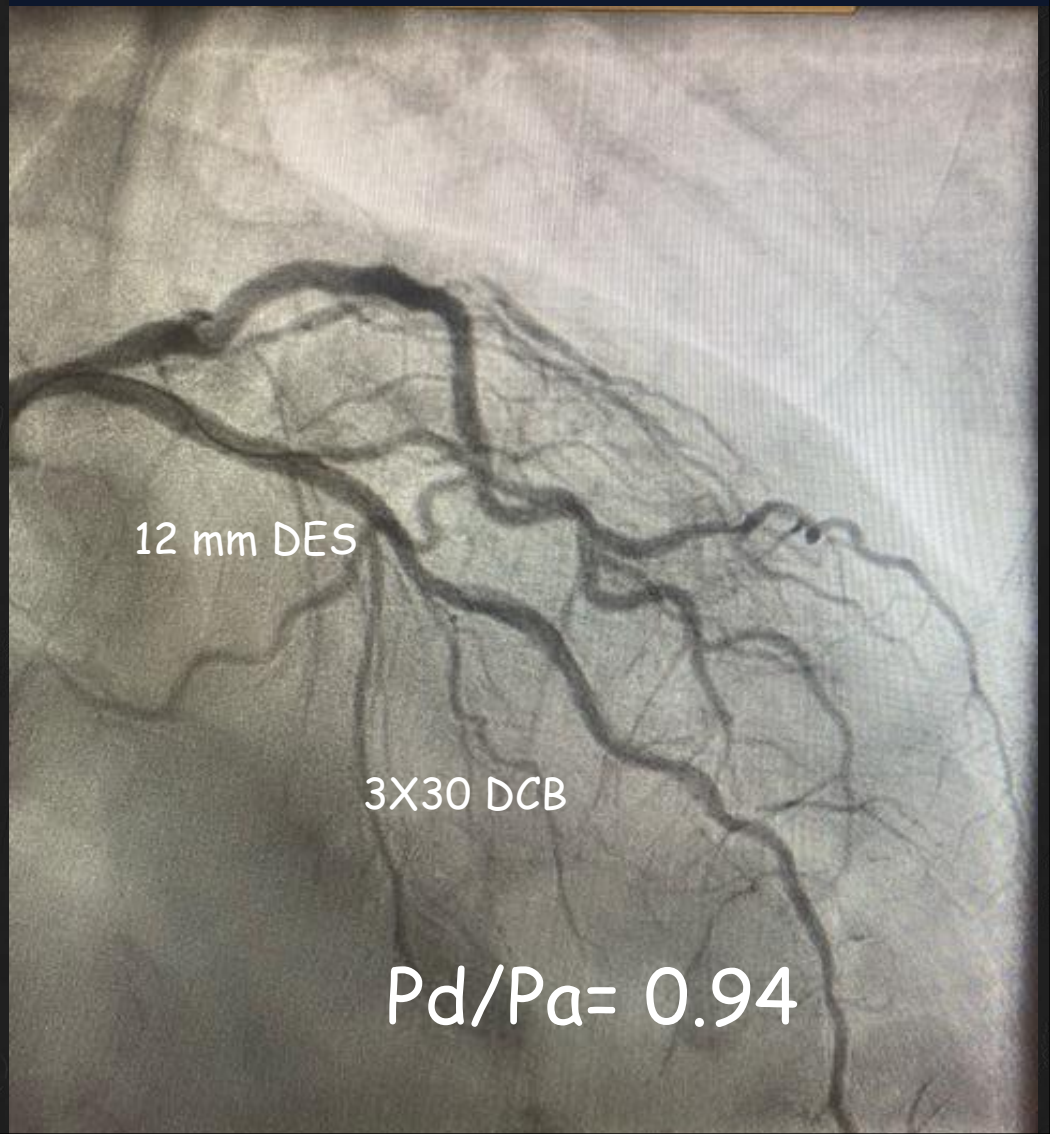
Carlos Collet…… Bernarhard De Bruyne, Nils P Johnson

Circulation 2024



To avoid "full metal jacket" especially on LAD





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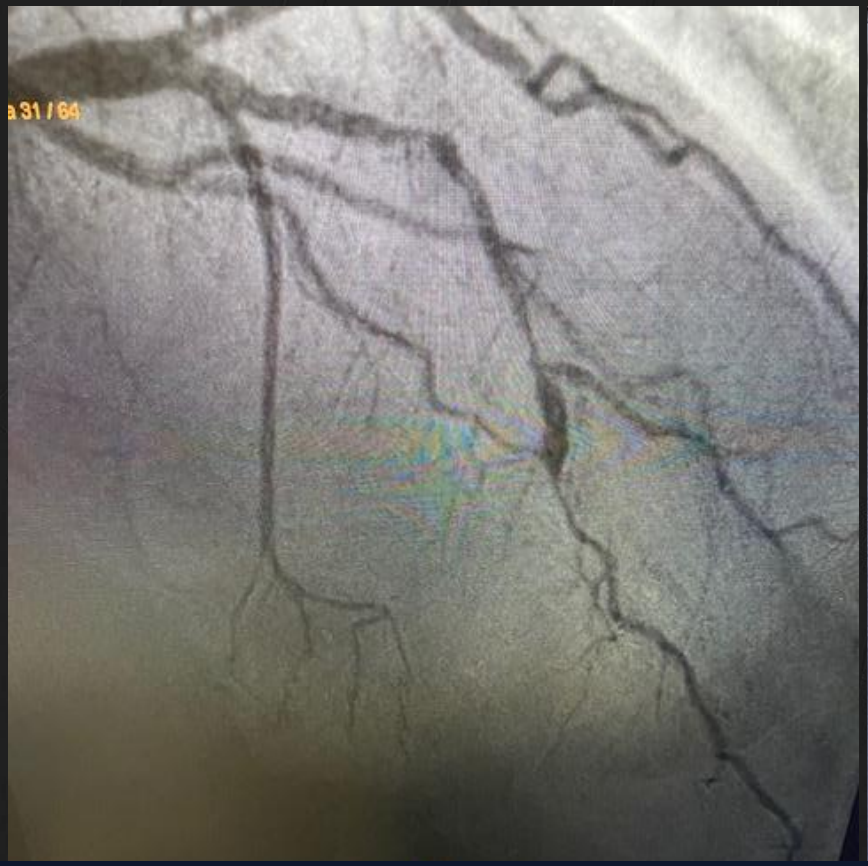
Rotational atherectomy, NC balloons and 3 long DCB

