

TCT AP 2012

Medina classification

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No conflict of interest

CLASSIFICATIONS IN PCI

TYPE OF LESION

TYPE A LESIONS: (High success, > 85%; low risk) 1988

Discrete (<10 mm length)	Little or no calcification
Concentric	Less than totally occlusive
Readily accessible	Not distal in location
Nonangulated segment <45 degrees	No major branch involvement
Smooth contour	Absence of thrombus

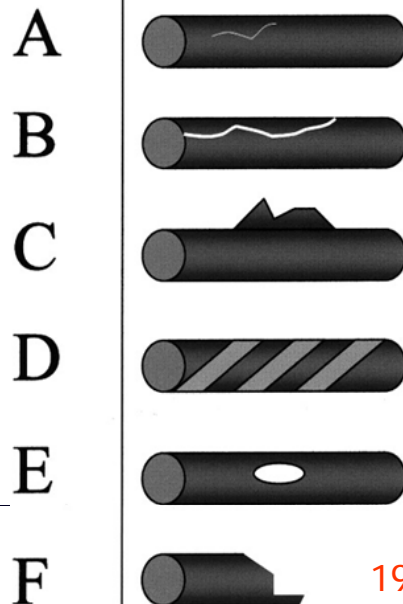
TYPE B LESIONS (Moderate success, 60 to 85%; moderate risk)

Tubular (10-20 mm length)	Ostial in location
Eccentric	Bifurcation lesions requiring double guidewires
Moderate tortuosity of prox.segment	Some thrombus present
Moderately angulated, 45-90°	Total occlusion < 3 months old
Irregular contour	
Moderate to heavy calcification	

TYPE C LESIONS (low success, < 60%; high risk)

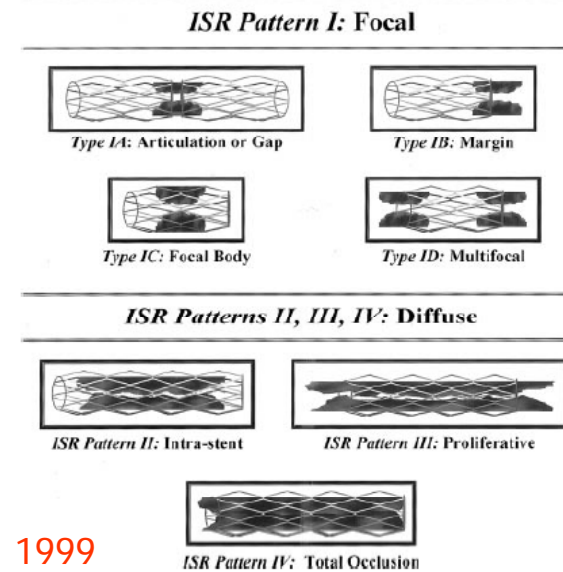
Diffuse (>2 cm length)	Degenerated vein grafts with friable lesions.
Excessive tortuosity of prox.segment	Total occlusion > 3 months old
Extremely angulated, >90 degrees	
Inability to protect major side branch	

CORONARY DISSECTION



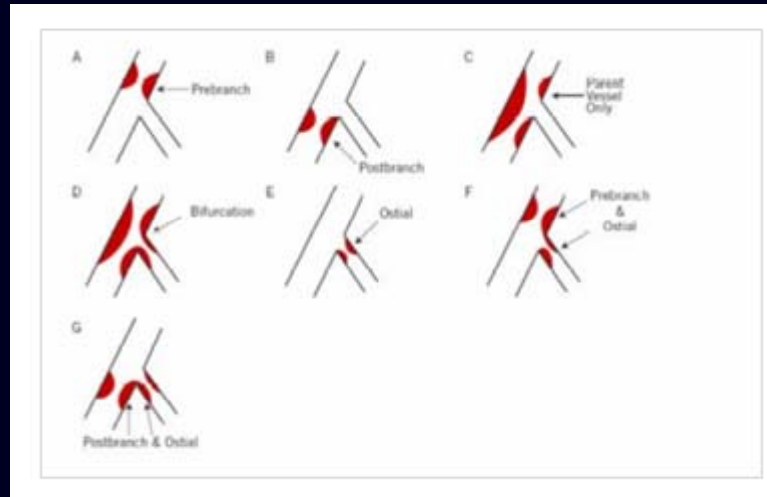
1991

IN-STENT RESTENOSIS

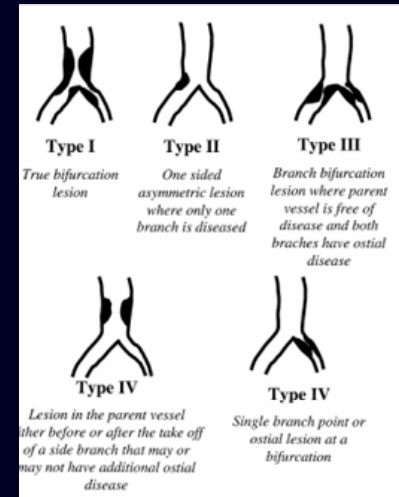


1999

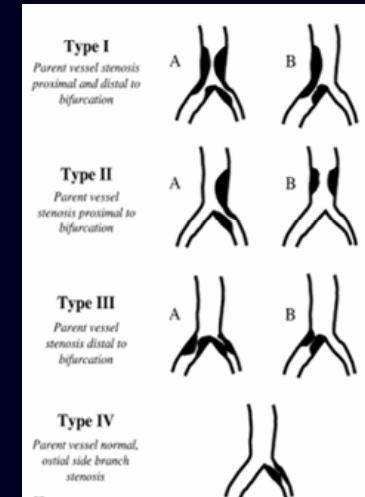
Difficult to memorize



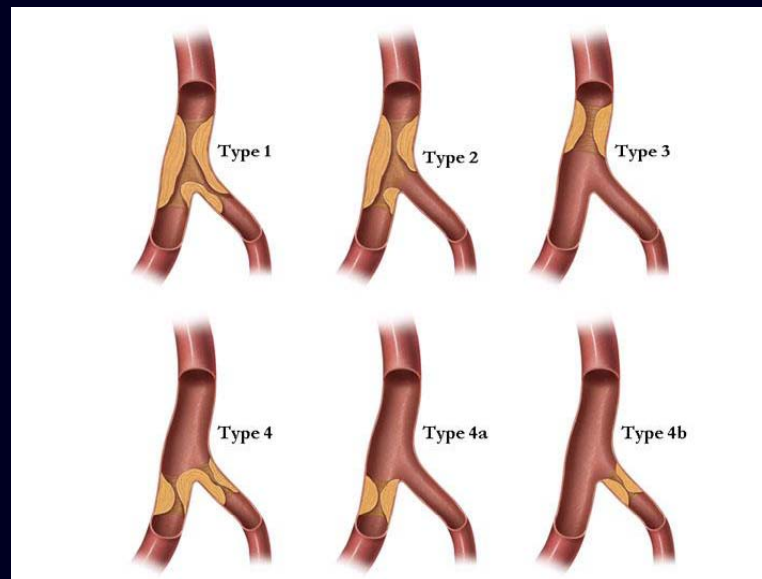
Duke classification



Sanborn classification



Safian classification



Lefevre classification

A New Classification of Coronary Bifurcation Lesions

To the Editor:

Coronary lesions located at a bifurcation present a wide range of angiographic and anatomical morphologies depending upon the distribution of the plaque in the segment affected.

