



XXIII Jornadas SOLACI
9° Región Centroamérica y el Caribe
7 y 8 de Agosto de 2014



**Cuál es la mejor estrategia
en bifurcaciones?**



Sociedad Puertorriqueña de
CARDIOLOGÍA
INTERVENCIONAL

Sheraton Puerto Rico Hotel & Casino
San Juan, Puerto Rico

informes: www.solaci.org
(5411) 4954-7173

Speaker

Abbott, Boston Scientific, Biosensors, Terumo

Research Grants

Abbott, Boston Scientific

Training and Education Programs

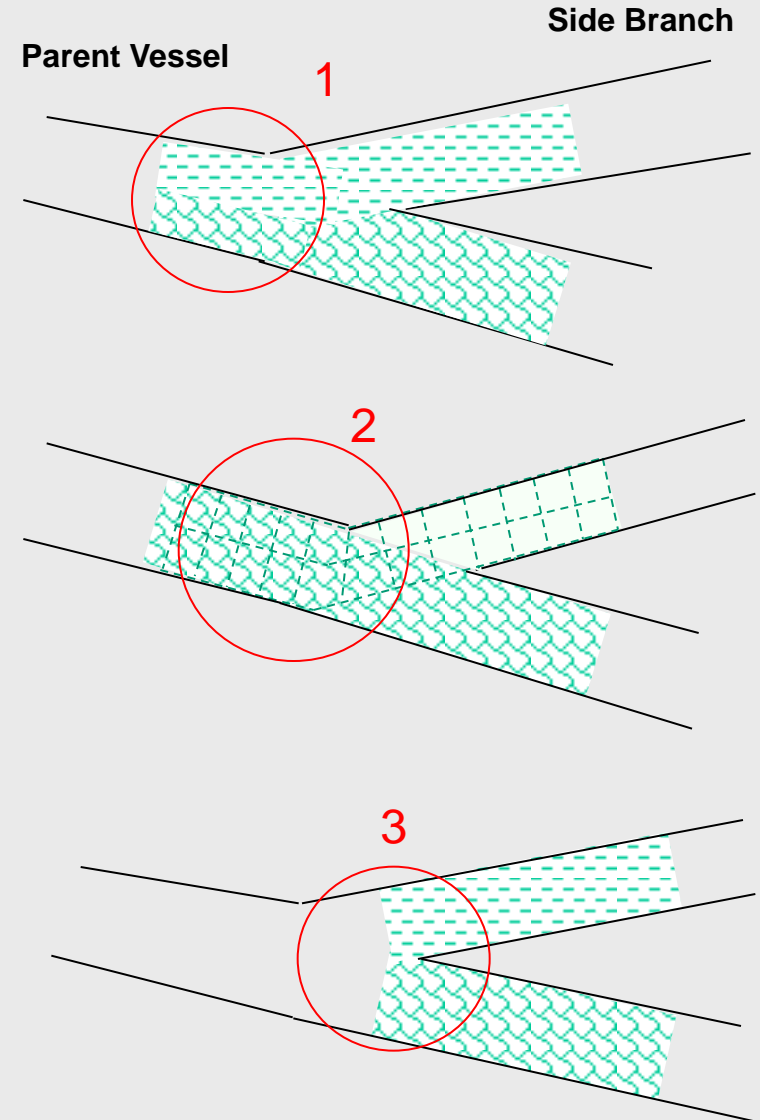
Abbott, Biosensors, Terumo

Bifurcation stenting rationale

- SKS creates a new carina, hard to recross with a lot of metal overlap floating in parent vessel lumen (1)

- “Culotte” allows optimal carina and side branch scaffold but still, two metal layers in the whole circumference of parent vessel and still crushed metal in vessel lumen (2)

- V stent becomes, most of the time, a sort of “mini SKS”. If not, the proximal portion of parent vessel, the carina and side branch ostium, usually remain uncovered (3)

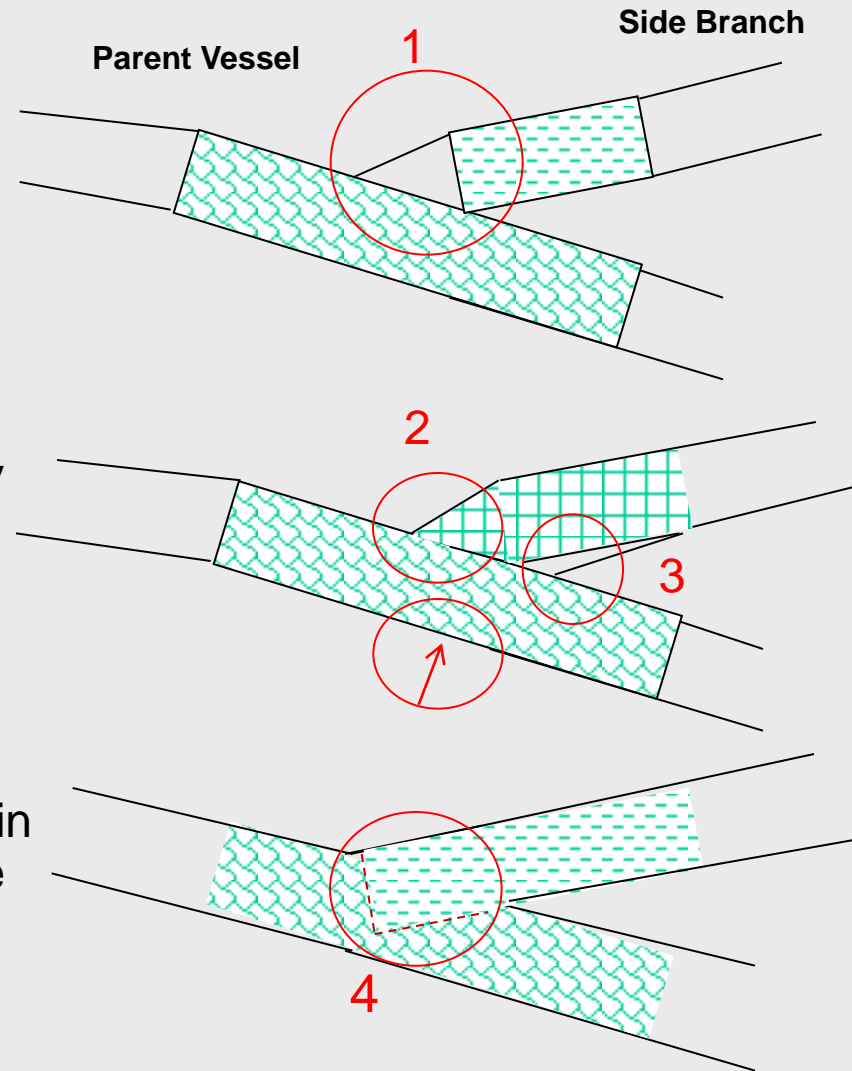


Bifurcation stenting rationale

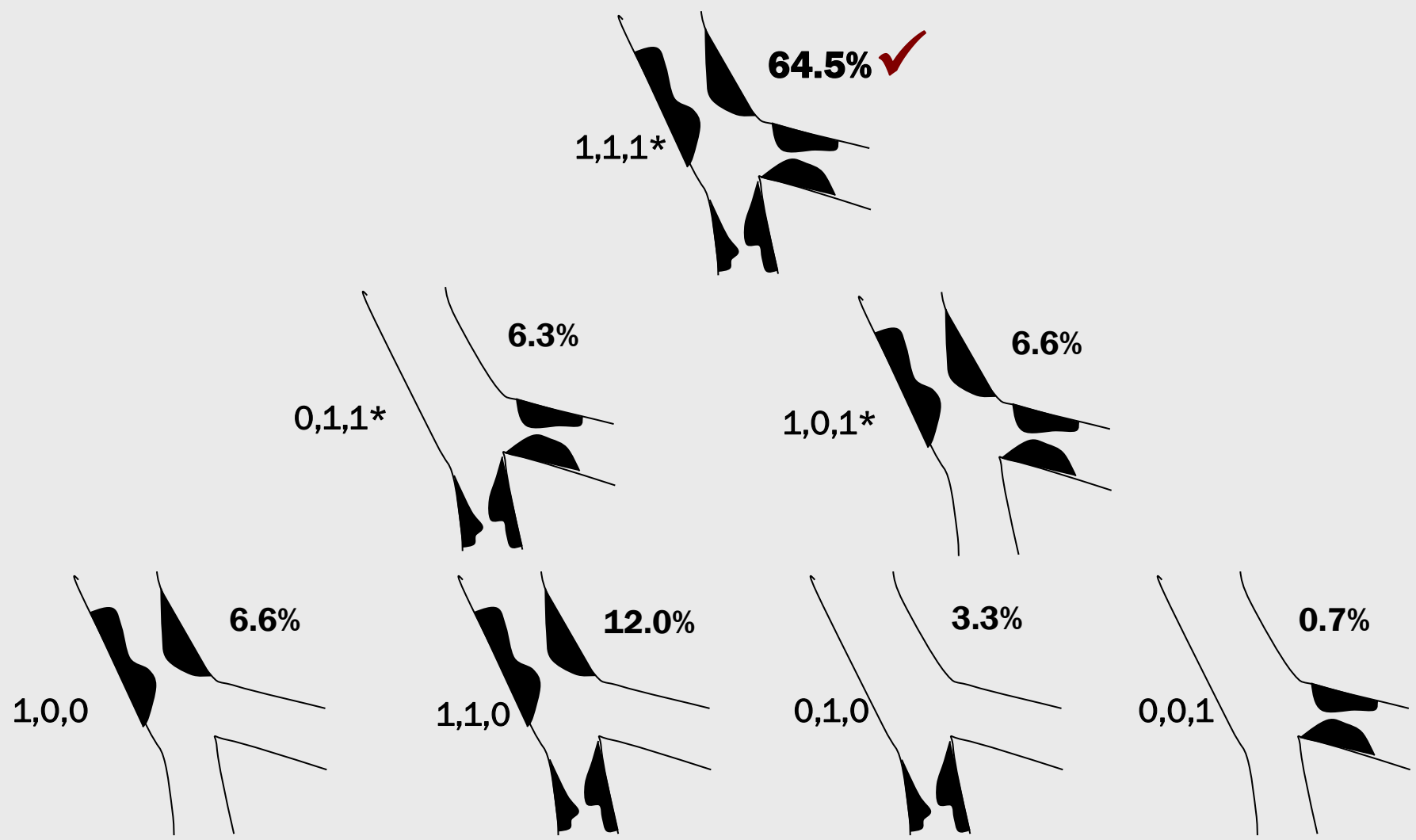
- T-stenting can leave a gap in coverage at the SB ostium (1)

- If “crushed” to cover the ostium, 2 or 3 stent layers are left to block side branch flow (2). The crushing action may pull the stent away from the carina (3)

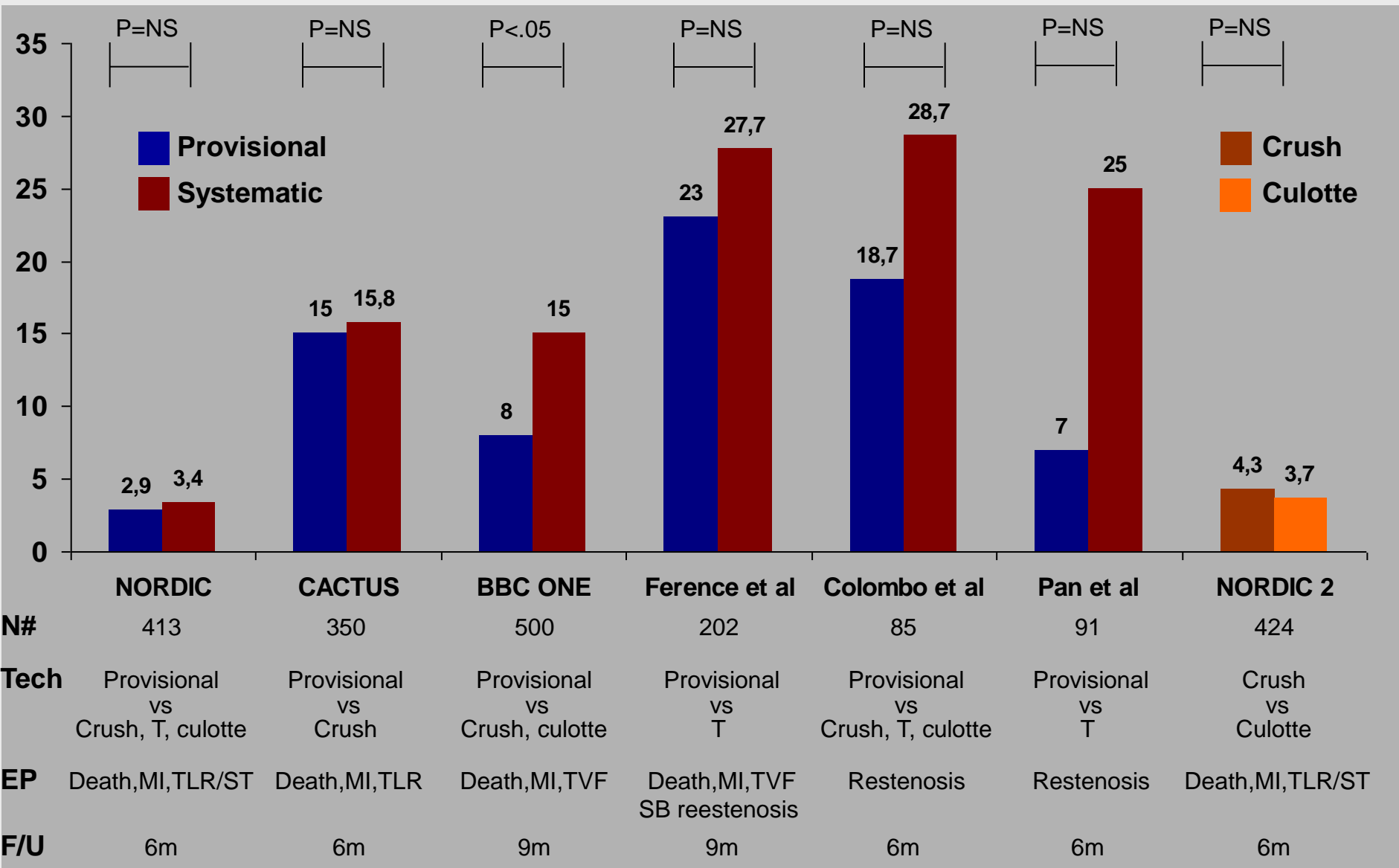
- Provisional side branch technique seems to be the most accepted and with good results but, if side branch bail out stent is needed, protrusion in parent vessel is a main concern (TAP technique or bail out mini crush) (4)