6-month follow-up DFR 0.91



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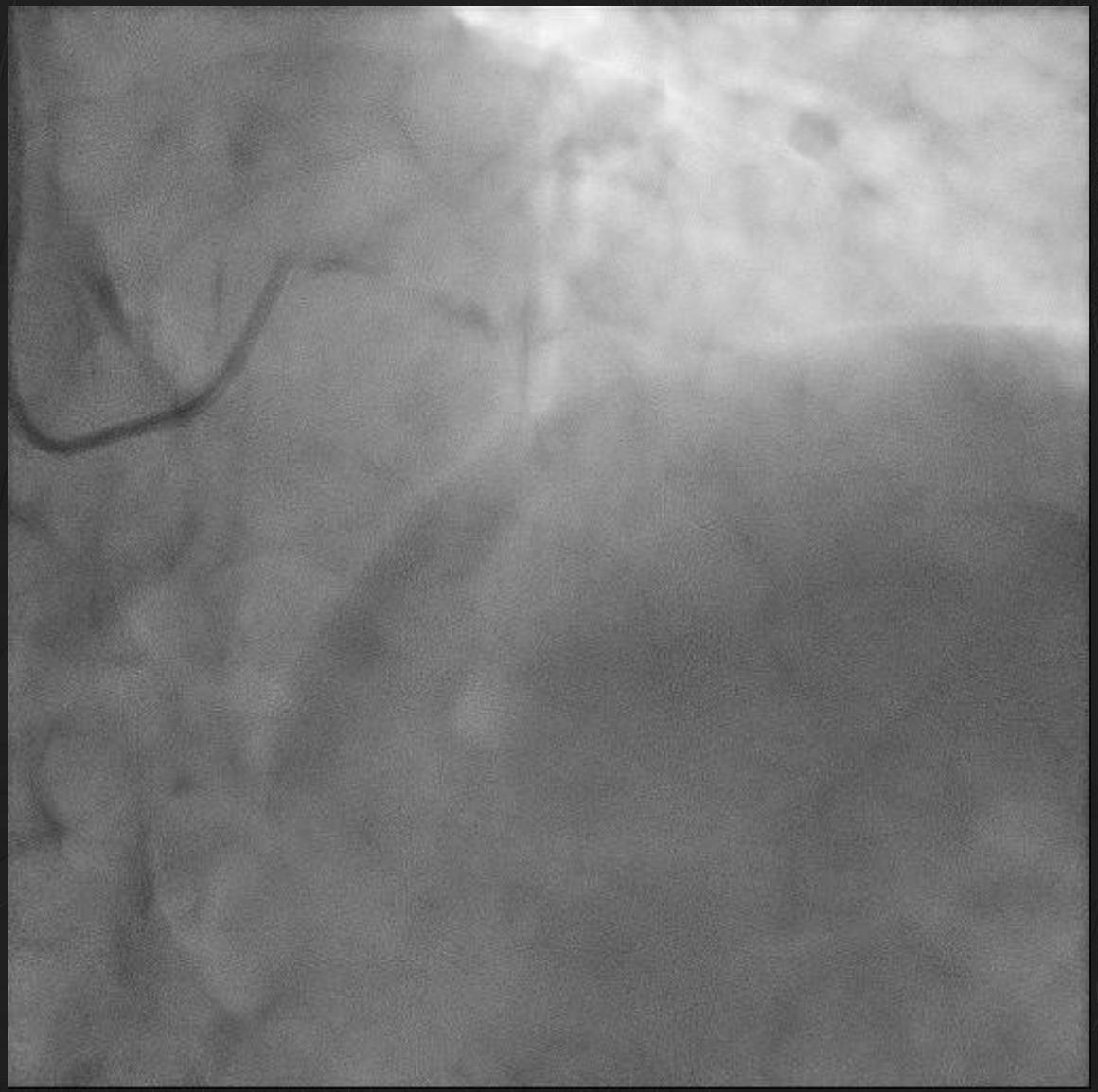
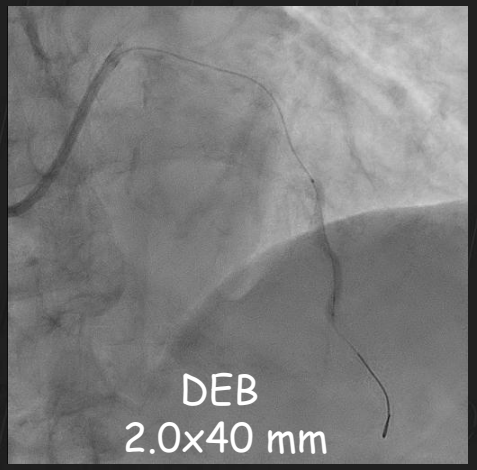
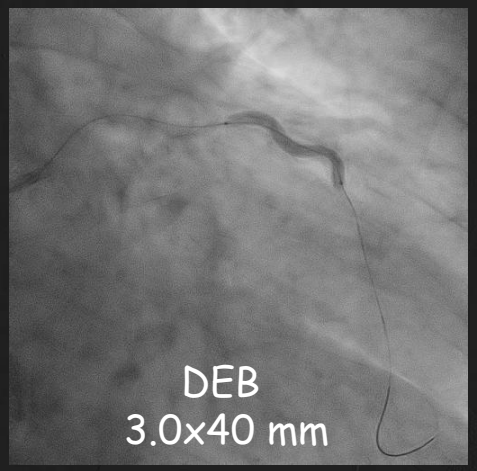
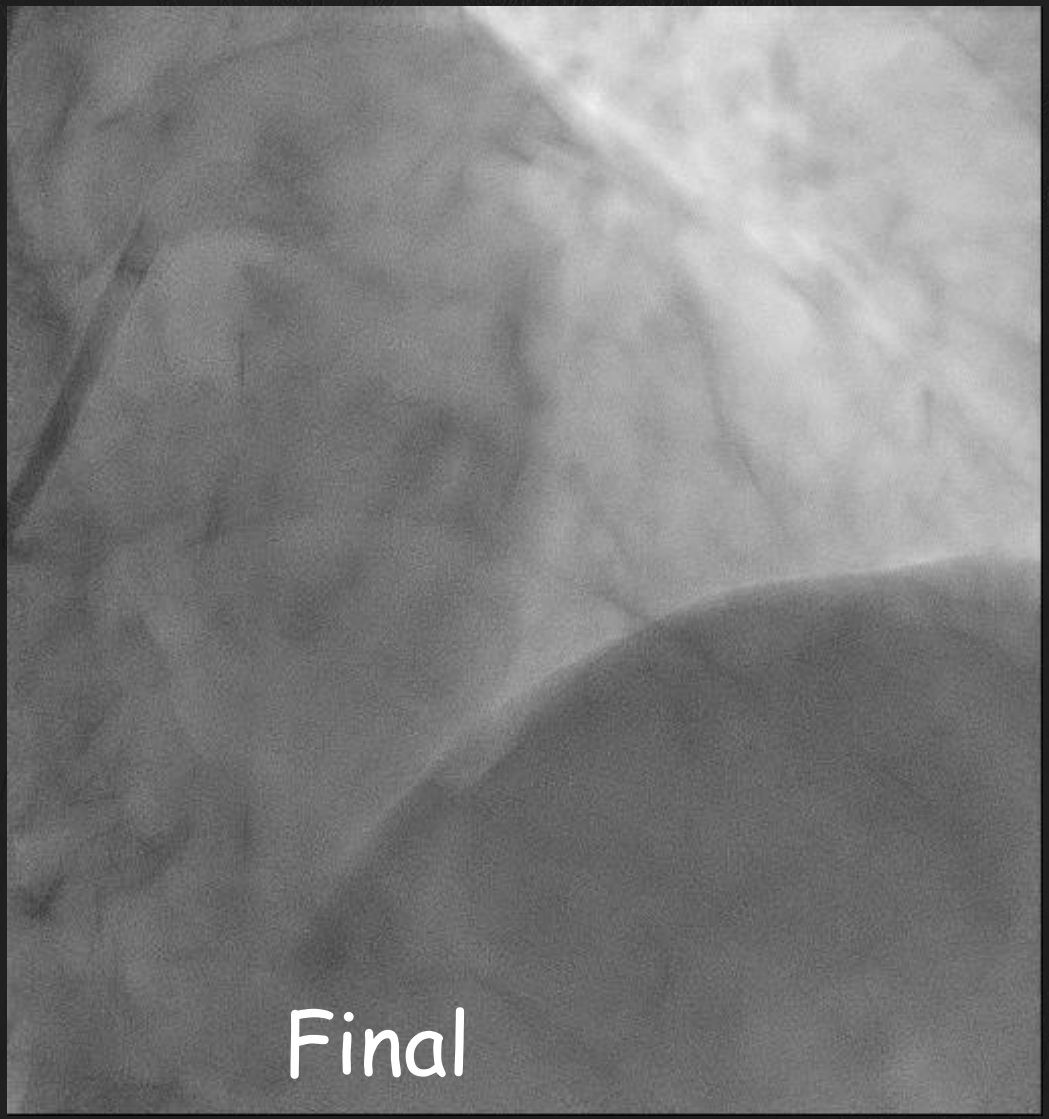
Baseline Coronary angiography