Different classifications have been proposed and used to define these lesions.¹⁻³ Although these classifications clearly define all the possible combinations, they are difficult to memorise. For our classification we use the 3 components of a bifurcation: the main branch proximal (MBP), the main branch distal (MBD), and the side branch (SB). Respecting that sequence, we propose a new simple intuitive classification which does not demand memorisation. It consists in giving a binary value (1, 0) according to whether each of the segments previously defined is compromised or not. Figure shows the 7 possible morphologies.

We consider that this new approach, compared to previous classifications, makes the description of the anatomy of coronary bifurcations much more simple, a factor which is technically and strategically significant when facing percutaneous treatment and assessing its results.

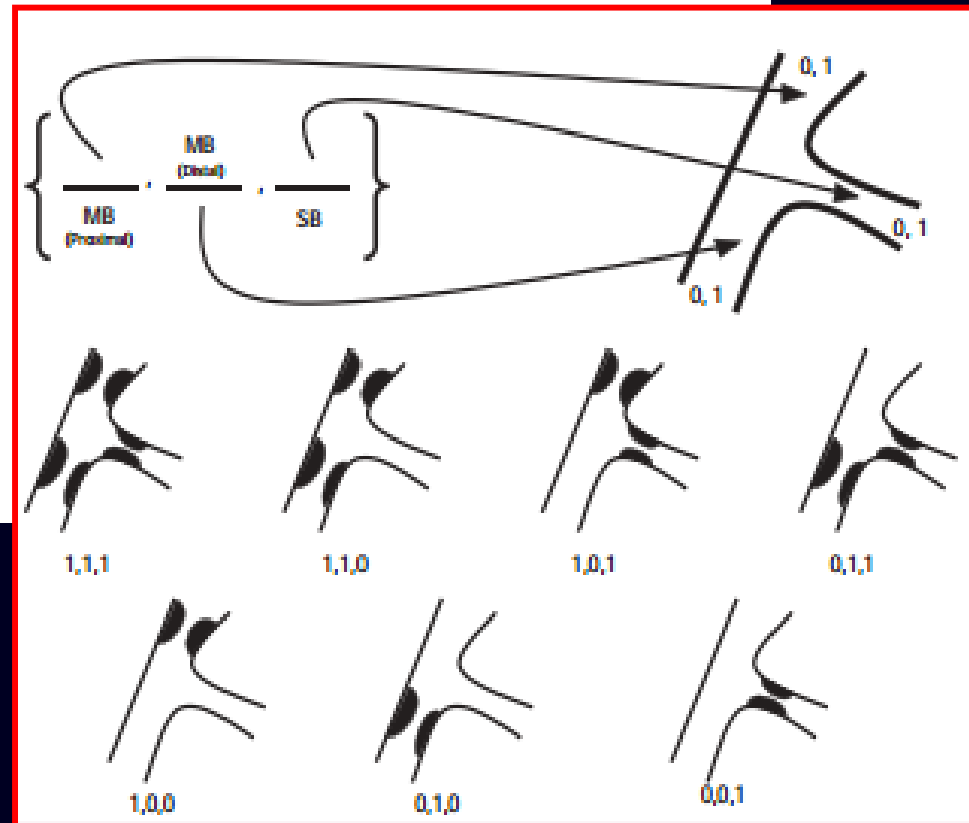
Likewise, it could also facilitate the inclusion of descriptive parameters in the data base which analyses the result of percutaneous treatment of bifurcations.

Last, we consider that it allows for homogenous terminology when comparing different series and techniques.

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Percutaneous coronary intervention for bifurcation disease. A consensus view from the first meeting of the European Bifurcation Club

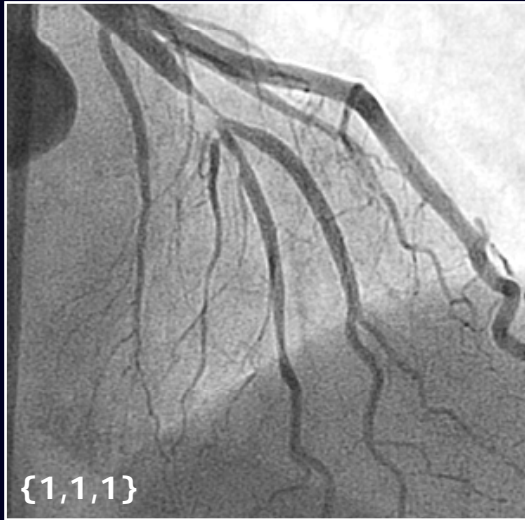
Martyn Thomas^{1*}, David Hildick-Smith², Yves Louvard³, Remo Albiero⁴, Olivier Darremont⁵, Goran Stankovic⁶, Manuel Pan⁷, Victor Legrand⁸, Bernard DeBruyne⁹, Thierry Lefèvre³

1. Kings College Hospital, London, United Kingdom; 2. Sussex Cardiac Centre, Brighton, United Kingdom; 3. Institut Cardiovasculaire Paris Sud, Institut Jacques Cartier, Massy, France; 4. Columbus Hospital, Milan, Italy; 5. Clinique Saint Augustin, Bordeaux, France; 6. Invasive Cardiology Unit, San Raffaele Institute, Milan, Italy; 7. Servicio de Cardiología, Hospital Reina Sofía, Universidad de Córdoba, Córdoba, Spain; 8. Centre Hospitalier Universitaire Sart Tilman, Liege, Belgium; 9. Cardiovascular Center, OLV Clinic, Moorselbaan, Aalst, Belgium

Consensus was reached on the following issues

- The MEDINA classification should be more widely adopted (see Figure 1)
- With bare metal stents, a stepwise provisional T-stent strategy is the gold standard
- With bare metal stents, deliberate double-stenting may be an inferior technique
- With drug-eluting stents, the optimal strategy is under development, and two ongoing trials (Nordic and BBC1) will help define this.
- After complex stenting, kissing balloon inflations should be routinely performed.