DIVERGE: Medina Class All Patients

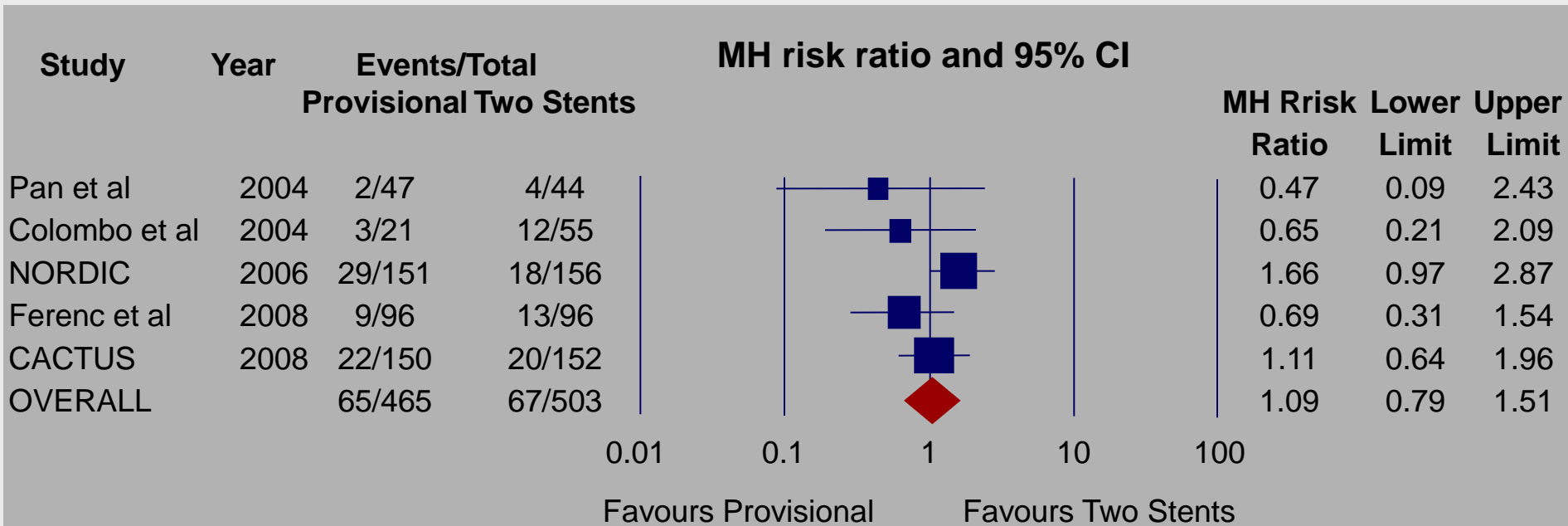


Randomized Bifurcation Trials



Meta-Analysis – Bifurcations with DES One (Provisional) vs Two Stents

Side Branch Reestenosis

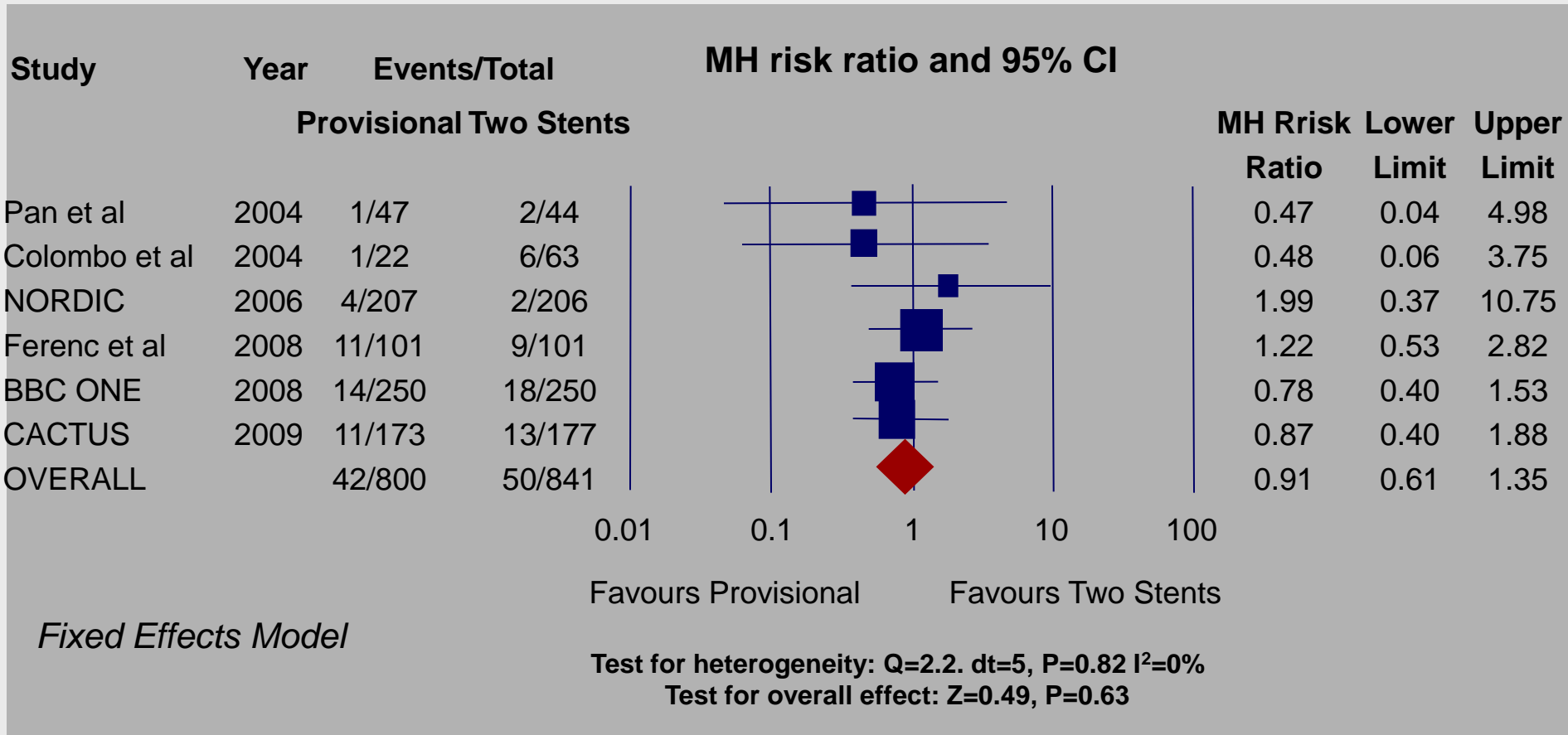


Fixed Effects Model

Test for heterogeneity: $Q=5.3$, $df=4$, $P=0.26$ $I^2=25\%$
 Test for overall effect: $Z=0.53$, $P=0.60$

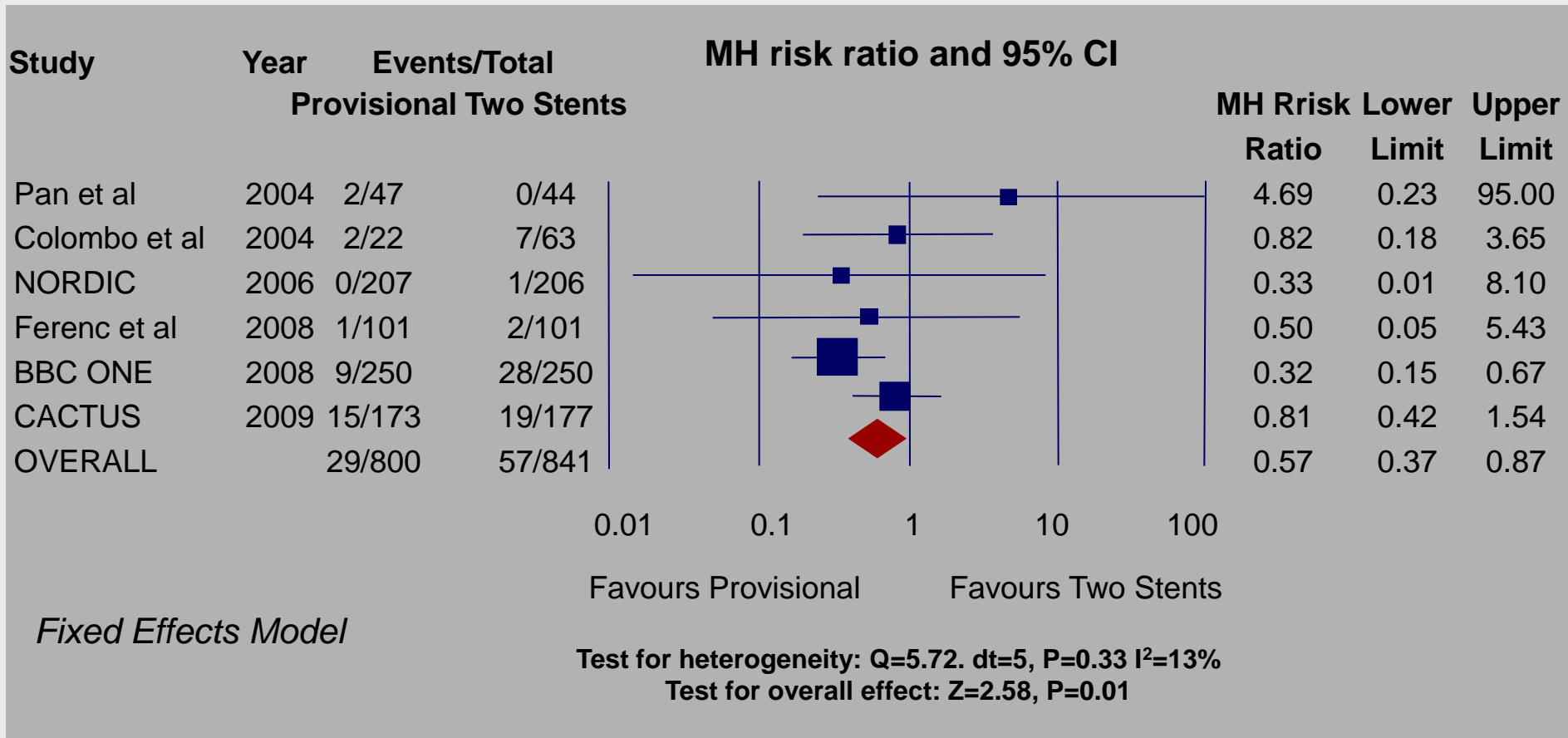
Meta-Analysis – Bifurcations with DES One (Provisional) vs Two Stents

TLR



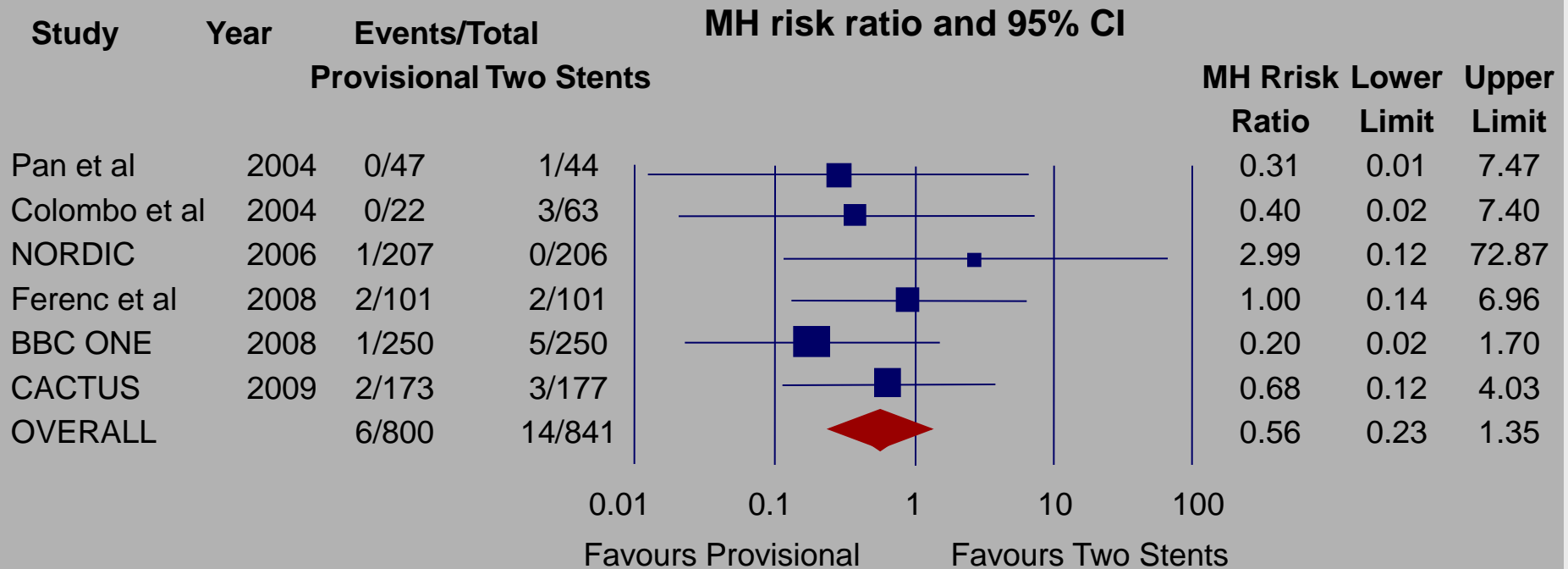
Meta-Analysis – Bifurcations with DES One (Provisional) vs Two Stents