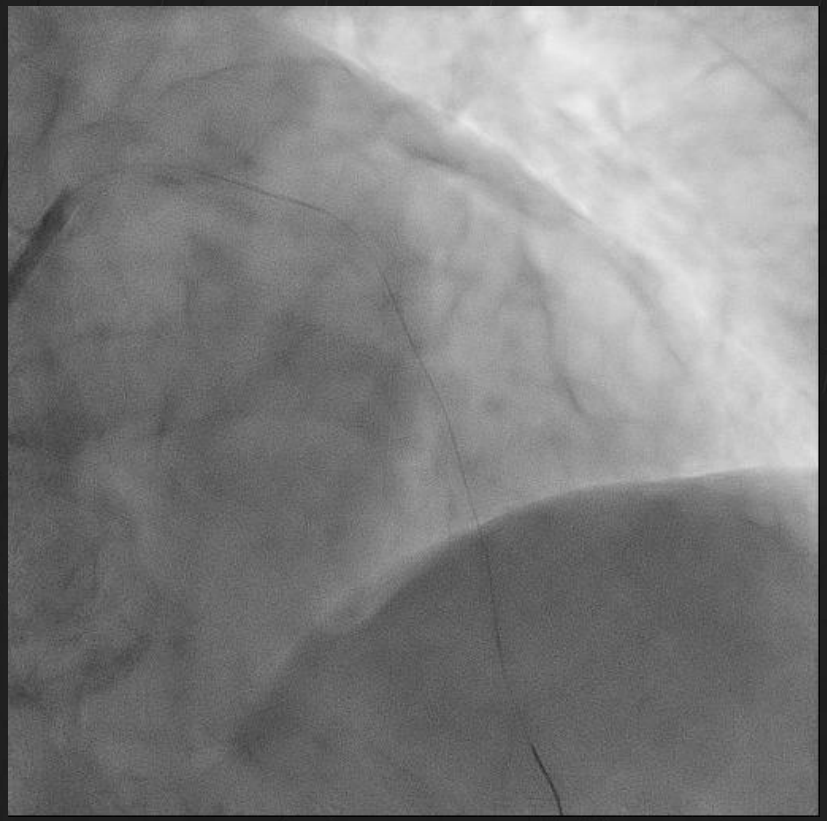






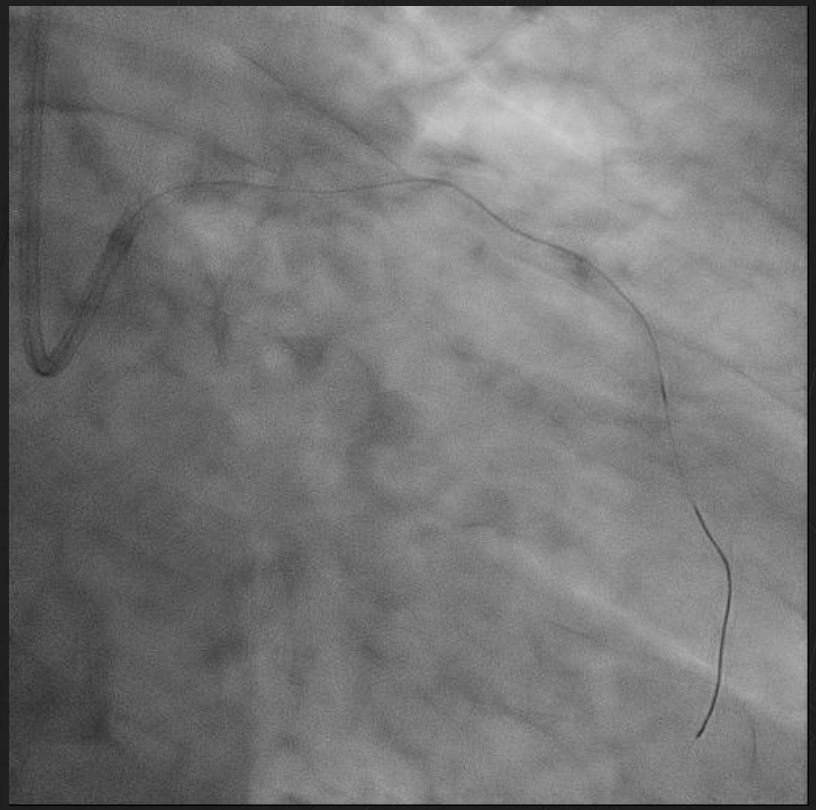
6 month angio follow-up

The patient is asymptomatic

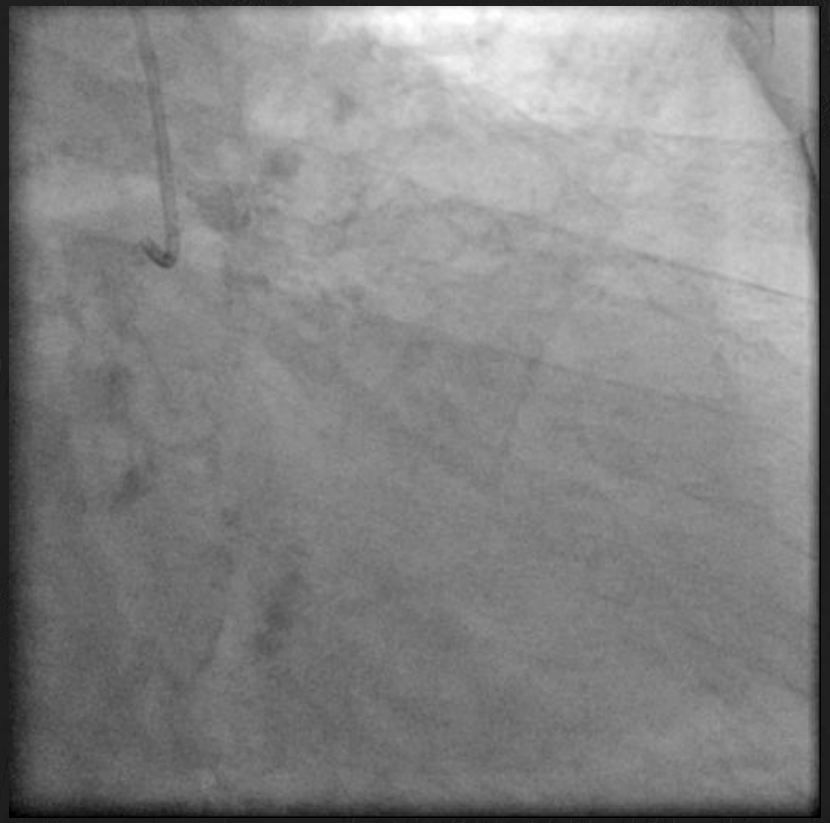


End of procedure

6 months FU



End of procedure



6 months FU

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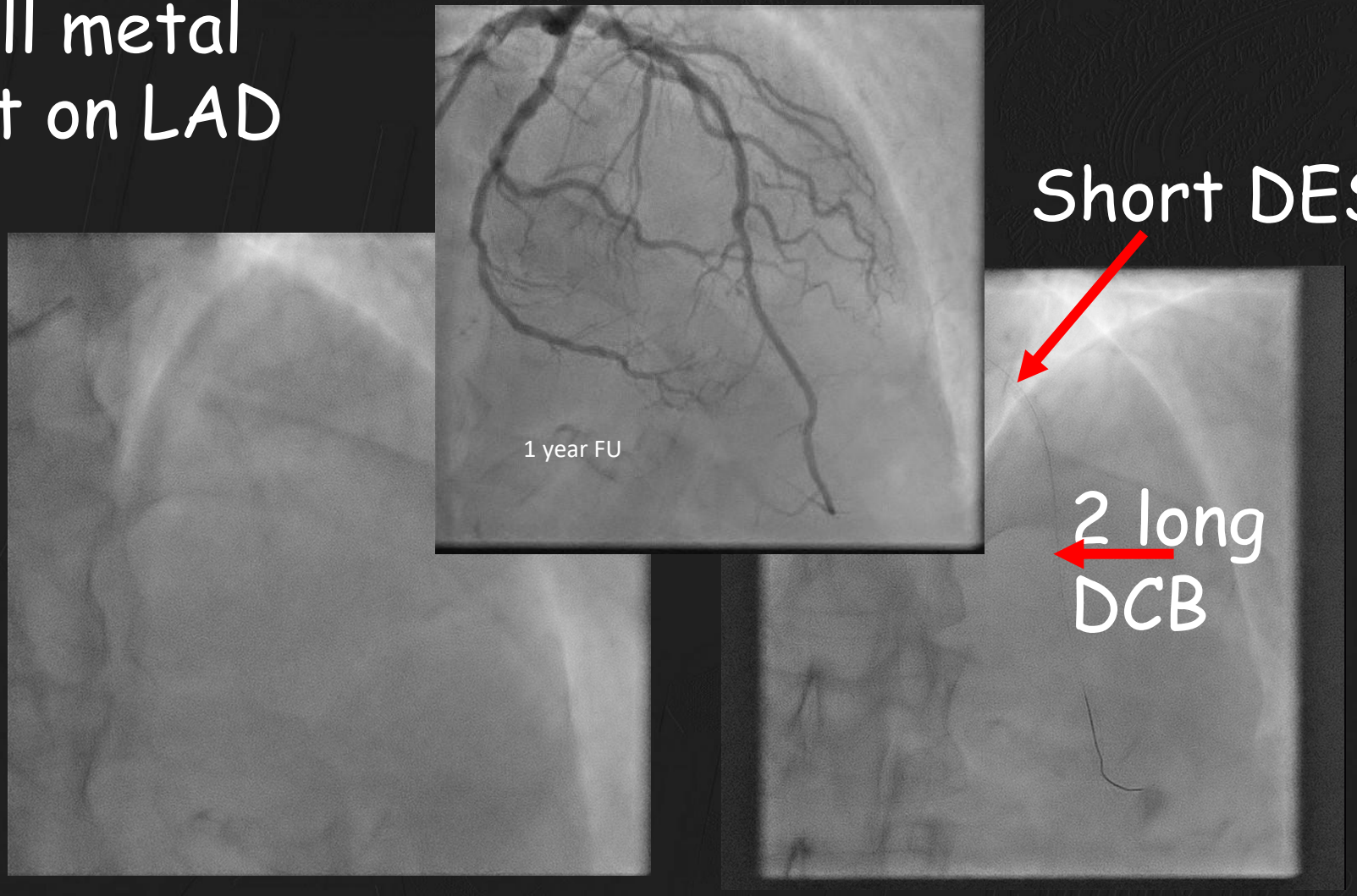
RTB on LAD and 3 DCB