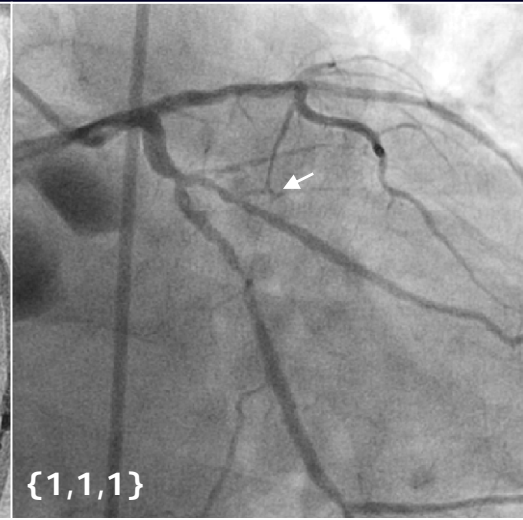
... BEYOND MEDINA'S CLASSIFICATION



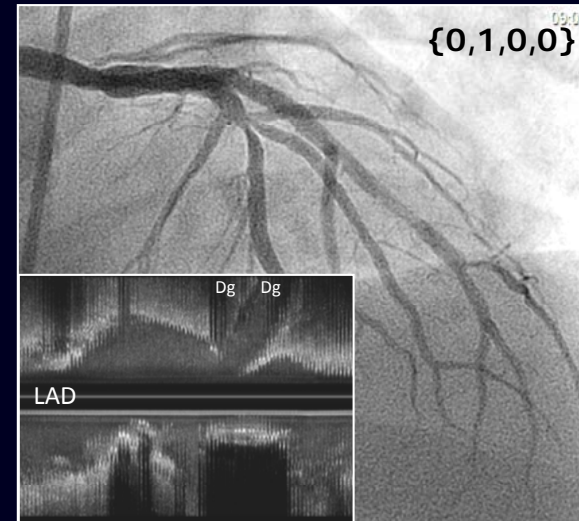
balanced vs small SB



SB: focal vs long (> 10 mm) lesion

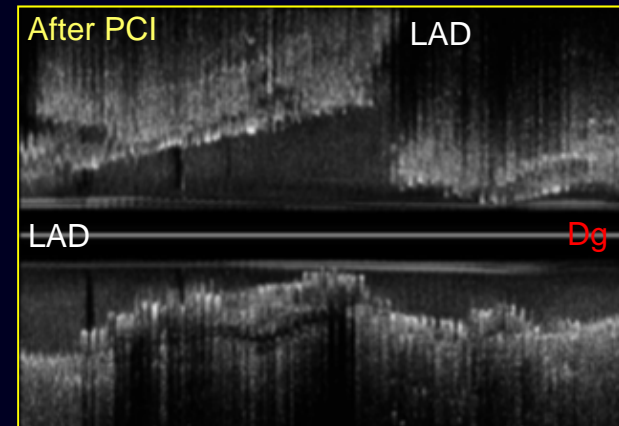
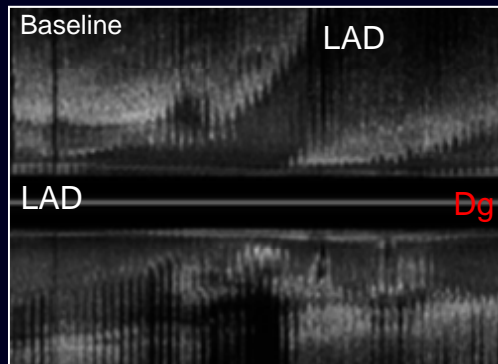
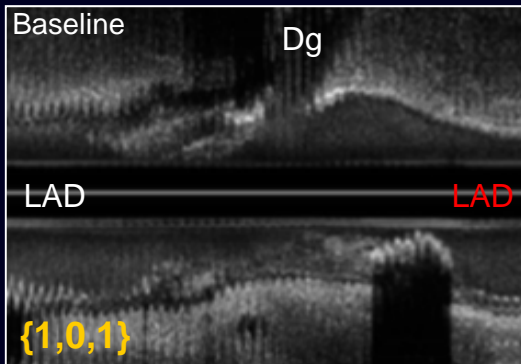
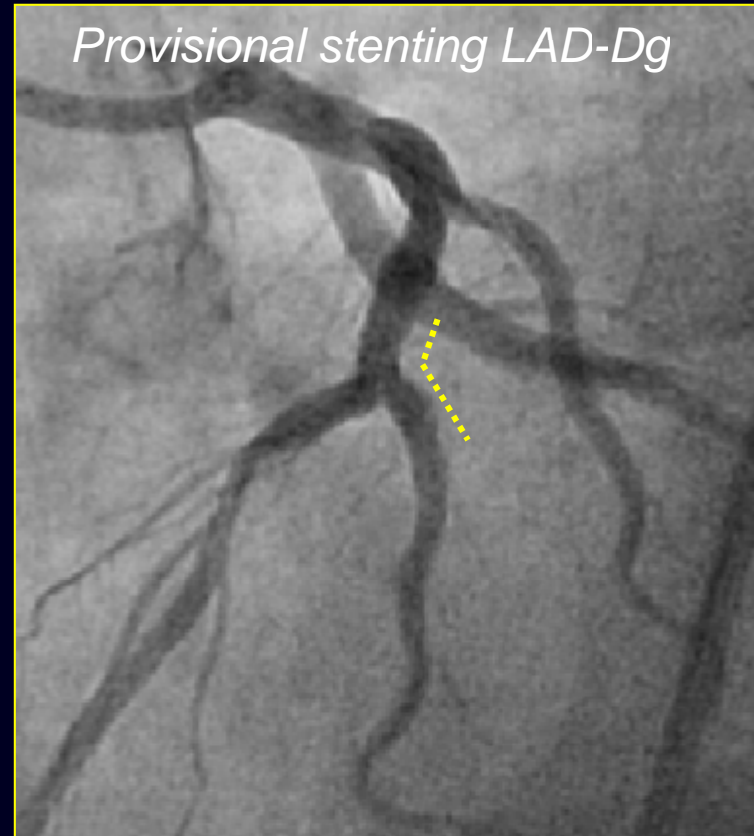
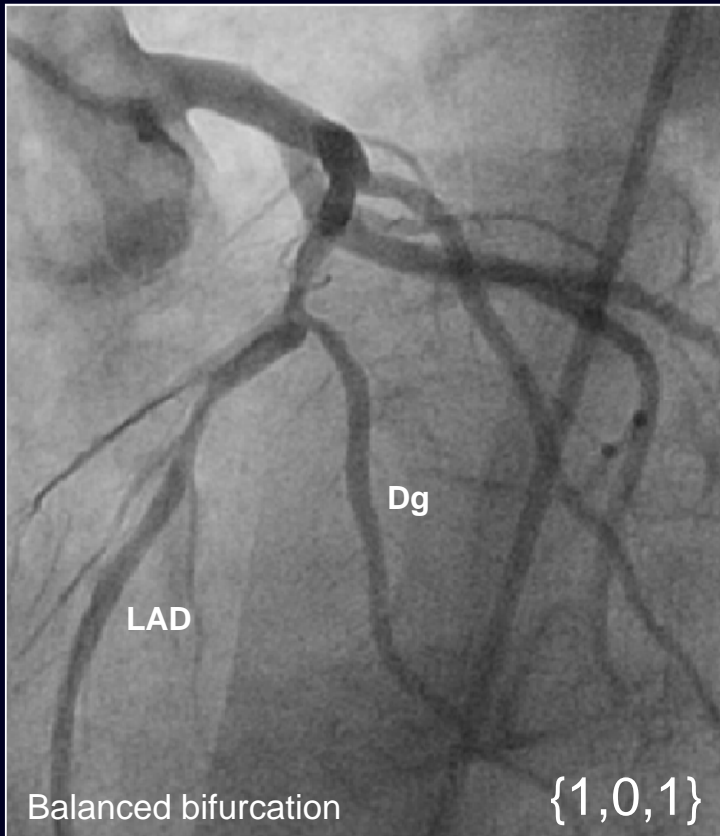