Myocardial Infarction



Meta-Analysis – Bifurcations with DES One (Provisional) vs Two Stents

Stent Thrombosis



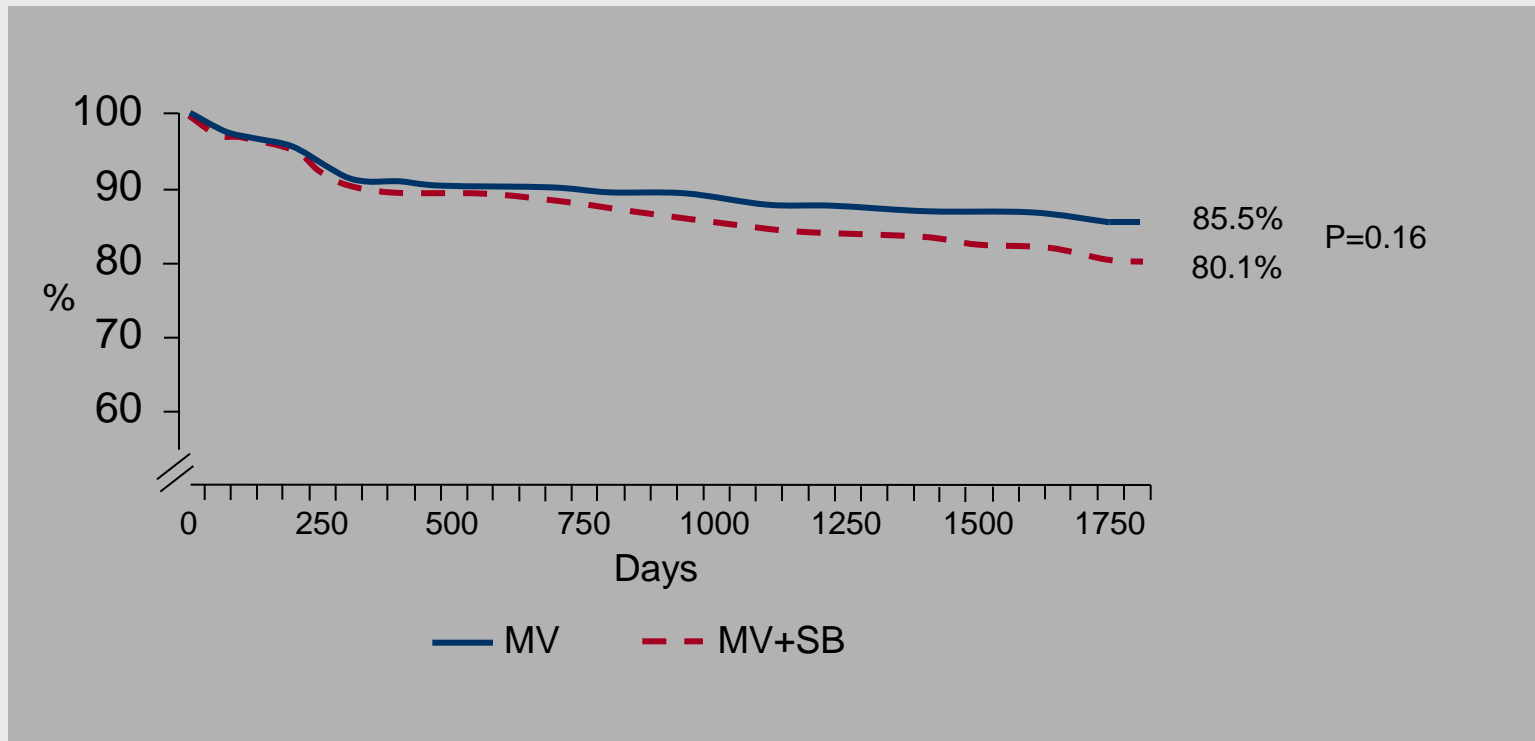
Fixed Effects Model

Test for heterogeneity: $Q=2.2$, $df=3$, $P=0.52$, $I^2=0\%$

Test for overall effect: $Z=0.76$, $P=0.45$

Study Simple vs Complex Stenting Strategy in Non-LM PCI NORDIC Bifurcation 5 Year Follow-Up

MACE free survival
Cardiac death, MI, TVR, stent thrombosis



347 J.S.

♂ 87 años

SIA con isquemia posterolateral

7 días de internación en UCI

EUROscore 24%

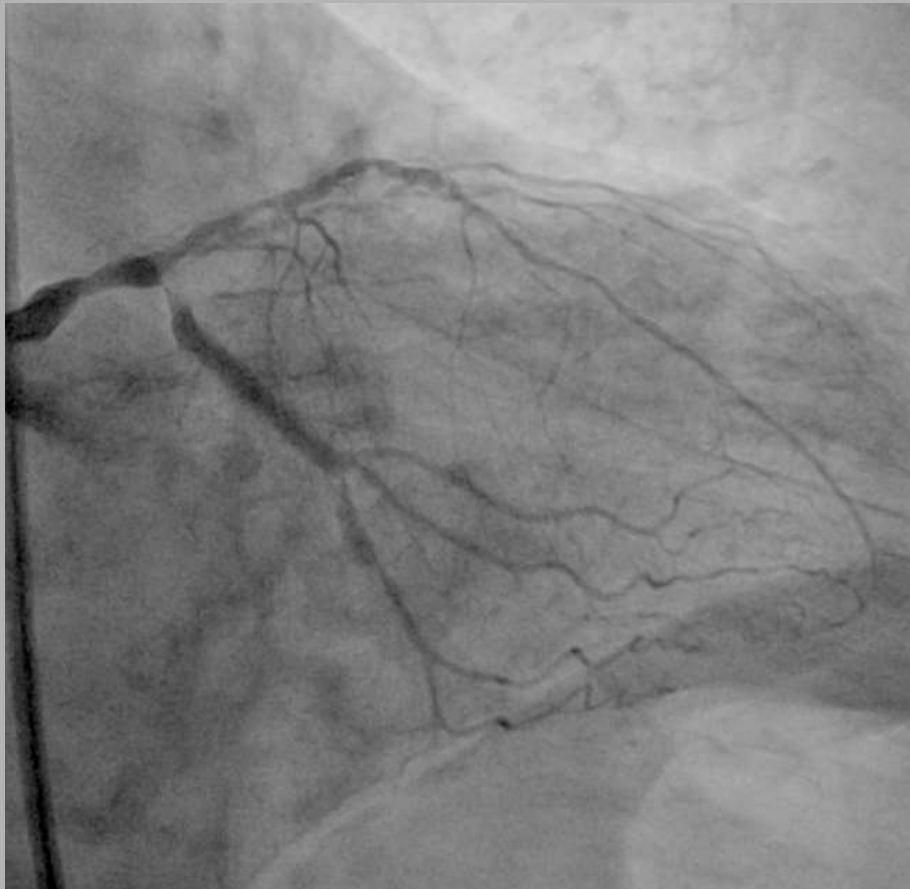
STS 13%

Syntax 29



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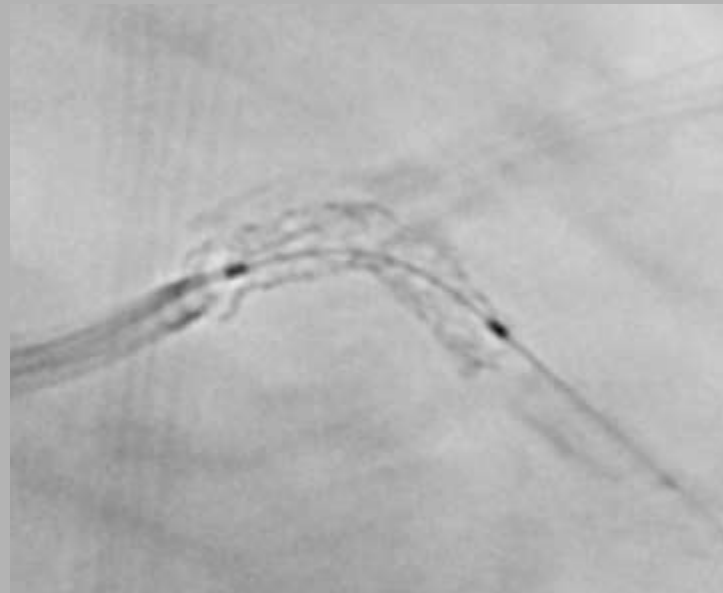
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Bivalirudina

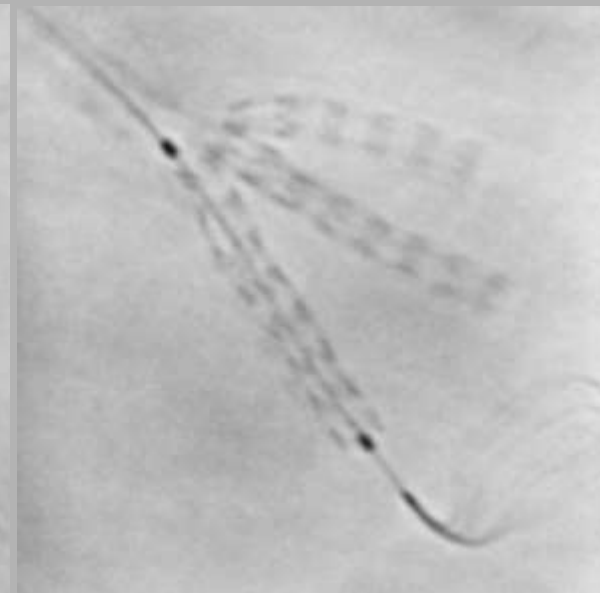
Rotablator



DES a Tronco
DES a ostium de CX



3 DES a trifurcacion de CX





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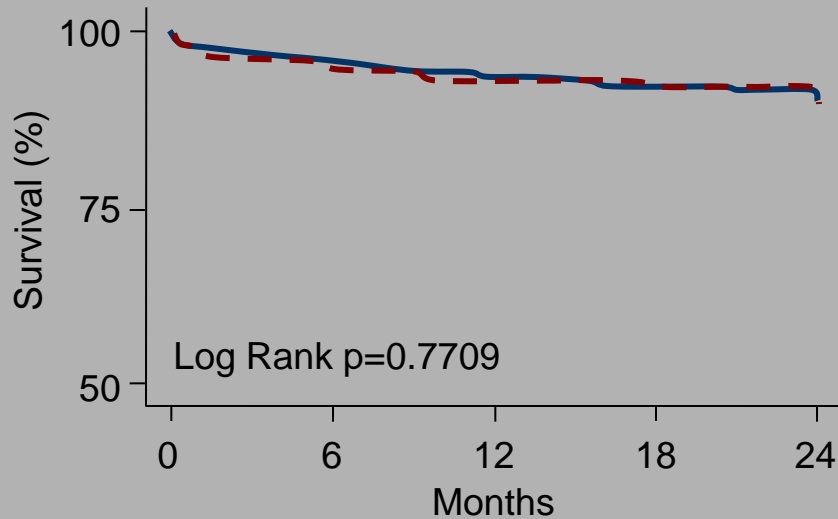