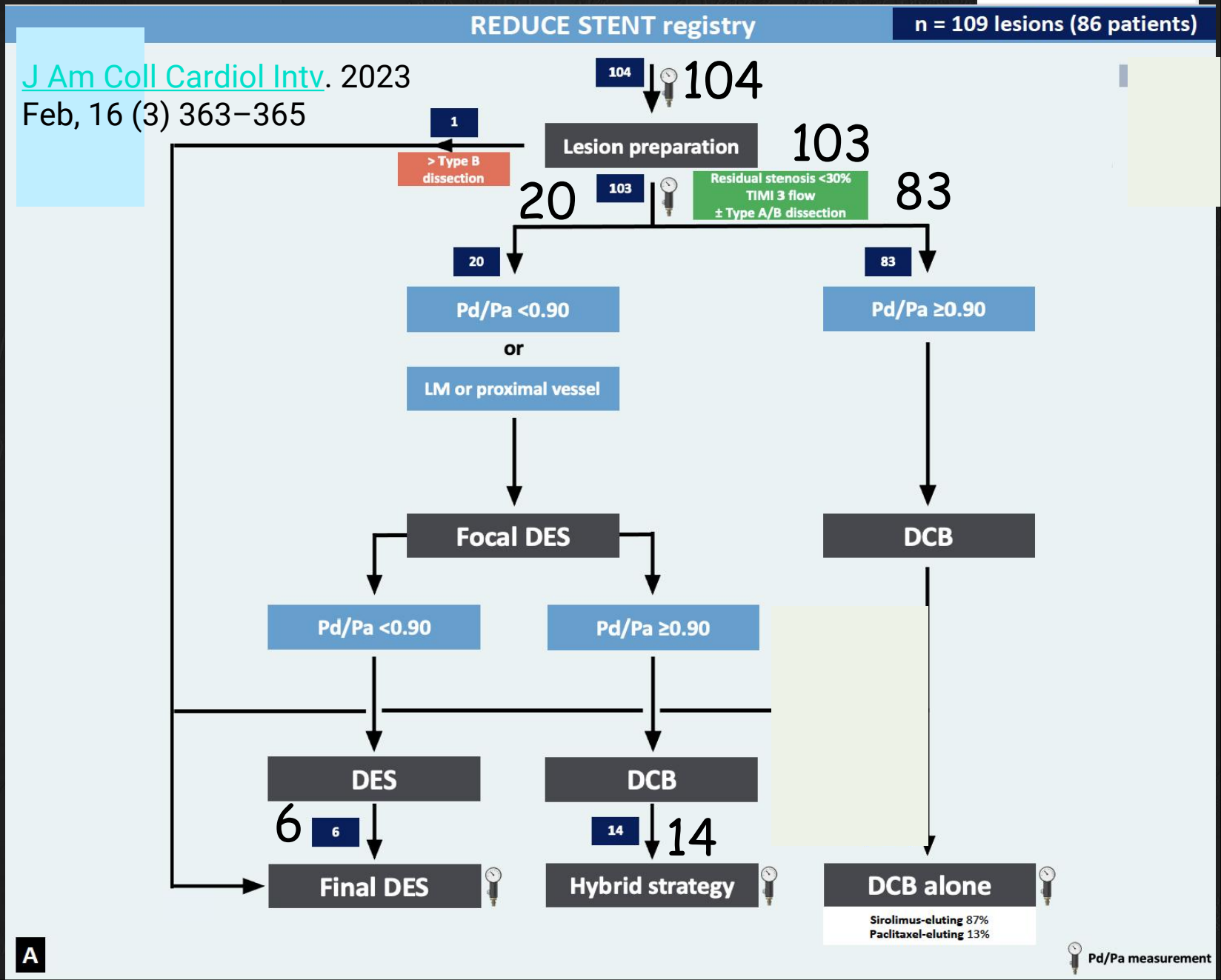
Follow-up at 8 m

No full metal jacket on LAD



Complex lesions in large vessels

All lesions evaluated with Pd/Pa after predilation: **the result is acceptable if Pd/Pa is higher than 0.90**



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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)

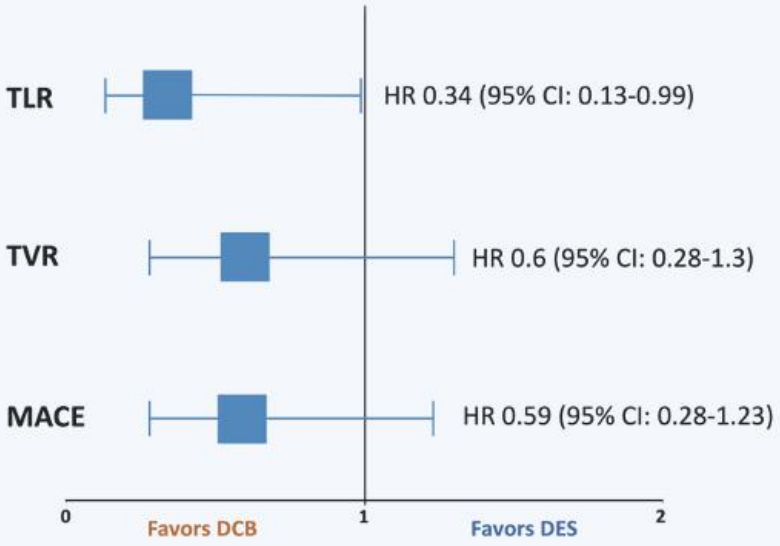
- Hybrid PCI in 70.8% of pts
- DCB length > DES length in 61.9% of patients