Angle: Y or T shape

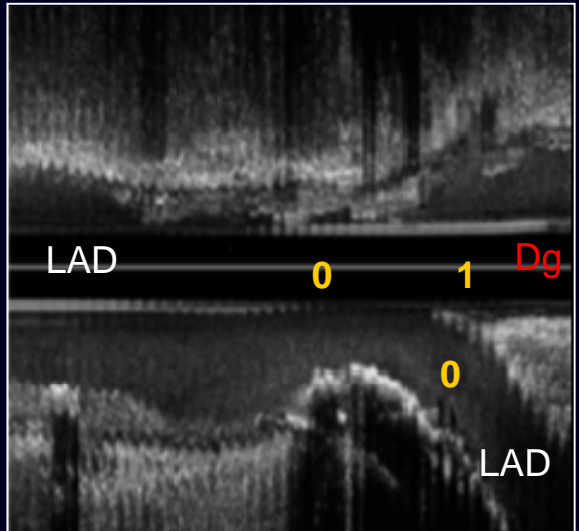
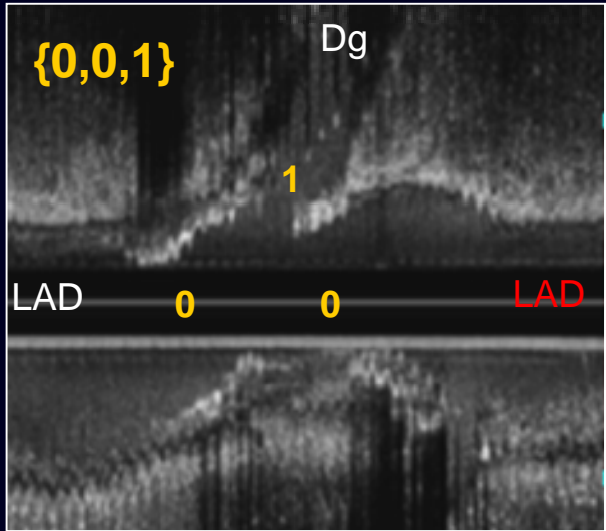
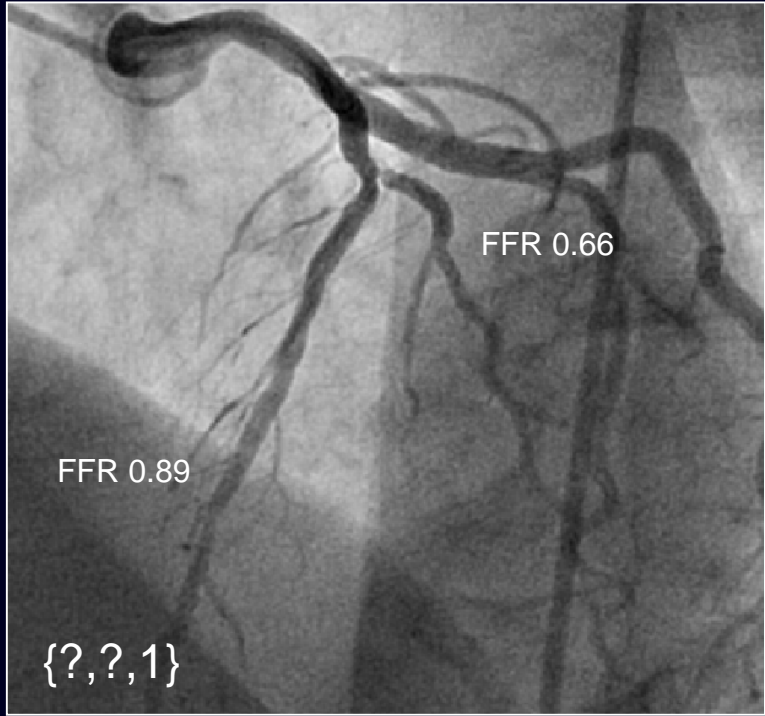


Trifurcation (LM 10%)

Are true bifurcations $\{1,1,1\}$, $\{1,0,1\}$, $\{0,1,1\}$ all similar?



IVUS anatomic features of coronary bifurcation lesions

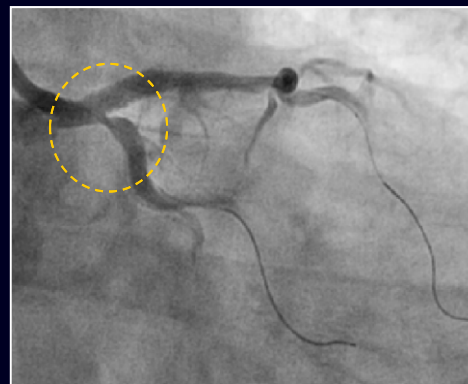


1 stent

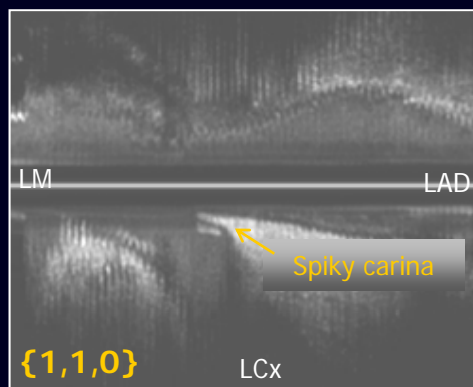
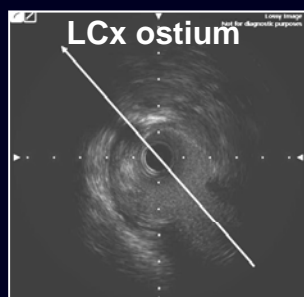
Baseline