PRE

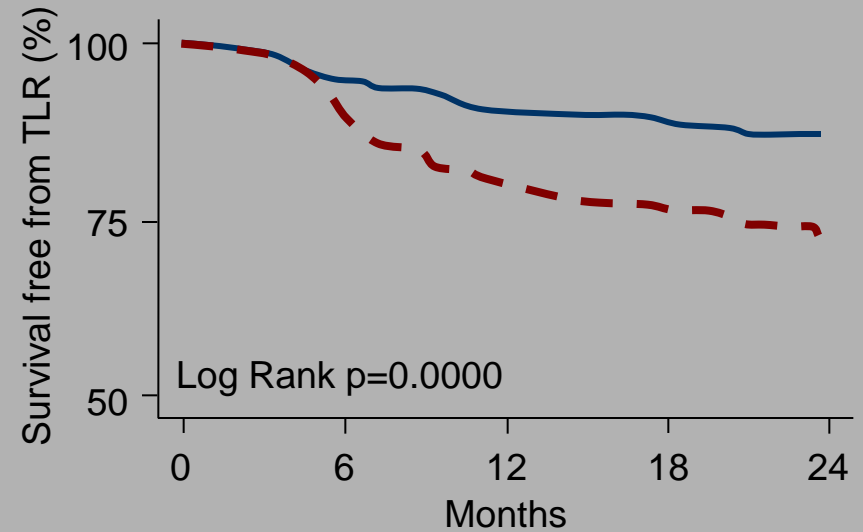


POST

One Stent Versus Two Stent Technique in UPLM



At risk	0	6	12	18	24
1 Stent	456	384	301	210	164
2 Stent	317	257	207	162	141



At risk	0	6	12	18	24
1 Stent	456	364	274	186	140
2 Stent	317	229	167	123	103

— 1 Stent

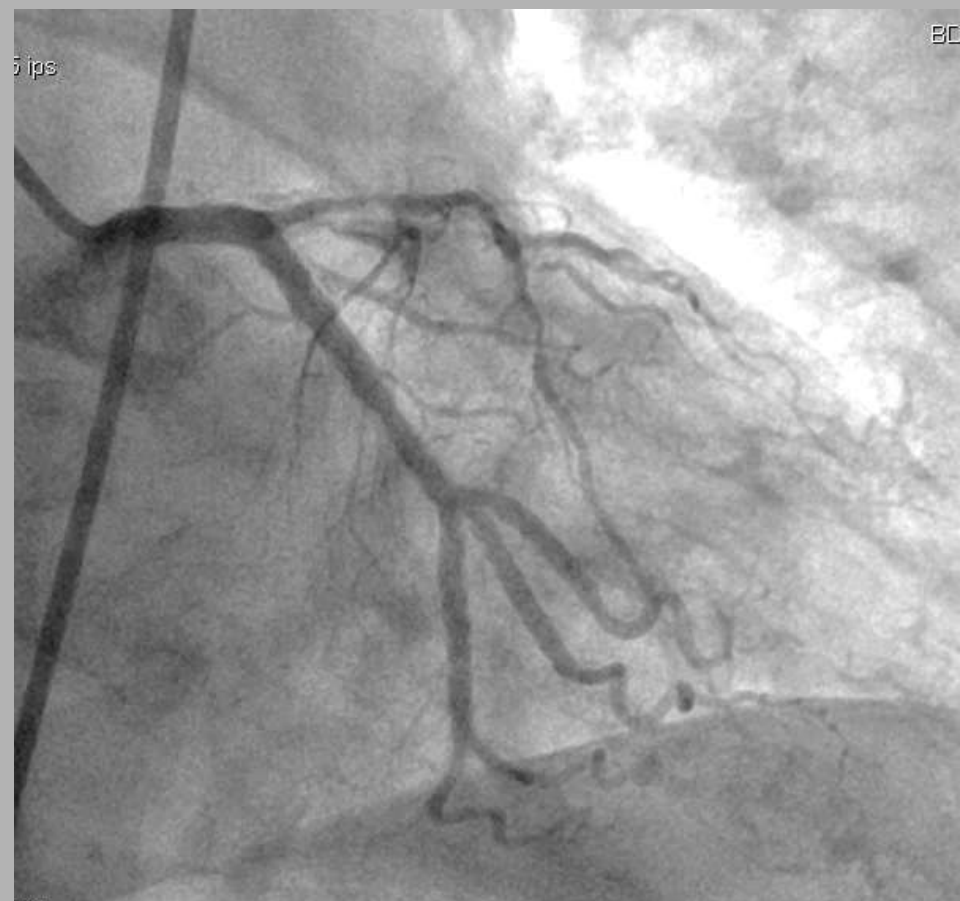
- - 2 Stents



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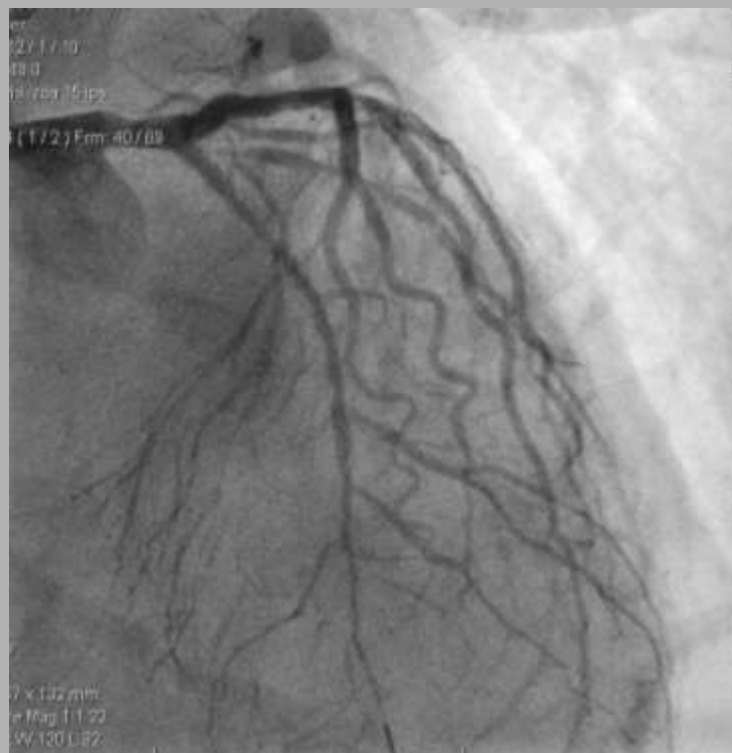
7 Meses después
SIA con cambios laterales
Trop I= 0.9





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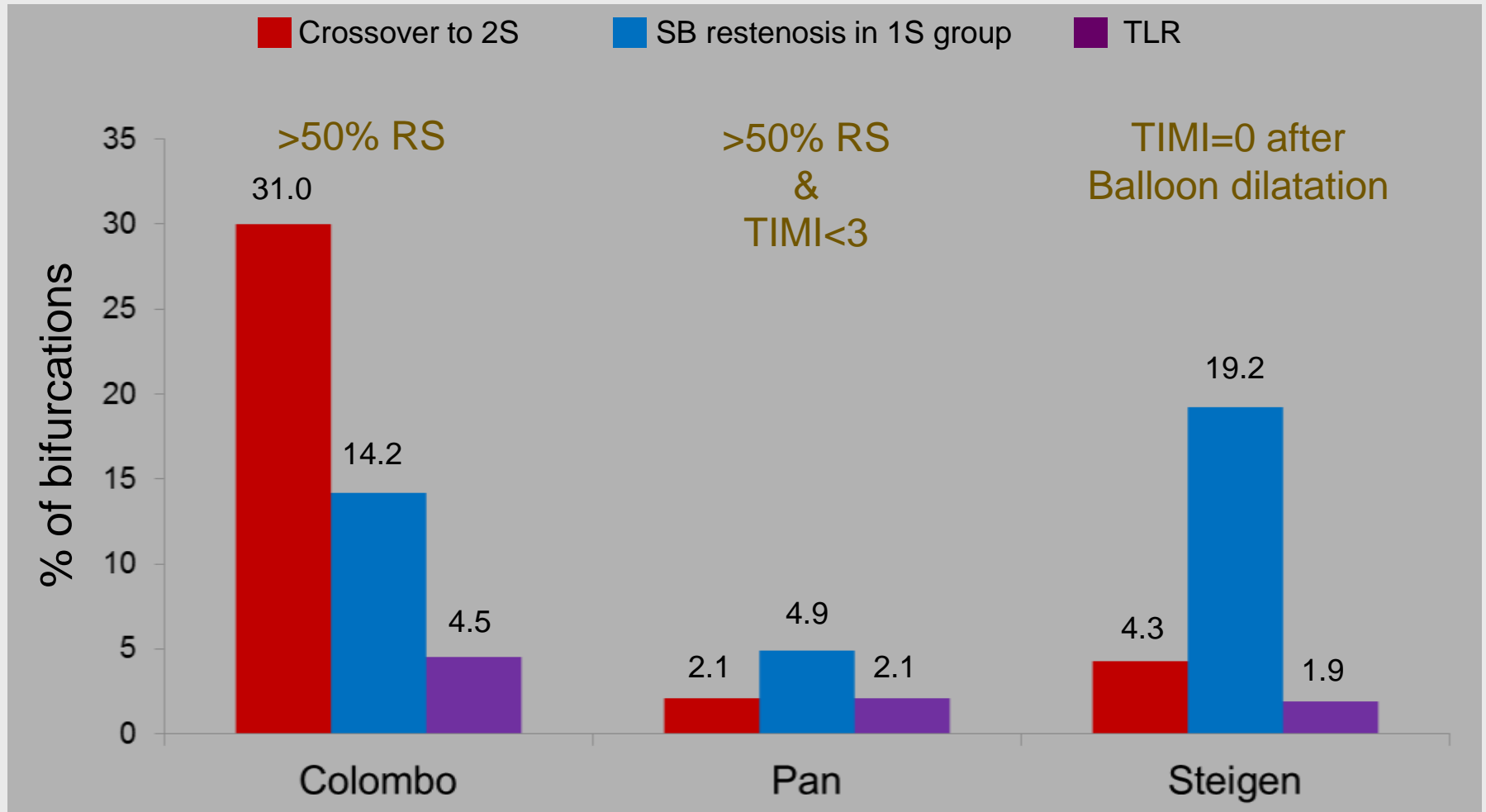


PRE



POST

How often do we need a second stent when using the Provisional approach?



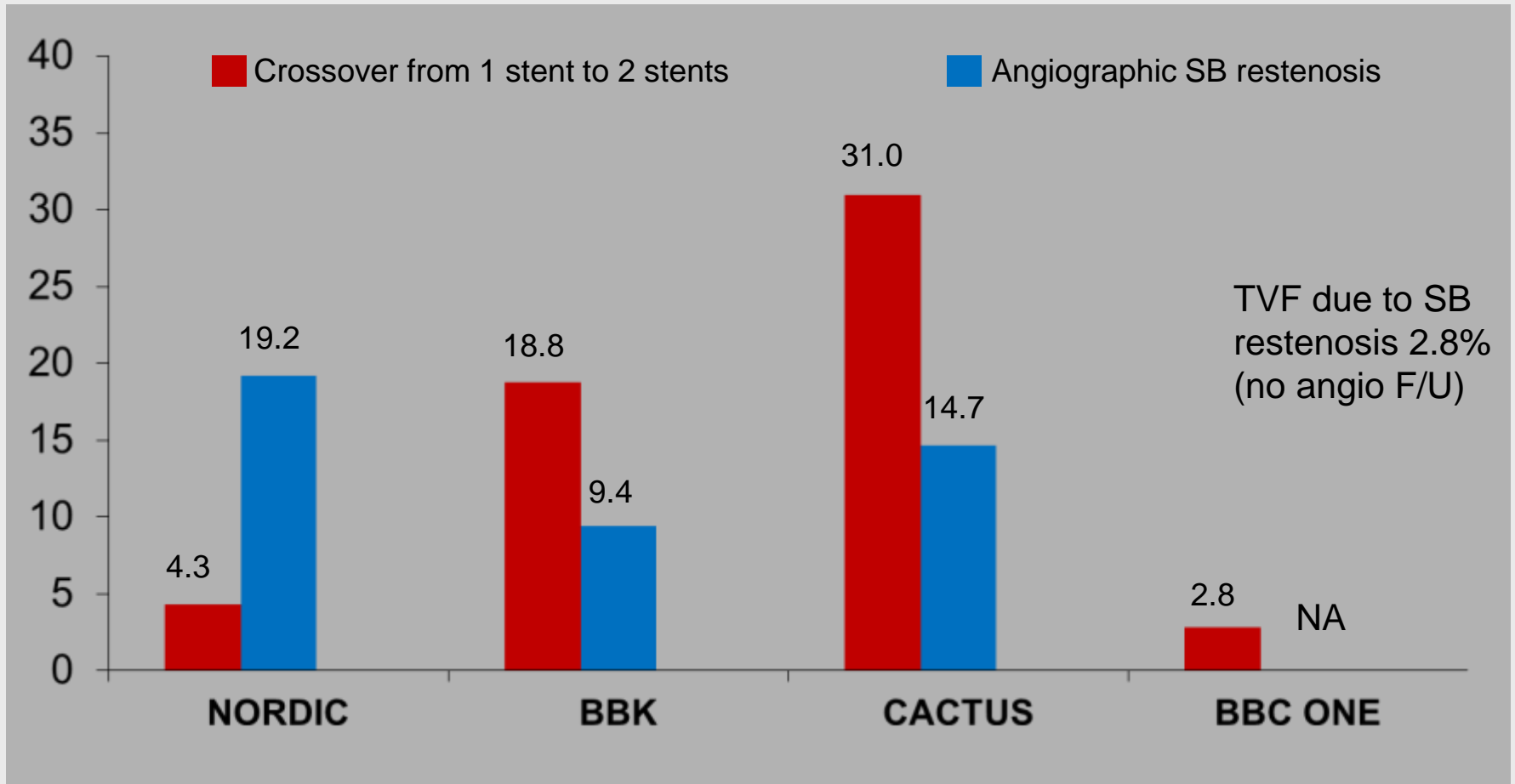
Colombo A, et al. Circulation 2004;109:1244-9

Pan M, et al. Am Heart J 2004;148:857-64.

Steigen TK, et al. Circulation 2006;114:1955-61.

How Often We Need 2nd Stent after MV Stent?