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

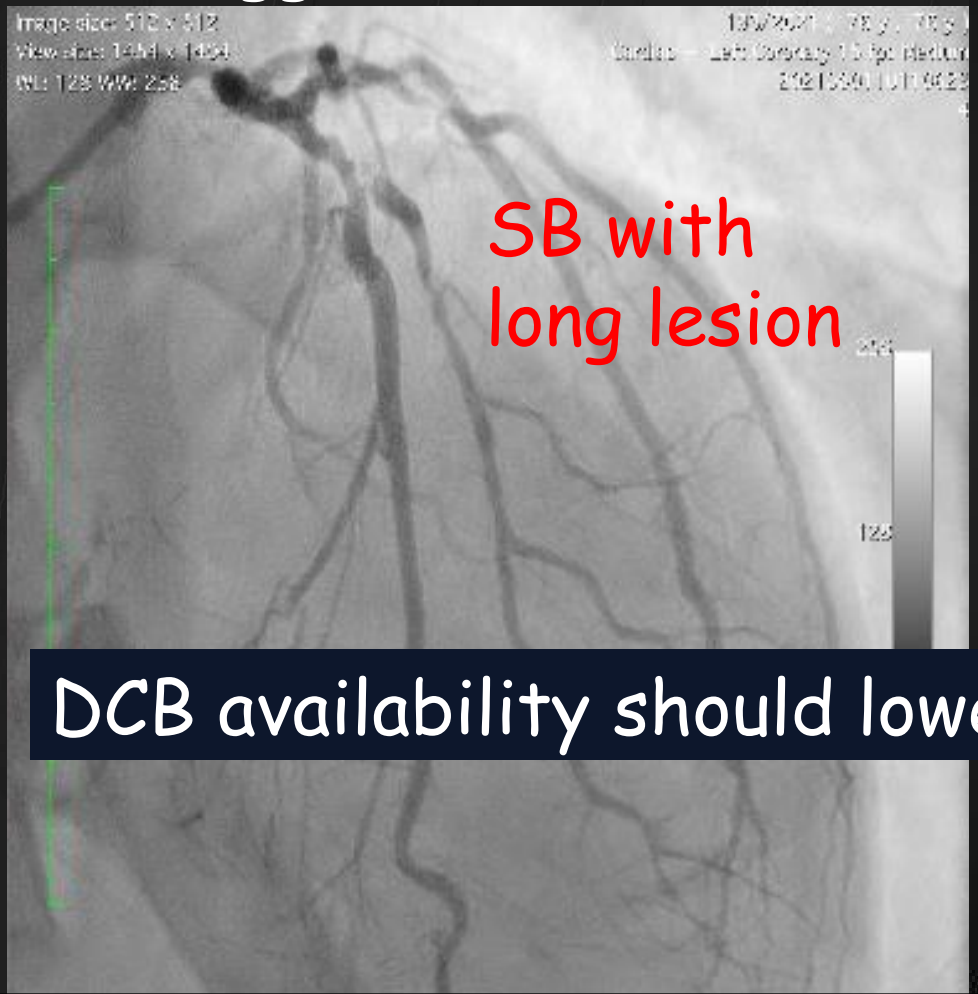


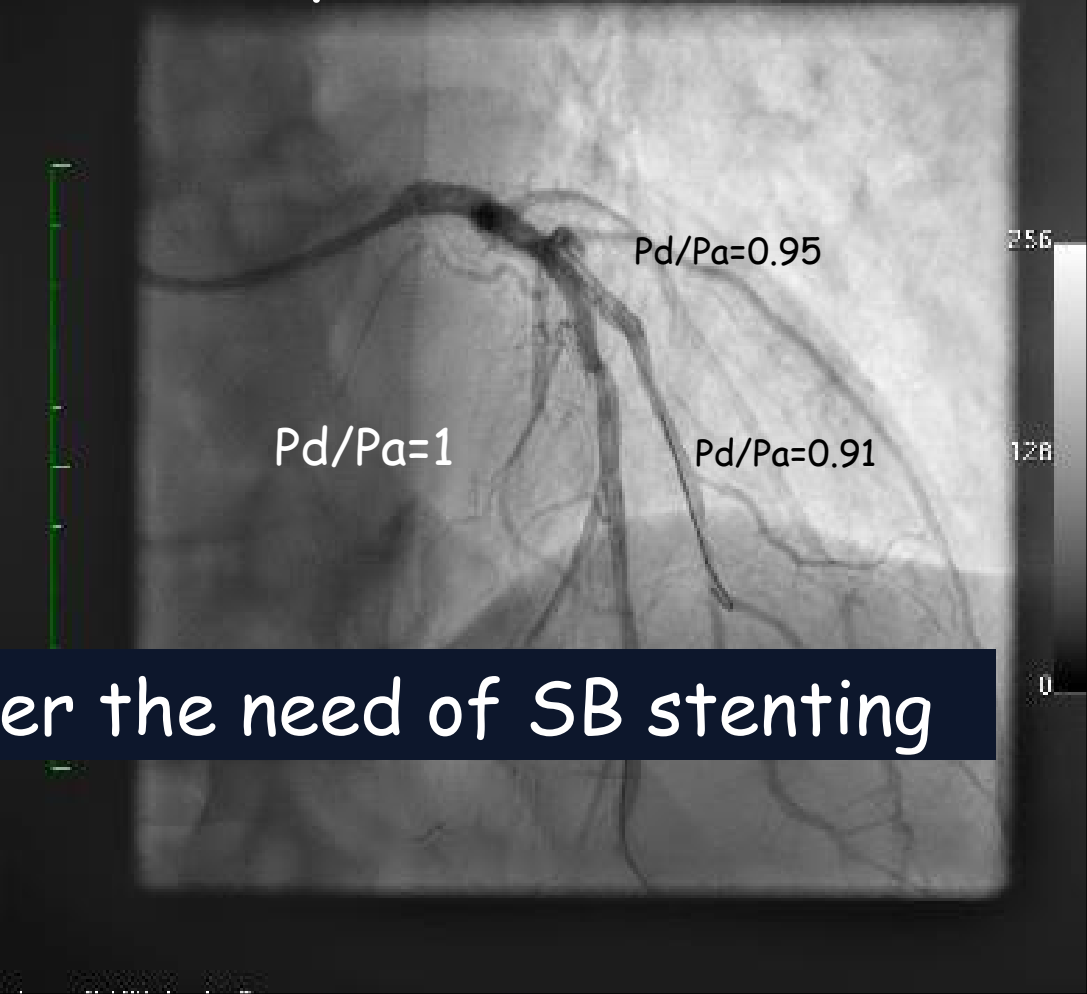
147 pts treated with DCB *propensity matched (PSM)* with 147 pts. treated only with DES

Bifurcation lesions

The randomized study Gao JACC 2024 evaluated DCB on SB in "simple bifurcations" with a reduction in MI (?)

We suggest to evaluate DCB in "complex bifurcations"





DCB availability should lower the need of SB stenting