After MB stenting



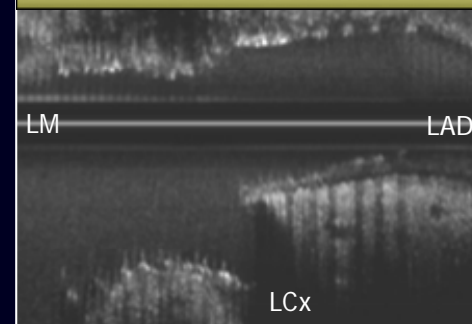
Final kissing balloon



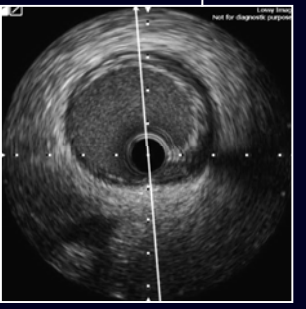
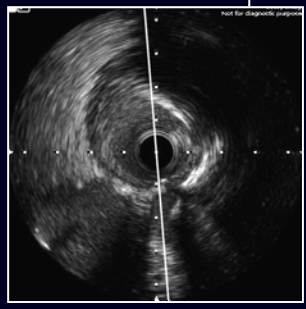
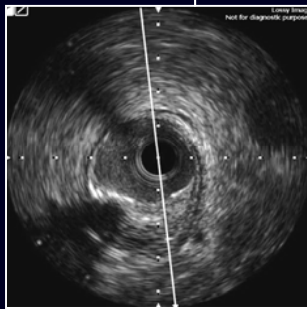
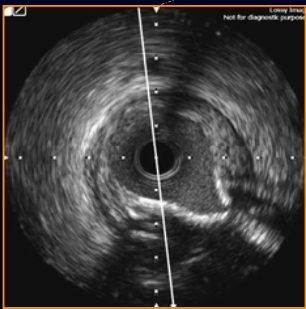
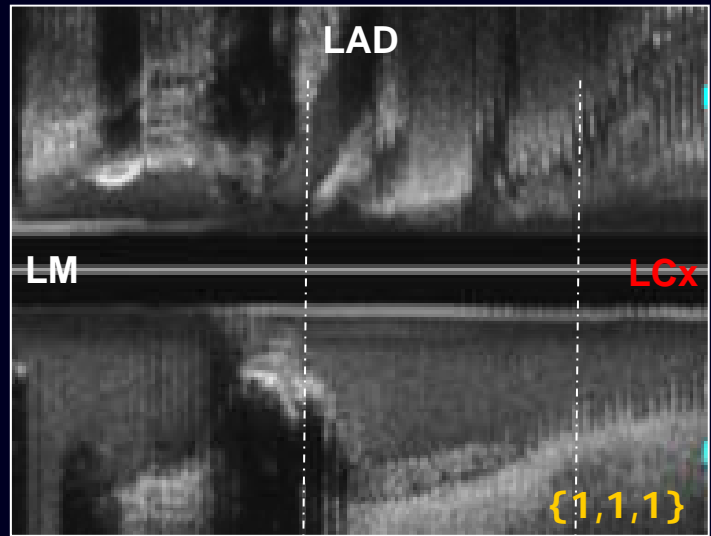
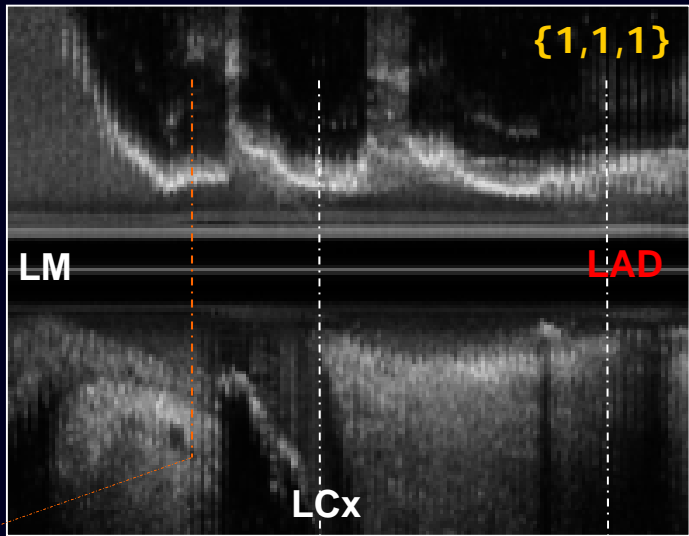
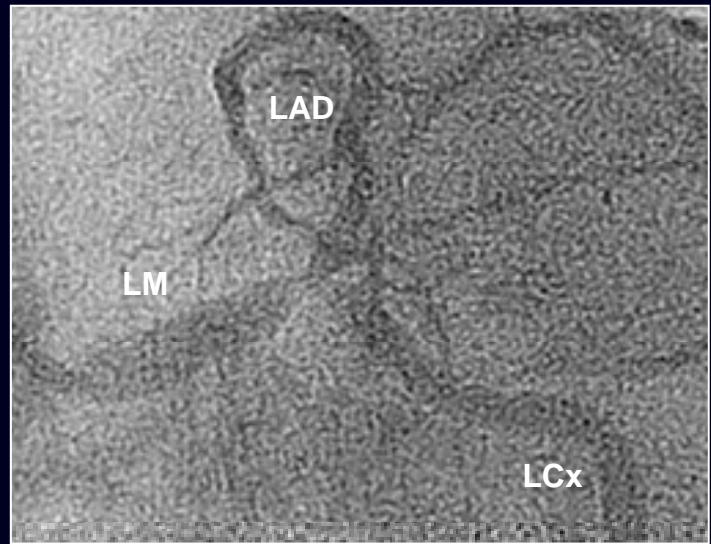
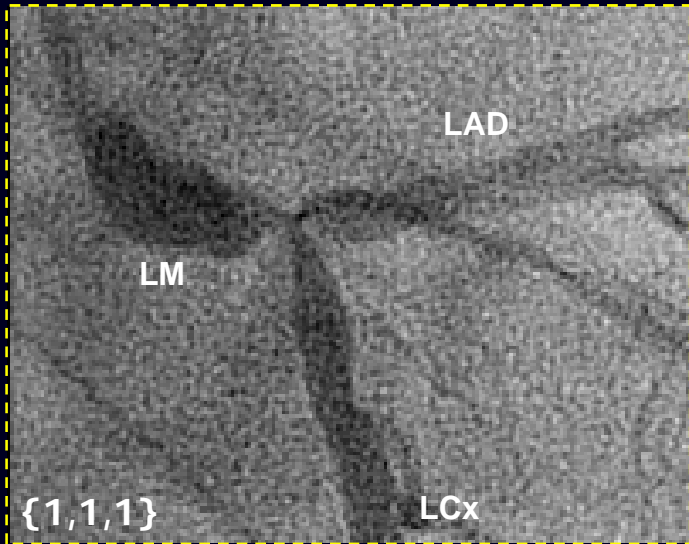
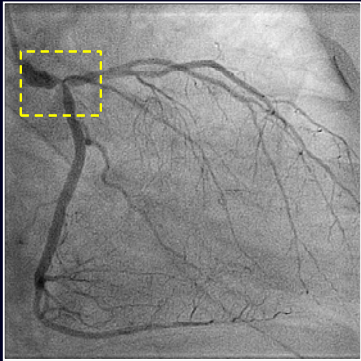
Carina displacement