Crossover from 1 Stent to 2 Stents

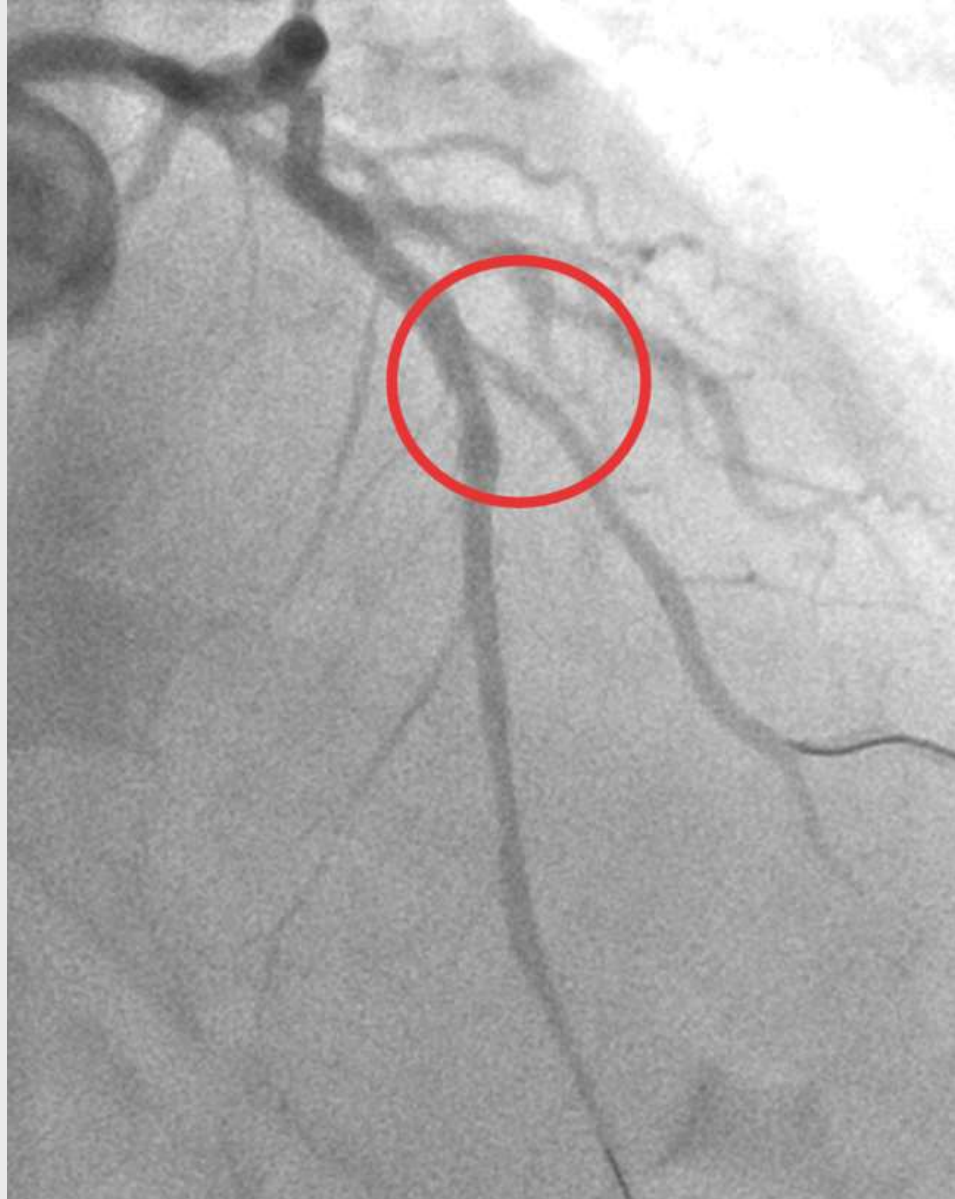


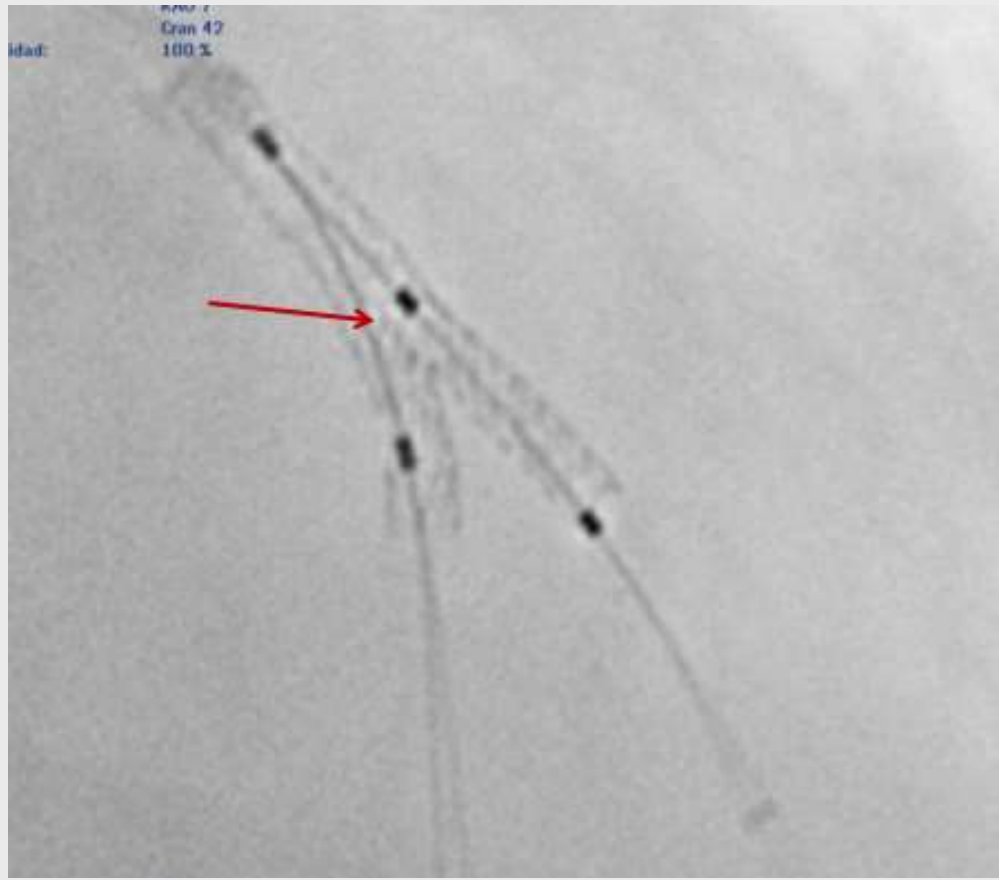
Steigen TK et al. Circulation. 2006;114:1955-1961

Ferenc M et al. Eur Heart J 2008; 29: 2859-2867

Colombo A et al. Circulation. 2009;119:71-78

Hildick-Smith D et al. Circulation. 2010;121:1235-1243





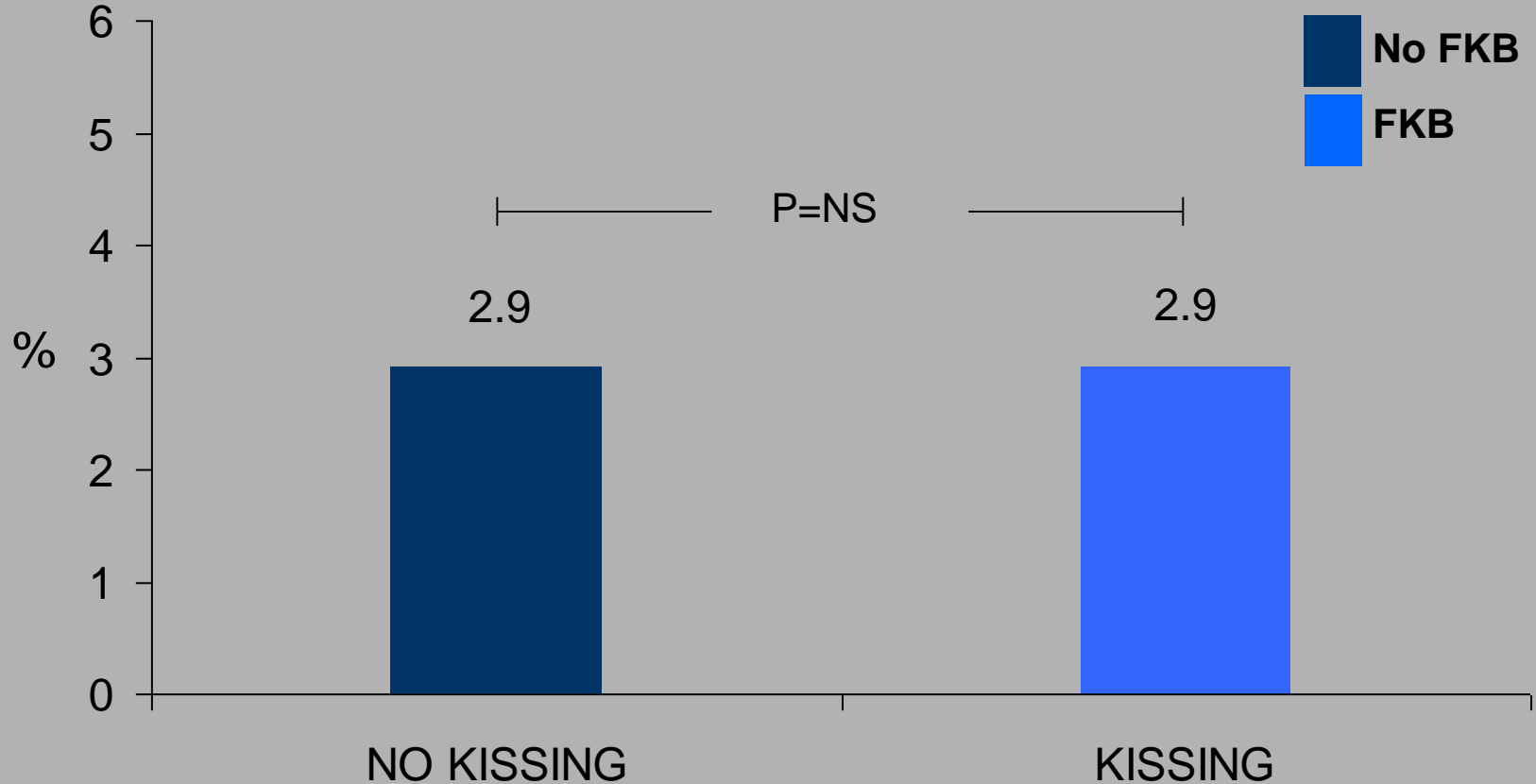


NORDIC III

RCT on FKB vs no FKB in All Bifurcations

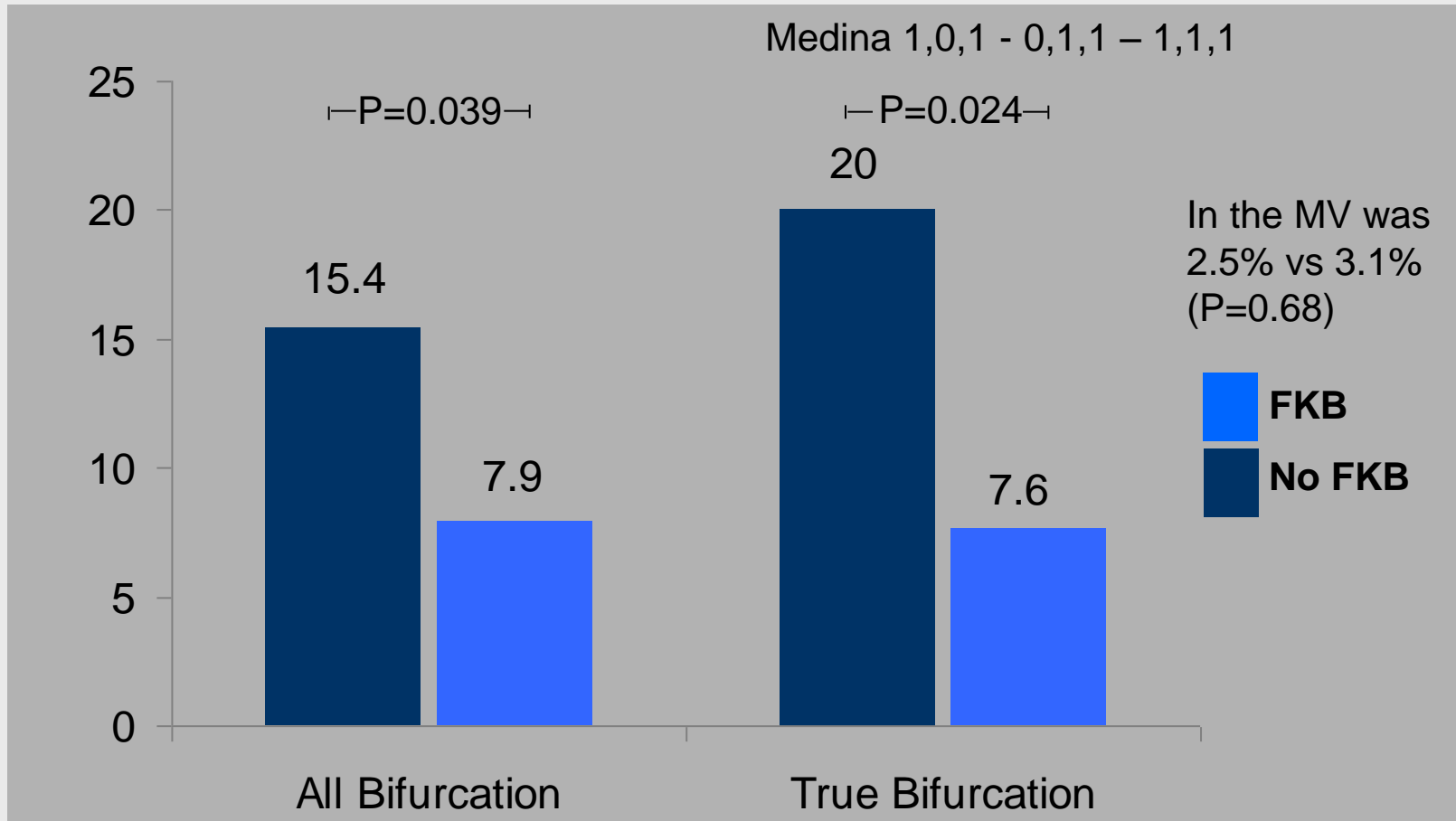
Only 50 % of the cases had a True Bifurcation Lesion!!