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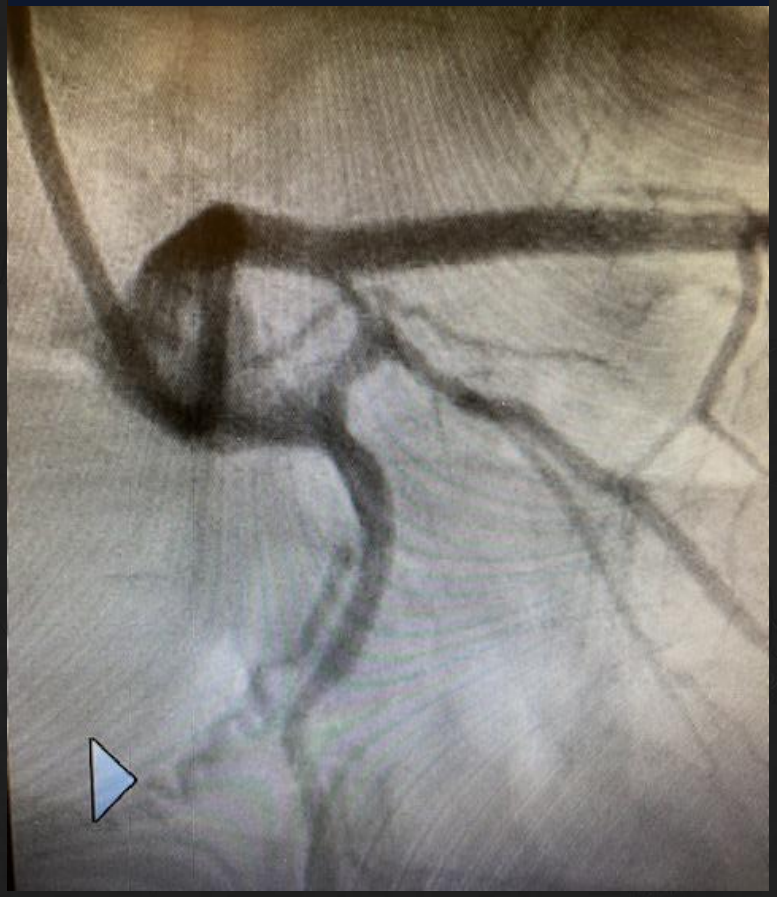
Baseline



Final post DCB

1 year FU

1 year FU

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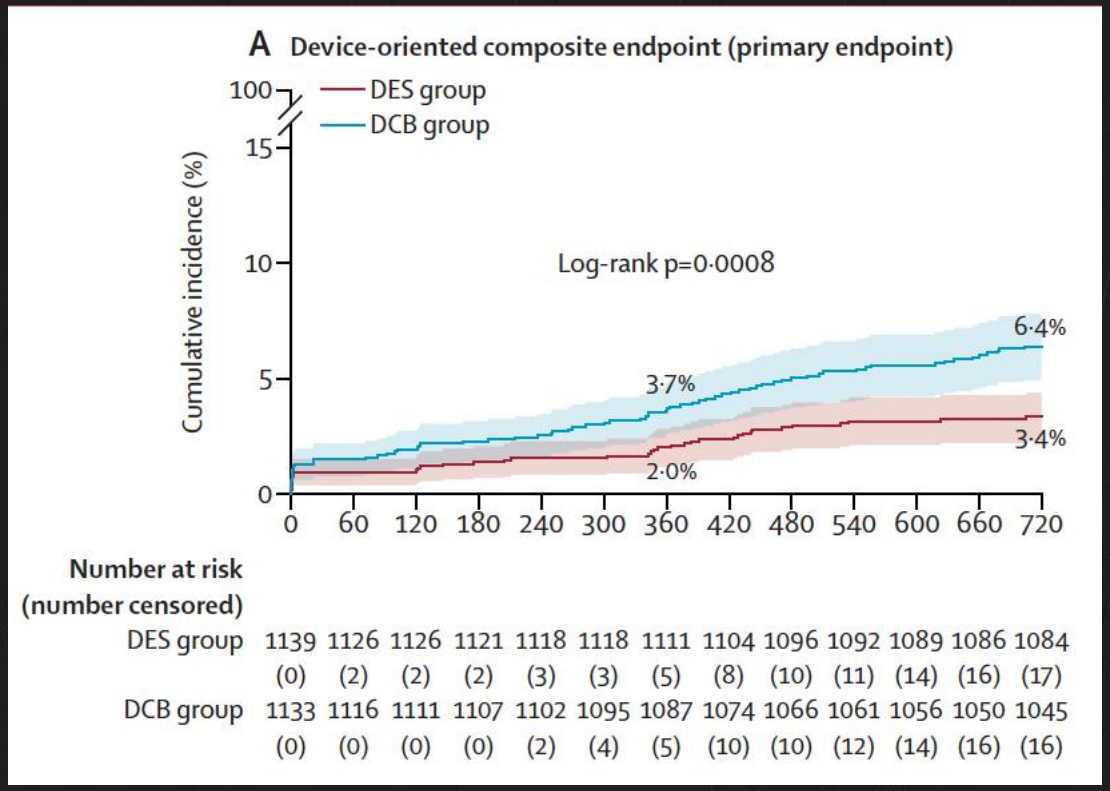
Drug-coated balloon angioplasty with rescue stenting versus intended stenting for the treatment of patients with de novo coronary artery lesions (REC-CAGEFREE I): an open-label, randomised, non-inferiority trial