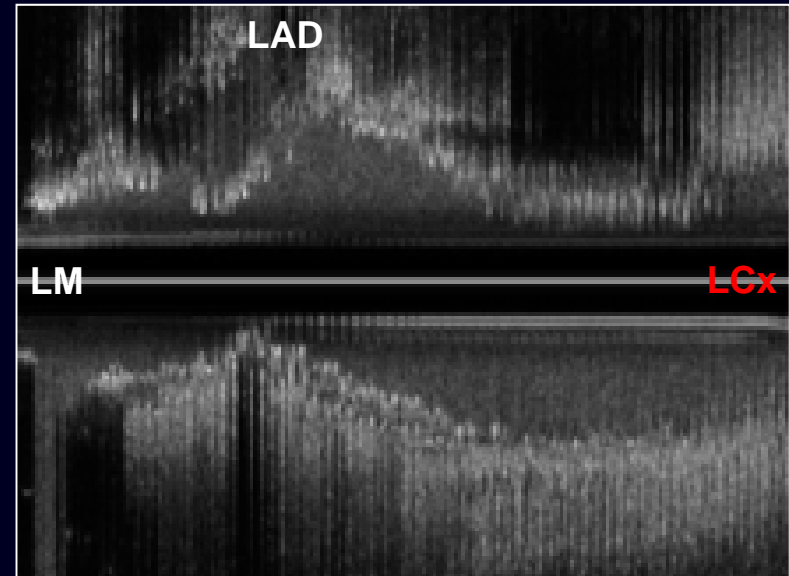
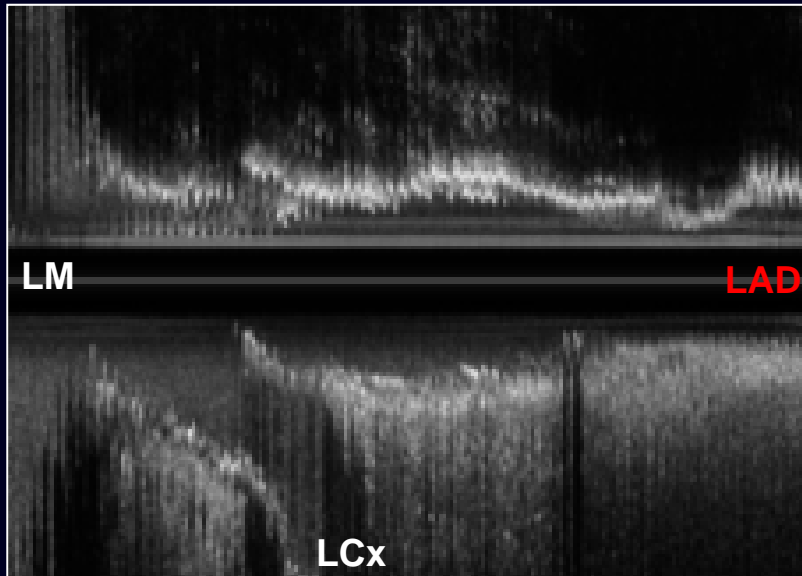
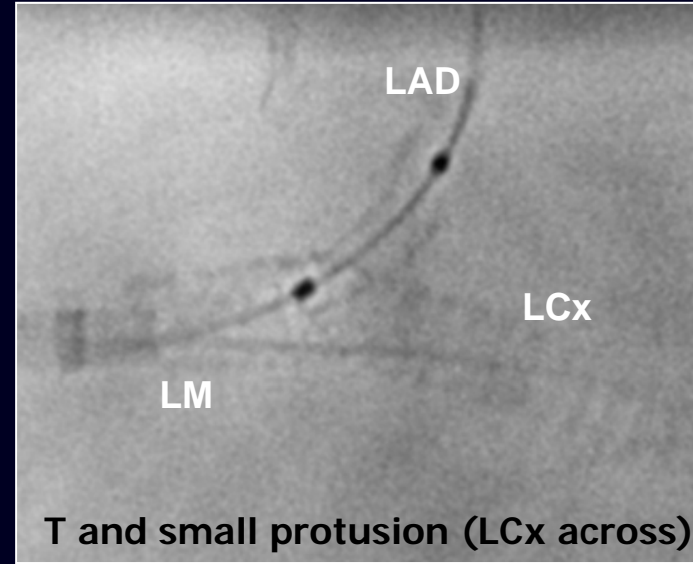
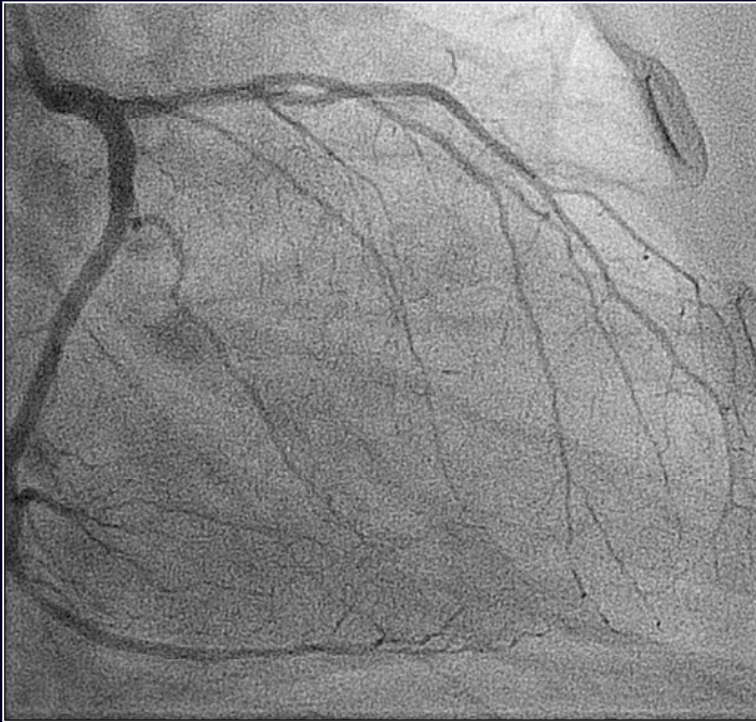
Carina repositioning

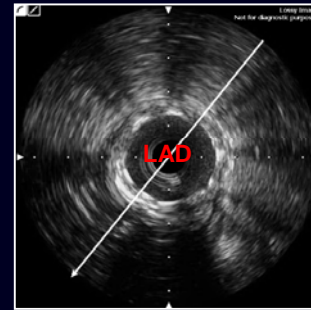
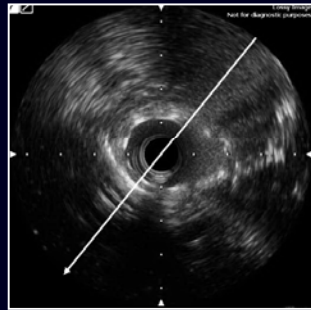
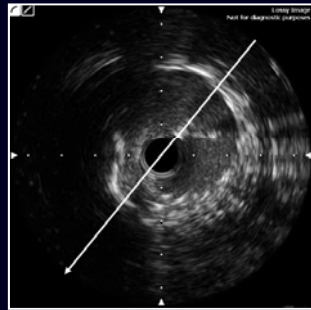
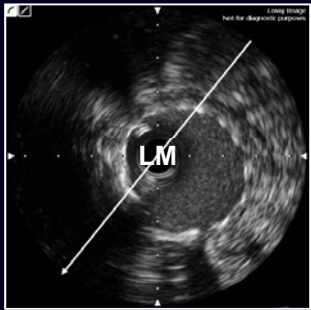