MACE at 6 months



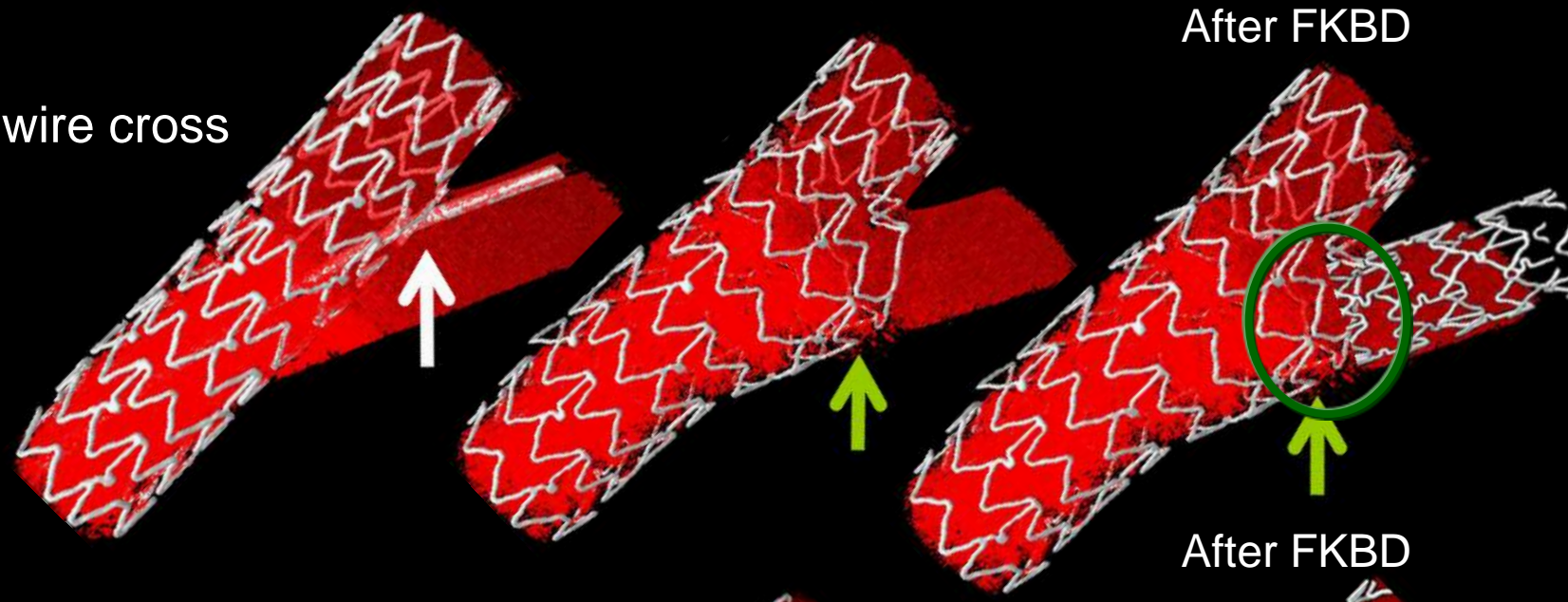
NORDIC III

Secondary end point Side Branch (SB) Binary (Re)stenosis after 8 months



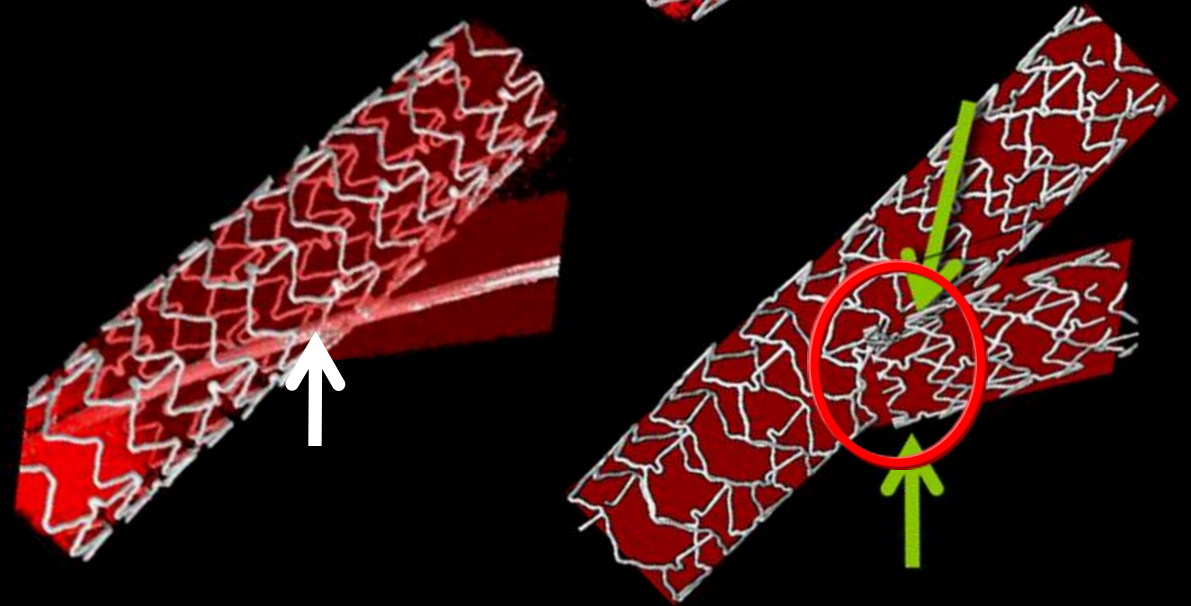
FKB reduced angiographic side branch (re)stenosis, specially in patients with true bifurcation lesions

Distal wire cross

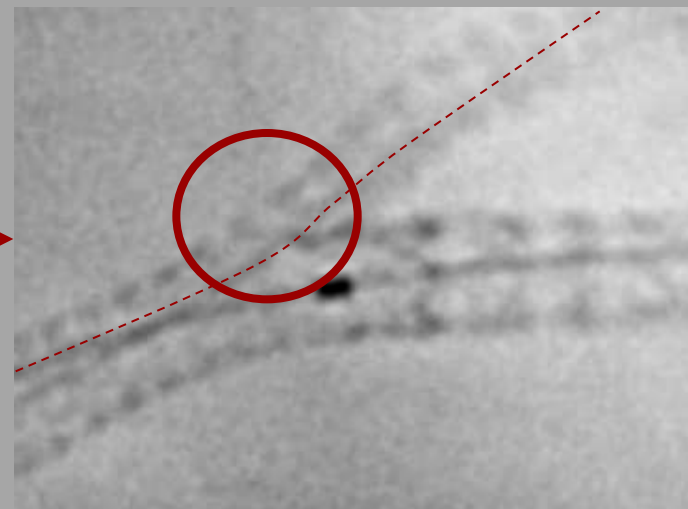
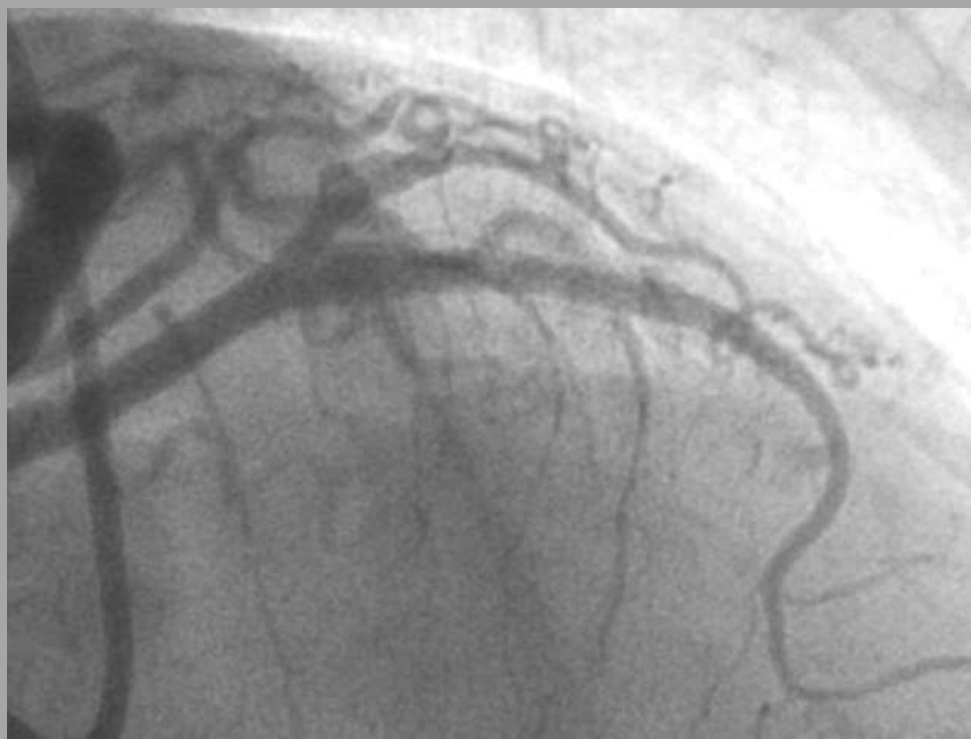
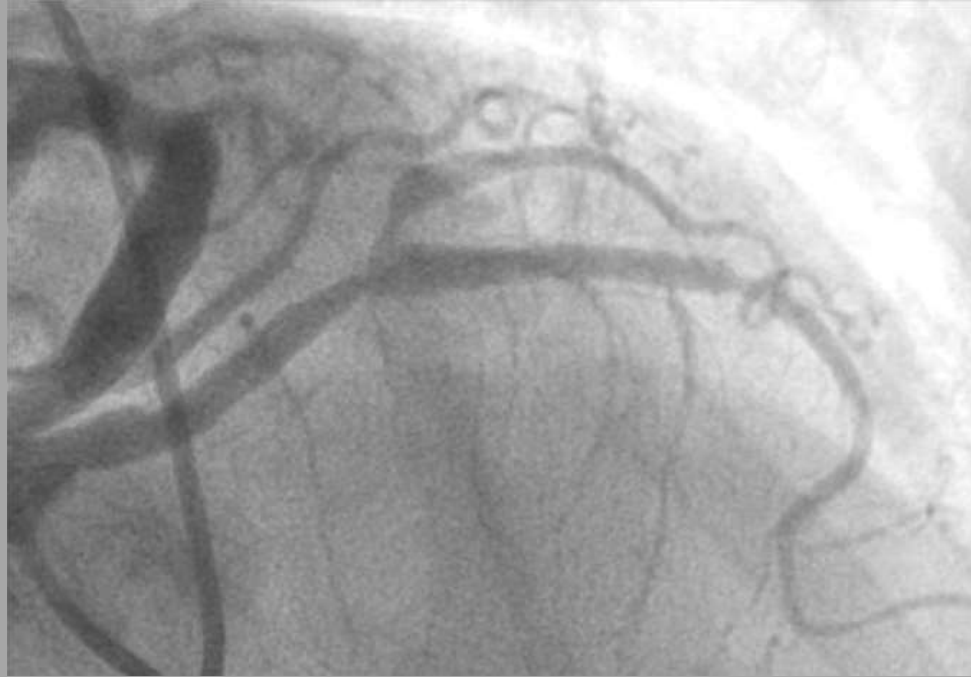


After FKBD

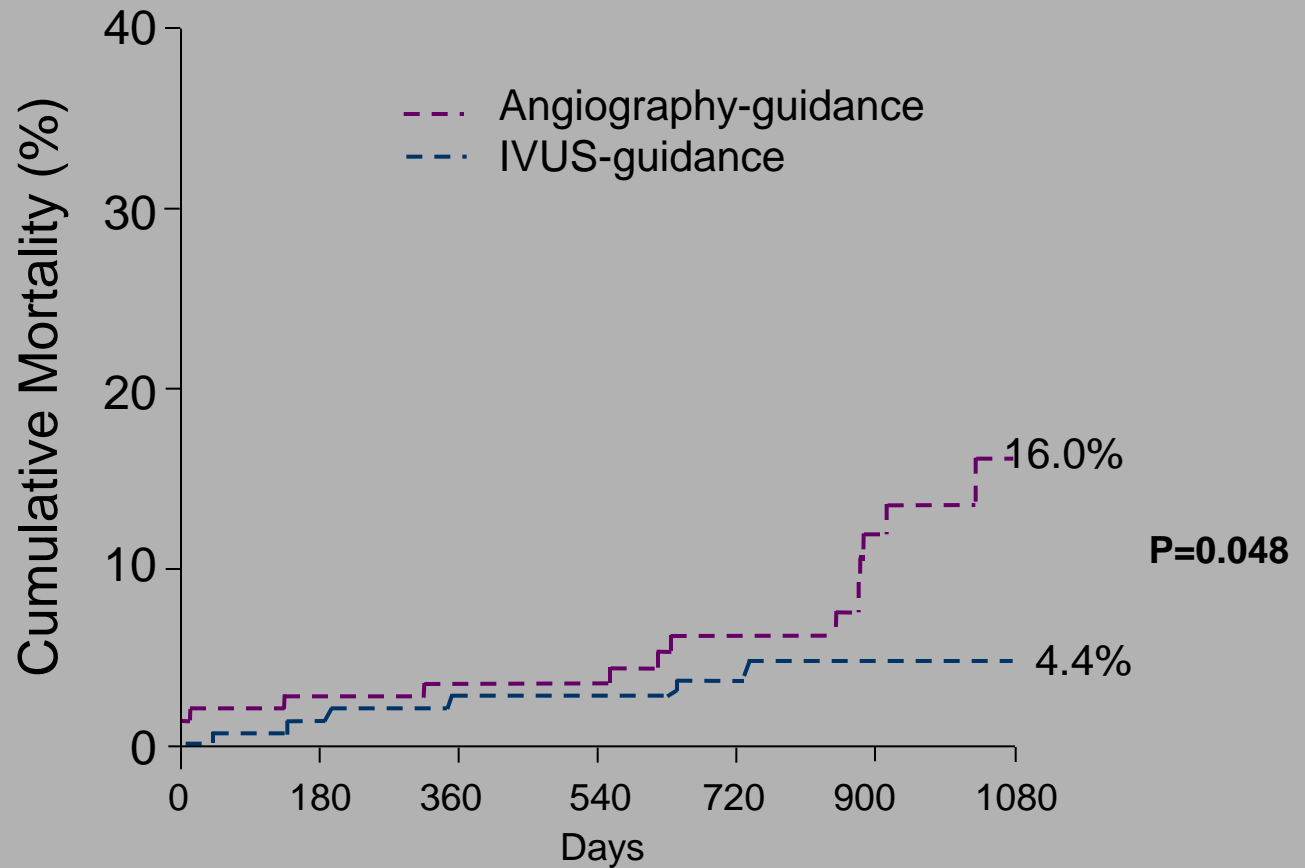
Proximal wire cross



After FKBD

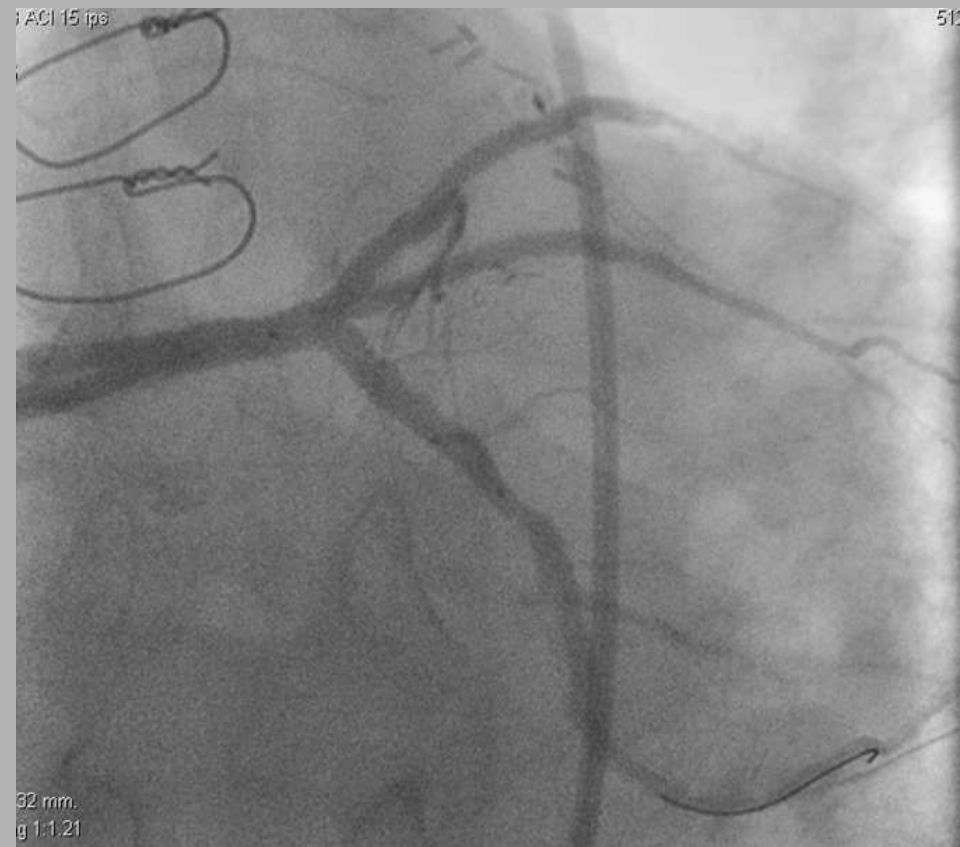
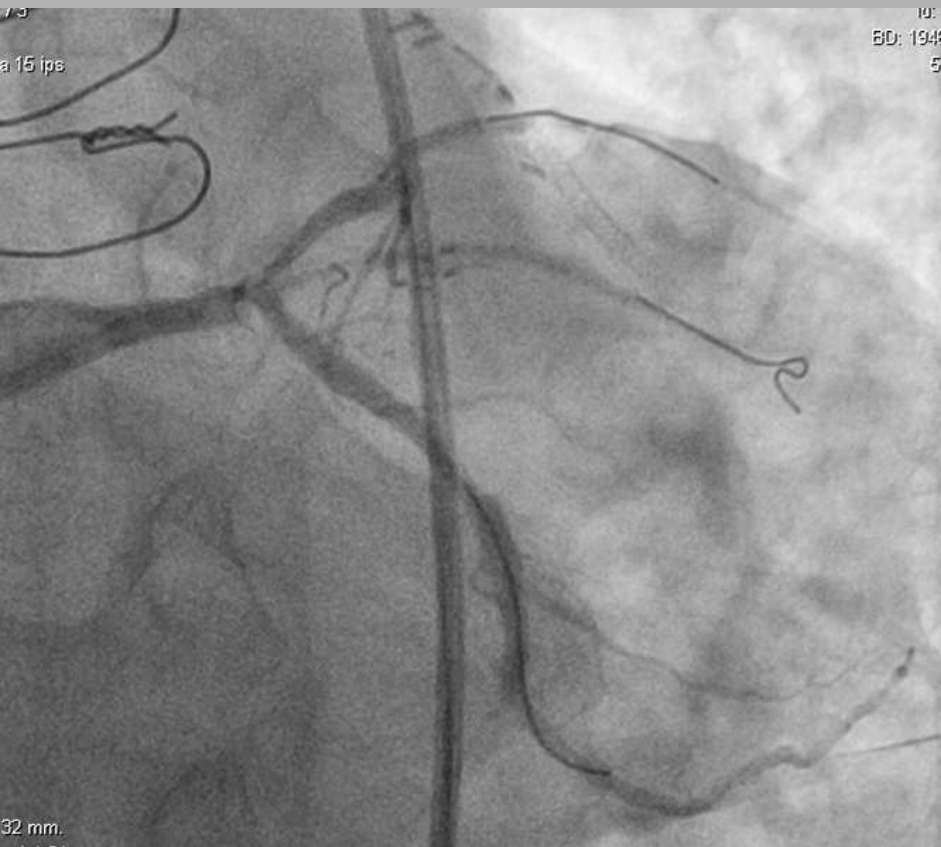