Lancet 2024

Chao Gao, Xingqiang He*, Fan Ouyang*, Zhihui Zhang*, Guidong Shen, Mingxing Wu, Ping Yang, Likun Ma, Feng Yang, Zheng Ji, Hua Wang, Yanqing Wu, Zhenfei Fang, Hong Jiang, Shangyu Wen, Yi Liu, Fei Li, Jingyu Zhou, Bin Zhu, Yunpeng Liu, Ruining Zhang, Tingting Zhang, Ping Wang, Jianzheng Liu, Zhiwei Jiang, Jielai Xia, Robert-Jan van Geuns, Davide Capodanno, Scot Garg, Yoshinobu Onuma, Duolao Wang, Patrick W Serruys, Ling Tao, for the REC-CAGEFREE I Investigators†*



The study was conducted in simple focal lesions

In PCI history these are the lesions that perform at best with DES

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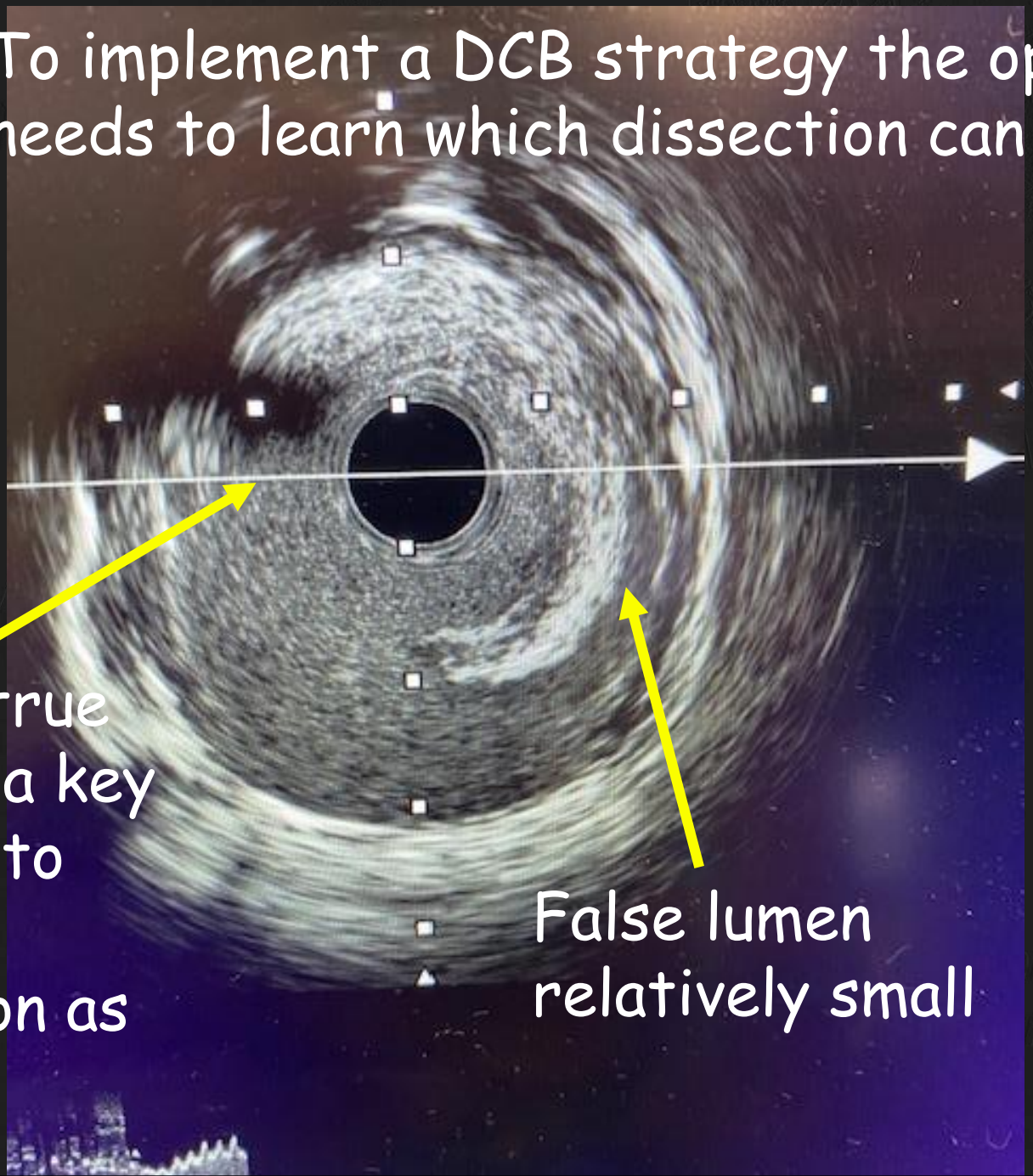
To implement a DCB strategy the operator needs to learn which dissection can be tolerated