2 stent

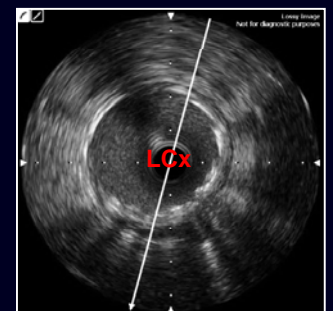
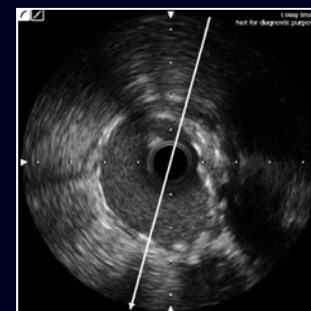
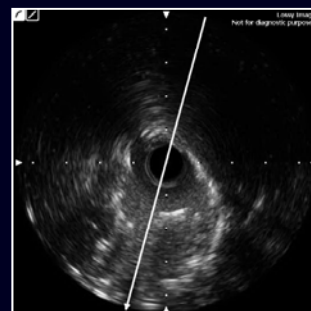
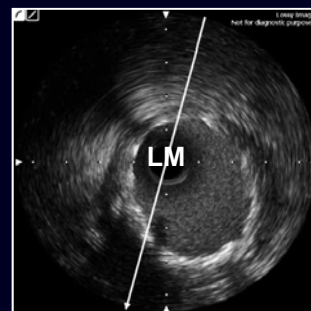
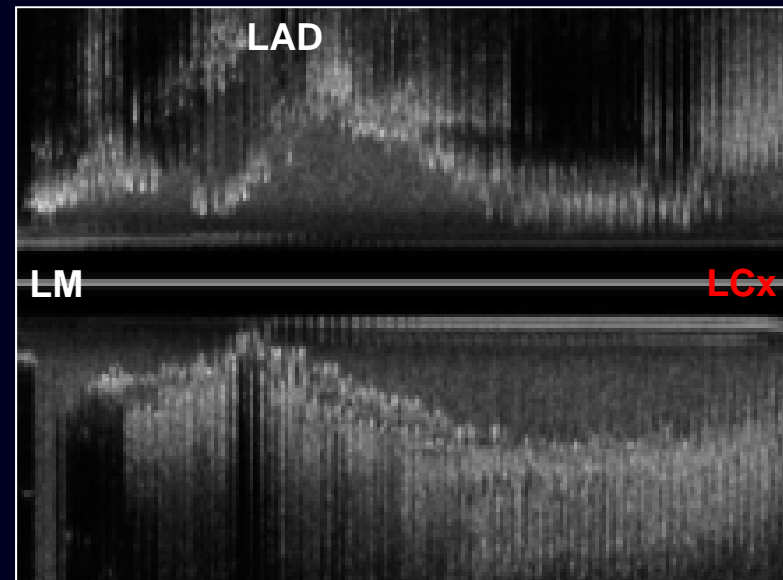
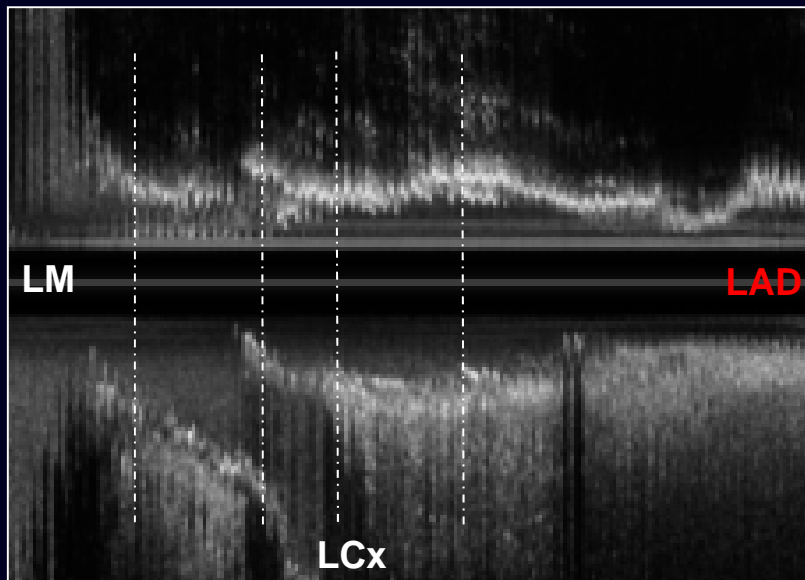


2 stent





LAD pull-back



LCx pull-back

SPIKY CARINA IN BIFURCATION CORONARY LESIONS

ORIGINAL ARTICLE

Vulnerable Carina Anatomy and Ostial Lesions in the left Anterior Descending Coronary Artery After Floating-Stent Treatment

Eyebrow sign



“spiky carina”

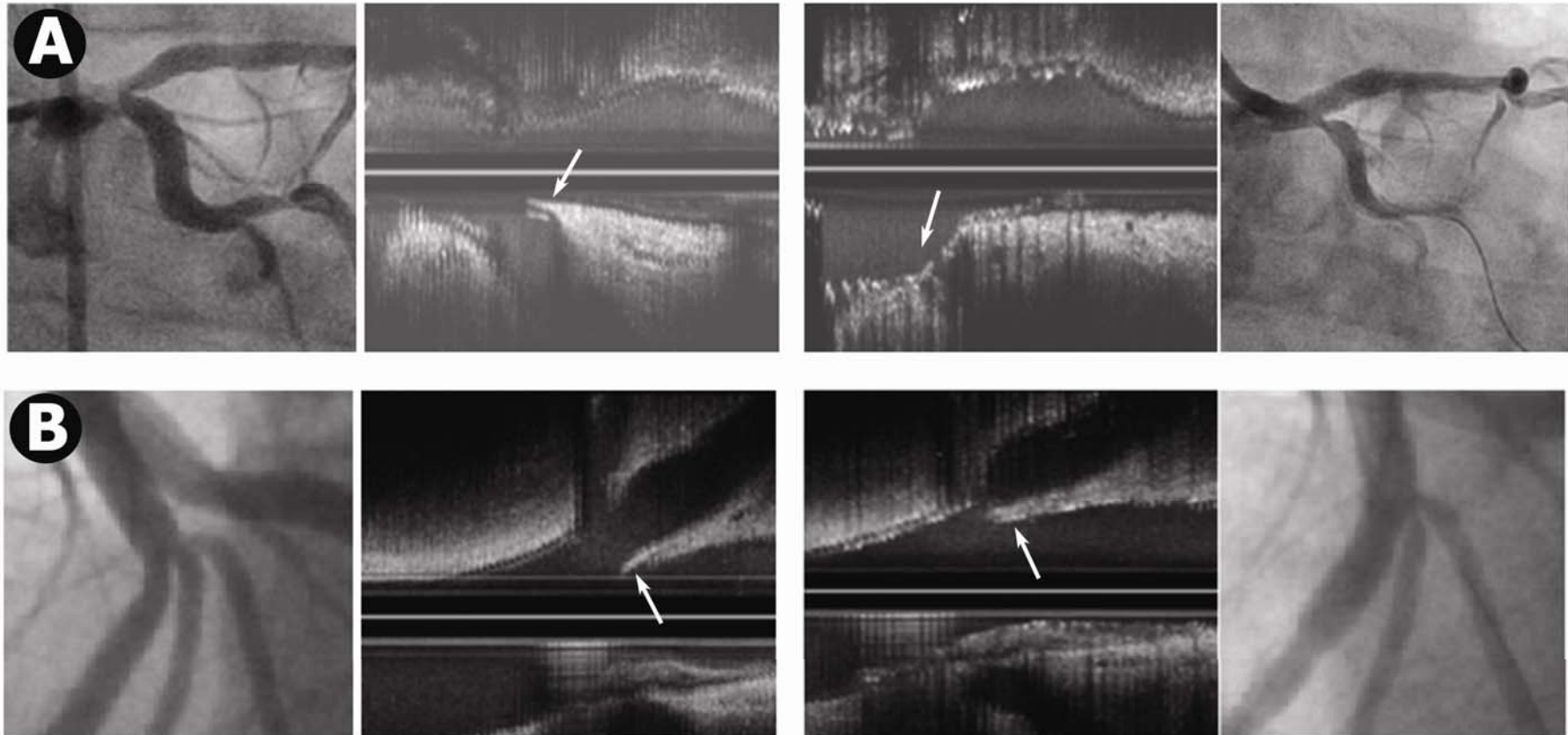
Predictors of ostial side branch damage during provisional stenting of coronary bifurcation lesions not involving the side branch origin: an ultrasonographic study