IVUS guidance in UPLM PCI



Patients at risk

IVUS-Guidance	145	140	98	37
Angiography guidance	145	137	88	29



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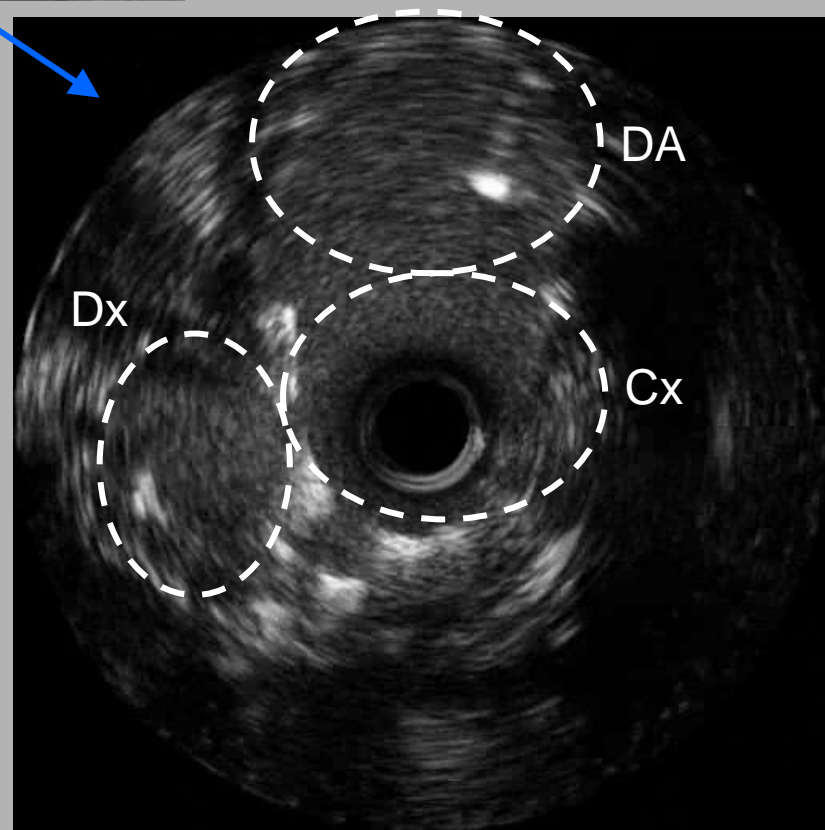
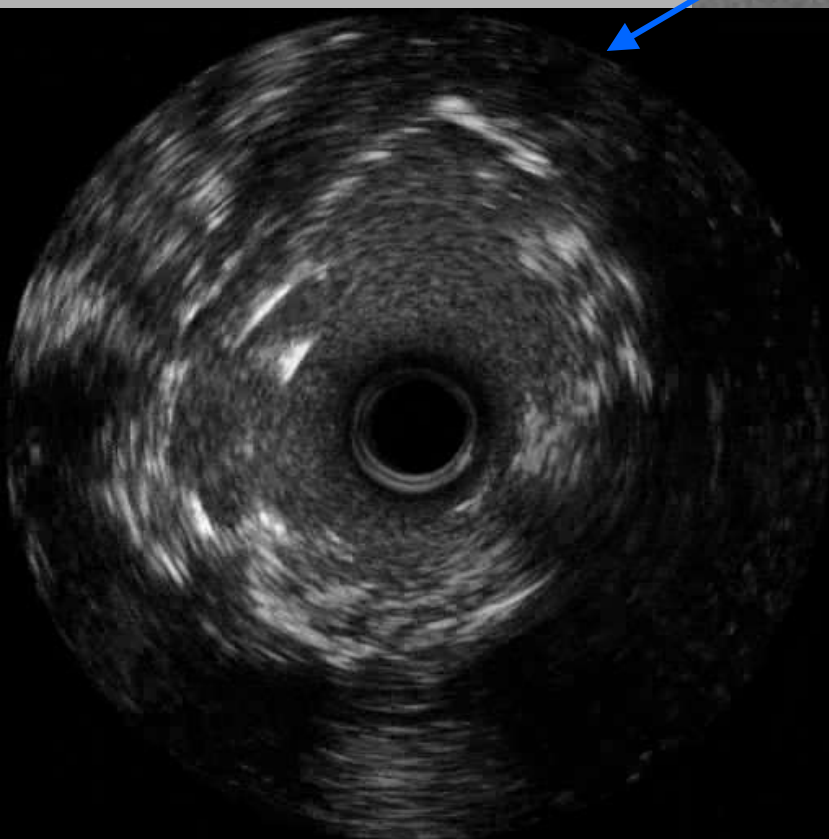
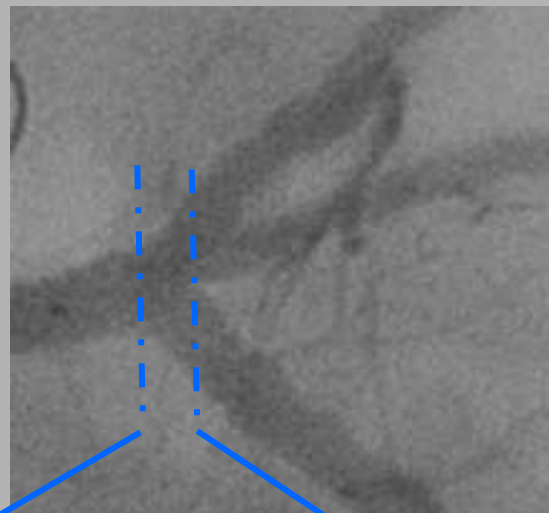
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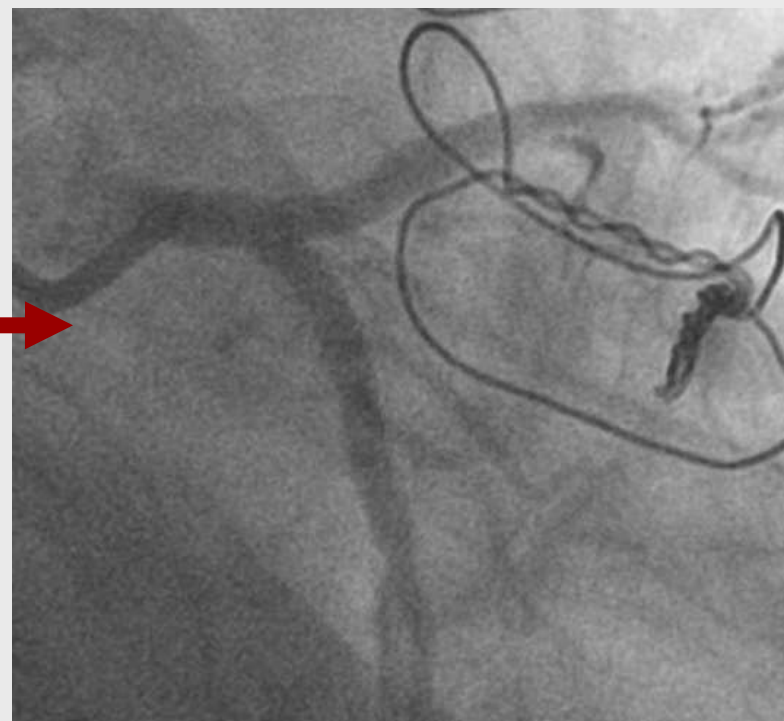
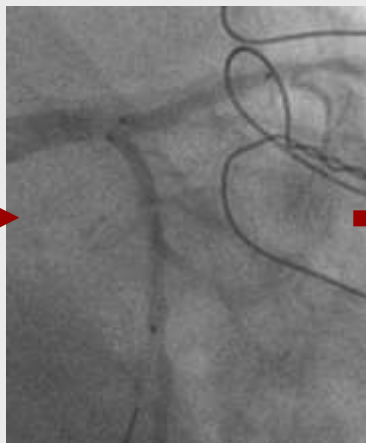
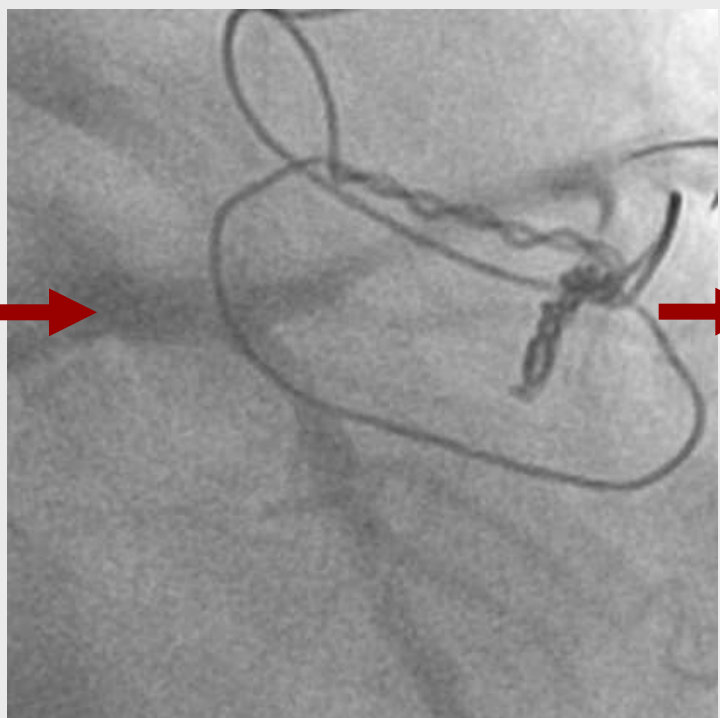
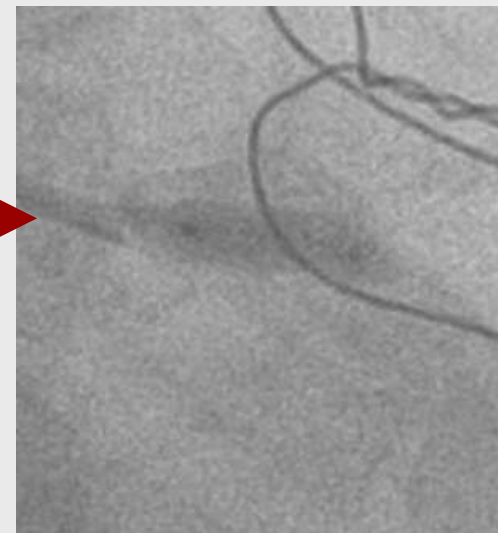
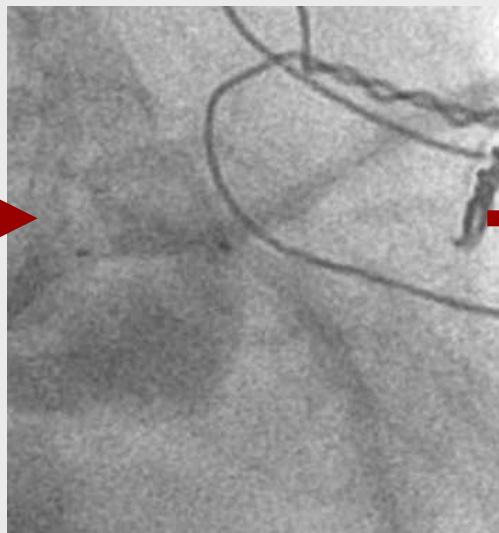
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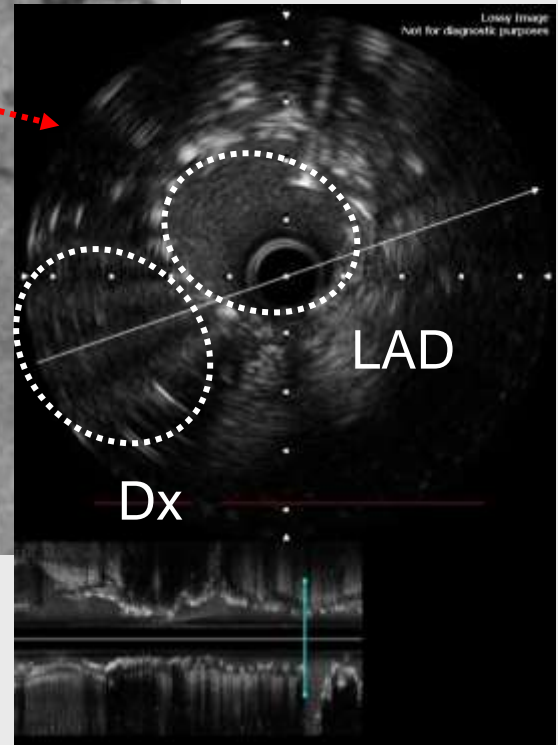
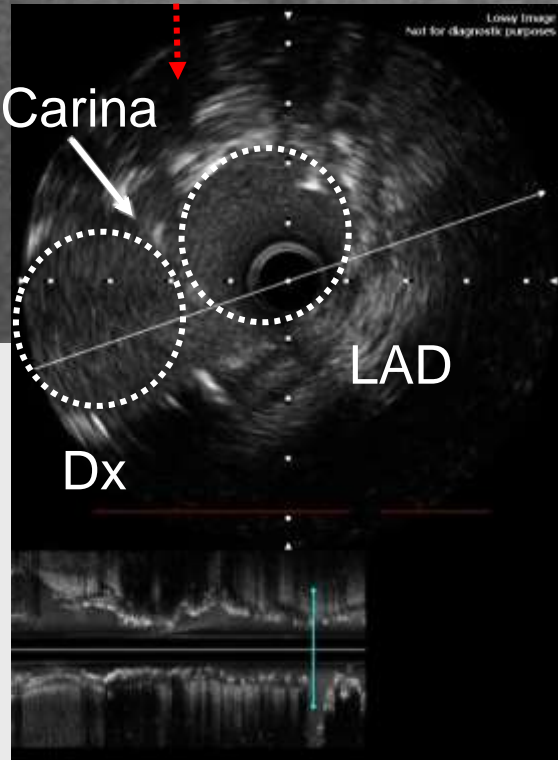
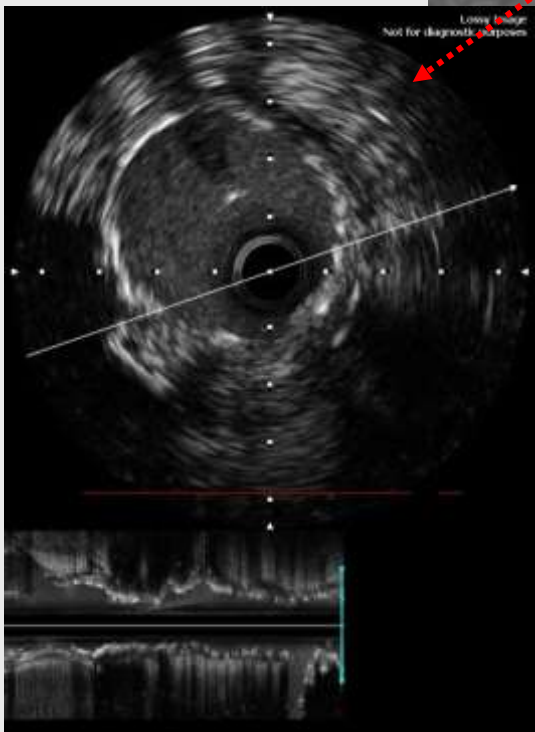
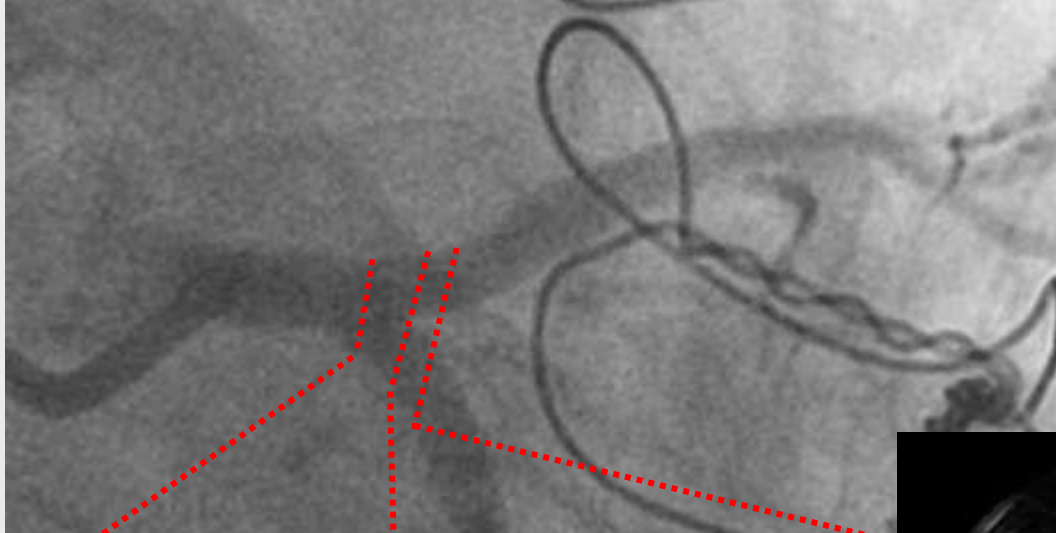
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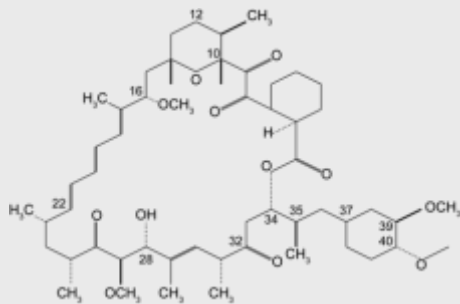
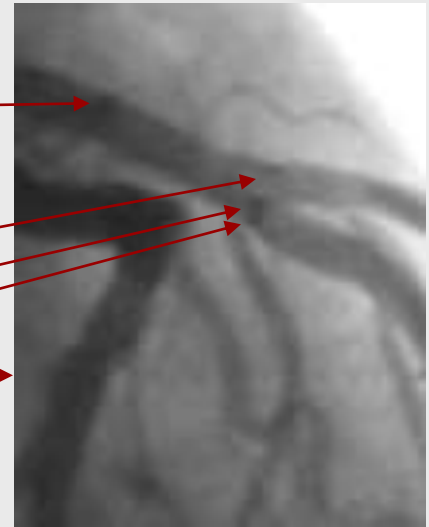
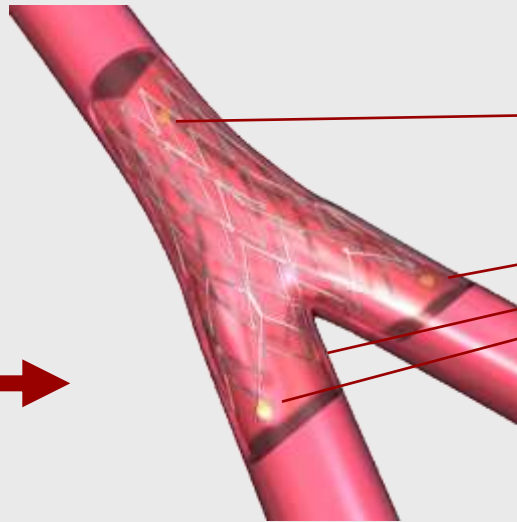
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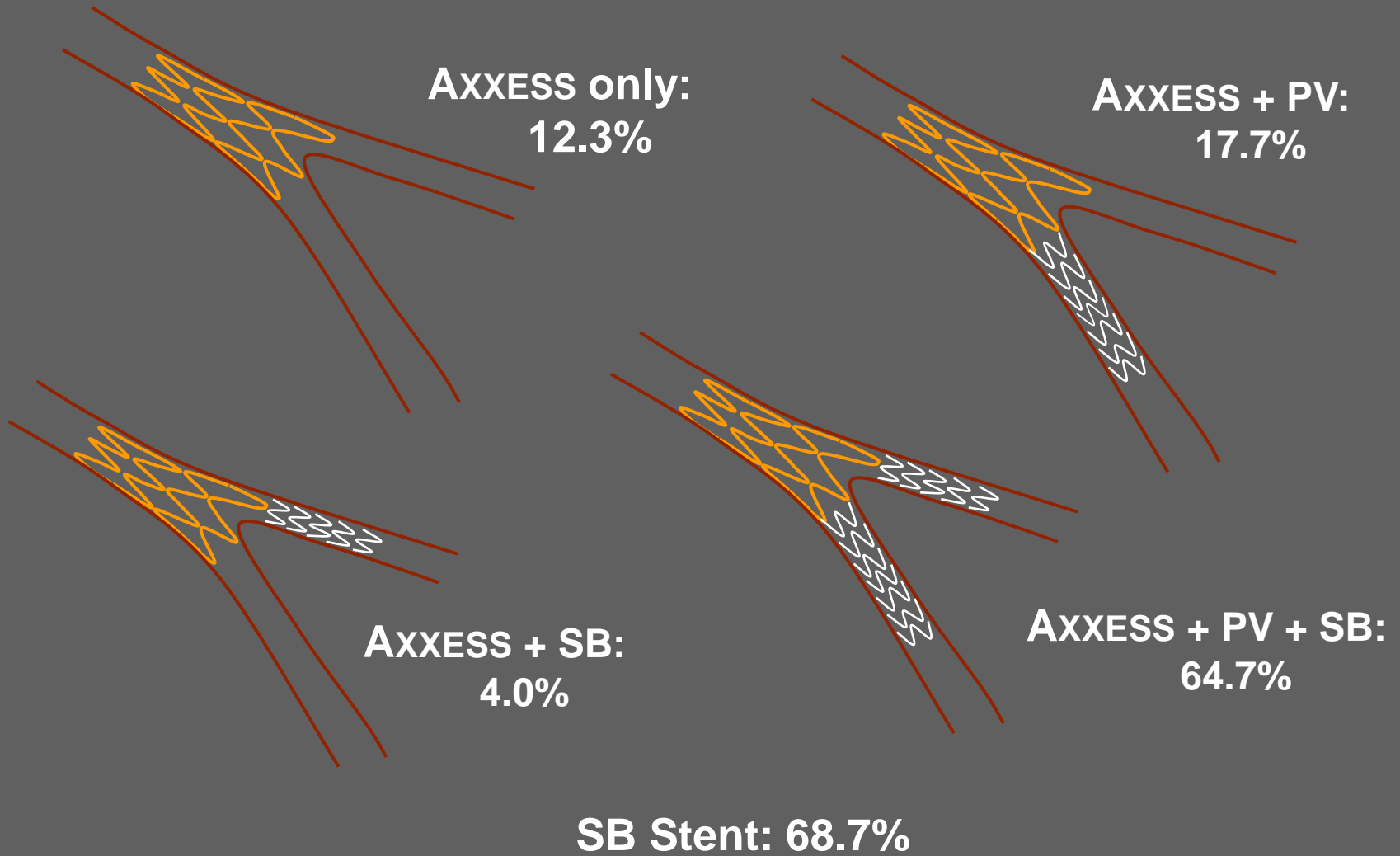
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- Biolimus is a semi-synthetic sirolimus analogue with **10x higher lipophilicity** and similar potency as sirolimus.
- Biolimus is immersed at a concentration of 15.6 $\mu\text{g}/\text{mm}$ into a biodegradable polymer, polylactic acid, and applied solely to **the abluminal stent surface** by a fully automated process.
- Biolimus is co-released with polylactic acid and completely desolves into carbon dioxide and water after a **6-9 months period.**