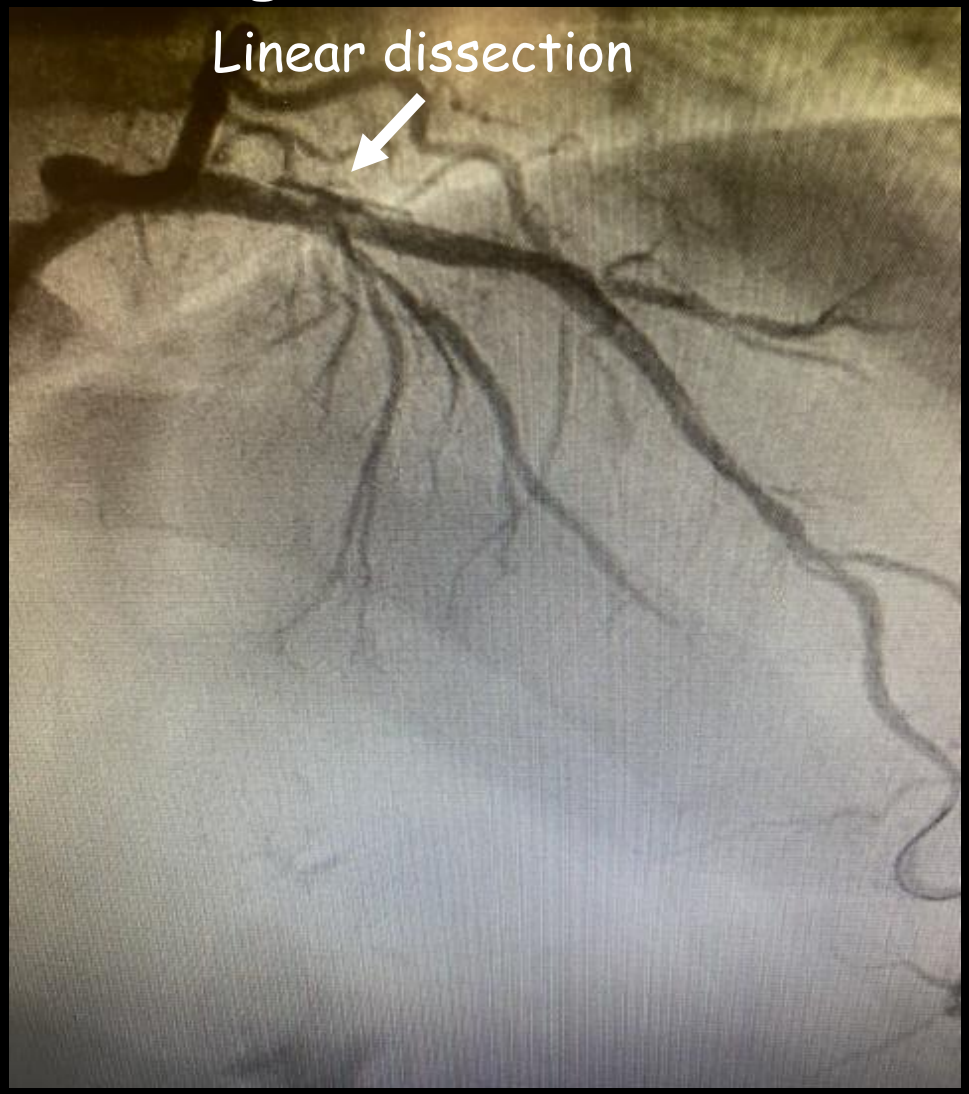


A large true lumen is a key element to define a dissection as "benign"

False lumen relatively small

Intravascular imaging is useful, **most of the times angiography is sufficient**

Angiography to accept linear dissections provided there is a large residual lumen



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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: ltetsumin@gmail.com*

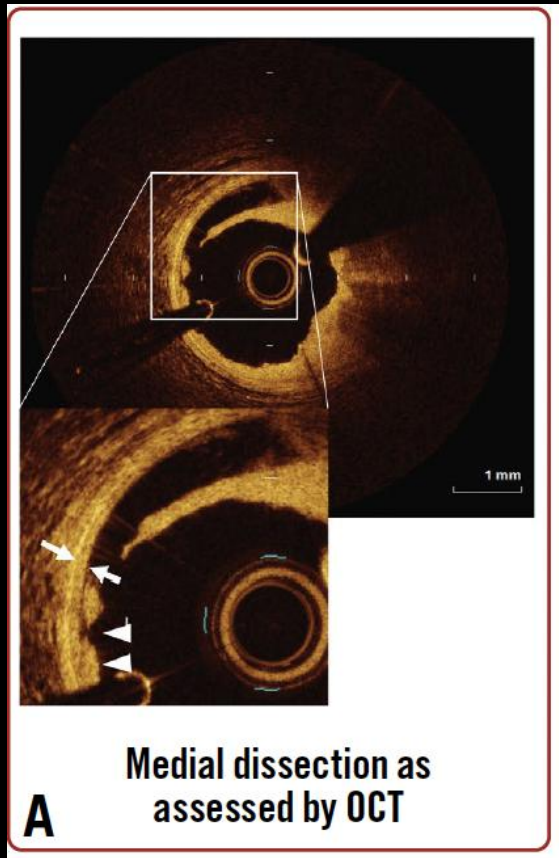
The authors' affiliations can be found at the end of this article.

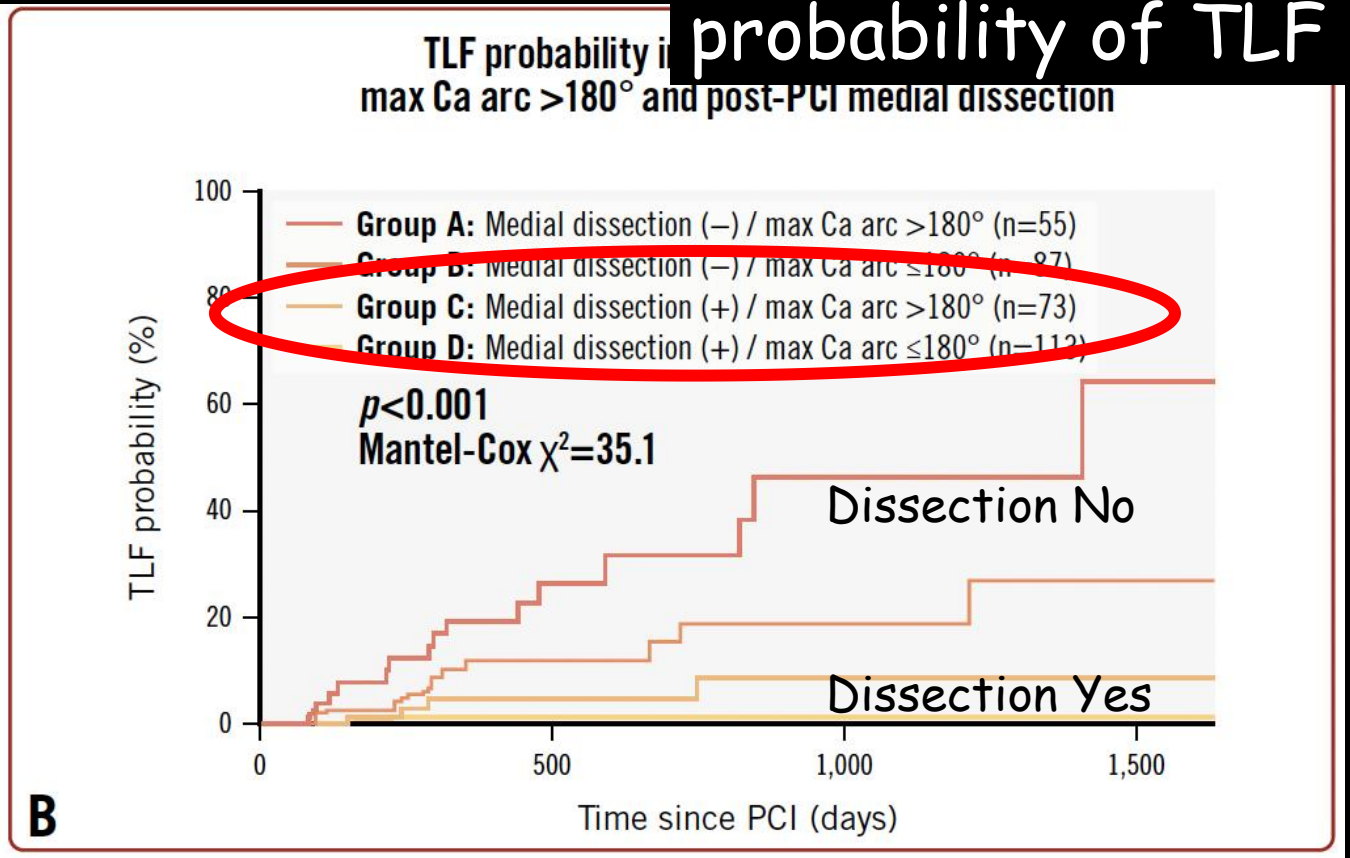
This paper also includes supplementary data published online at: https://eurointervention.pcronl

328 pts evaluated

Dissections occurred in 186 pts

The presence of a dissection lowered the probability of TLF





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DES implantation in large vessels minimizing their length with selective DCB usage may lower the metal burden preserving vessel physiology, with a favorable impact on long term adverse events

Learning how to perform plain balloon angioplasty is important to implement this strategy