Javier Suárez de Lezo¹*, MD, PhD; Alfonso Medina², MD, PhD; Pedro Martín², MD, PhD; José Novoa², MD; José Suárez de Lezo¹, MD, PhD; Manuel Pan², MD, PhD; Eduardo Caballero², MD, PhD; Francisco Melián², MD, PhD; Francisco Mazuelos¹, MD PhD; Verónica Quevedo², MD

1. Department of Cardiology, Reina Sofía Hospital, University of Córdoba (IMIBIC), Córdoba, Spain 2. Dr. Negrín Hospital, Department of Cardiology, University of Las Palmas, Las Palmas de Gran Canaria, Spain

Baseline

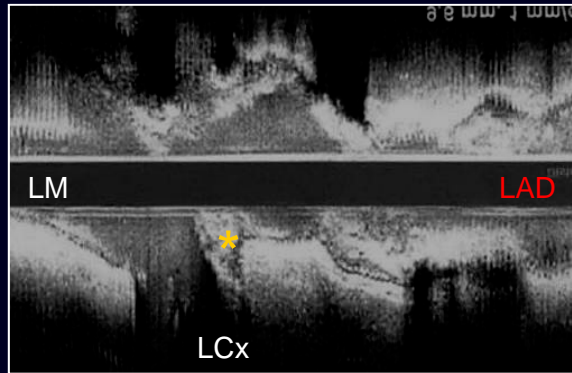
After MB stenting



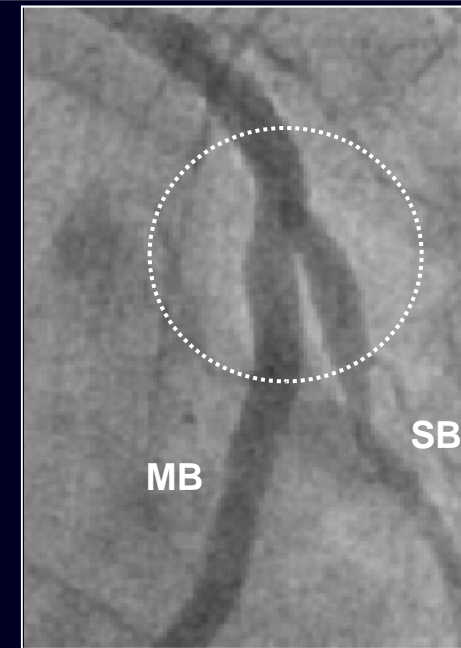
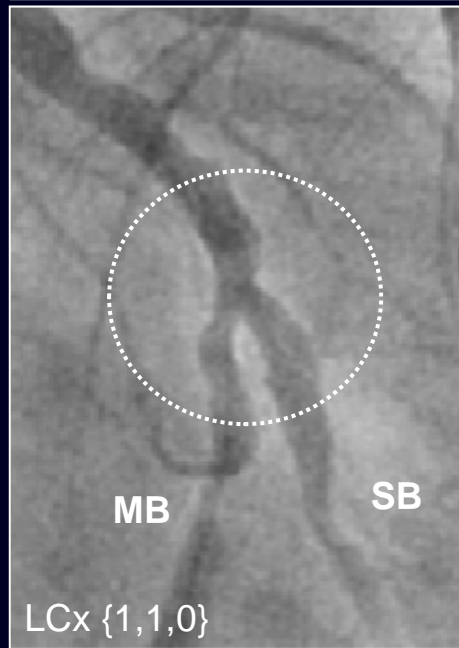
PLAQUE AT THE CARINA IN BIFURCATION CORONARY LESIONS

Original article

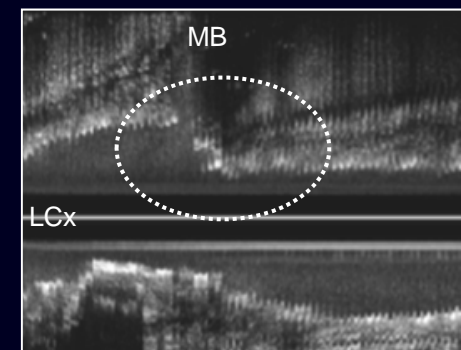
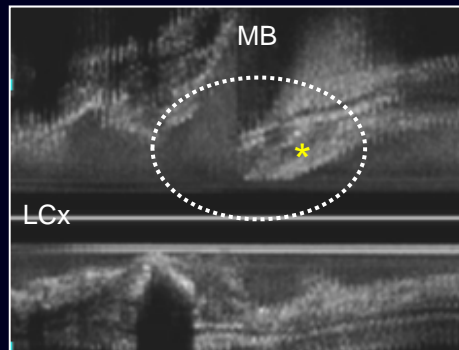
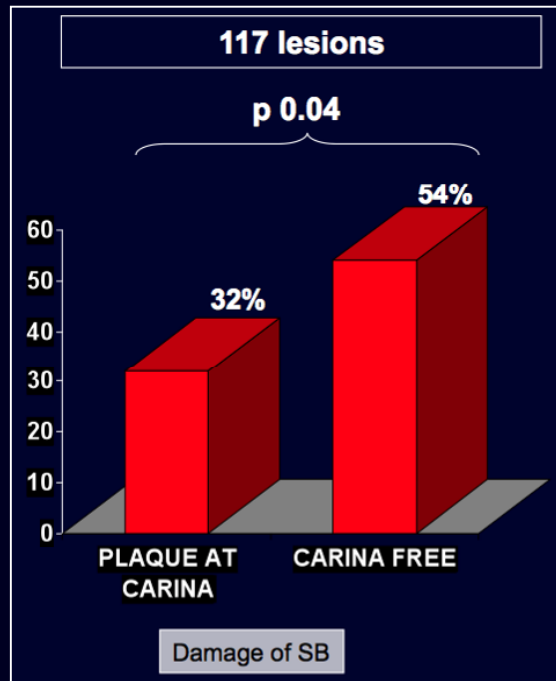
Ultrasound Study of the Prevalence of Plaque at the Carina in Lesions that Affect the Coronary Bifurcation: Implications for Treatment With Provisional Stent



Plaque at the carina might prevent carina shifting



Plaque at the carina 63/195 (32%)



Conclusions

- Medina's angiographic classification makes the description of the anatomy of coronary bifurcations more simple.
- Side branch size and lesion length are essential to plan the intervention.
- Longitudinal IVUS scans provide additional anatomic information:
 - vulnerable carina anatomy ("eyebrow sign")
 - plaque distribution (carina, SB ostium, MB proximal-distal)