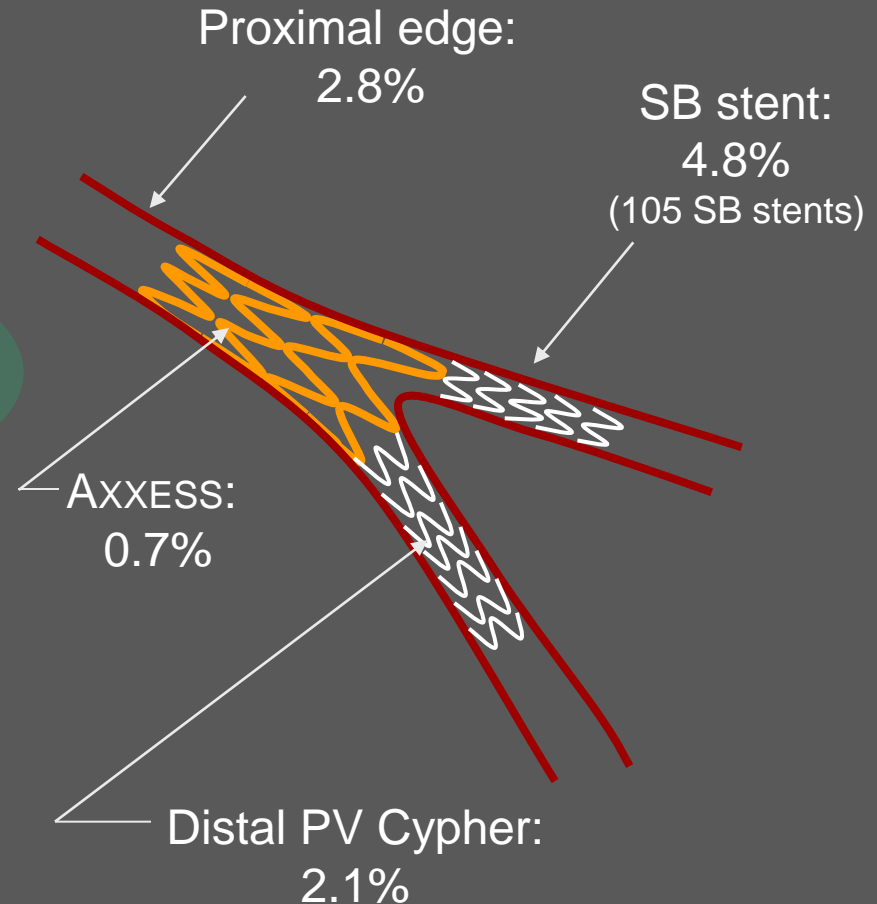
Stent Distribution Patterns



9 Month Restenosis

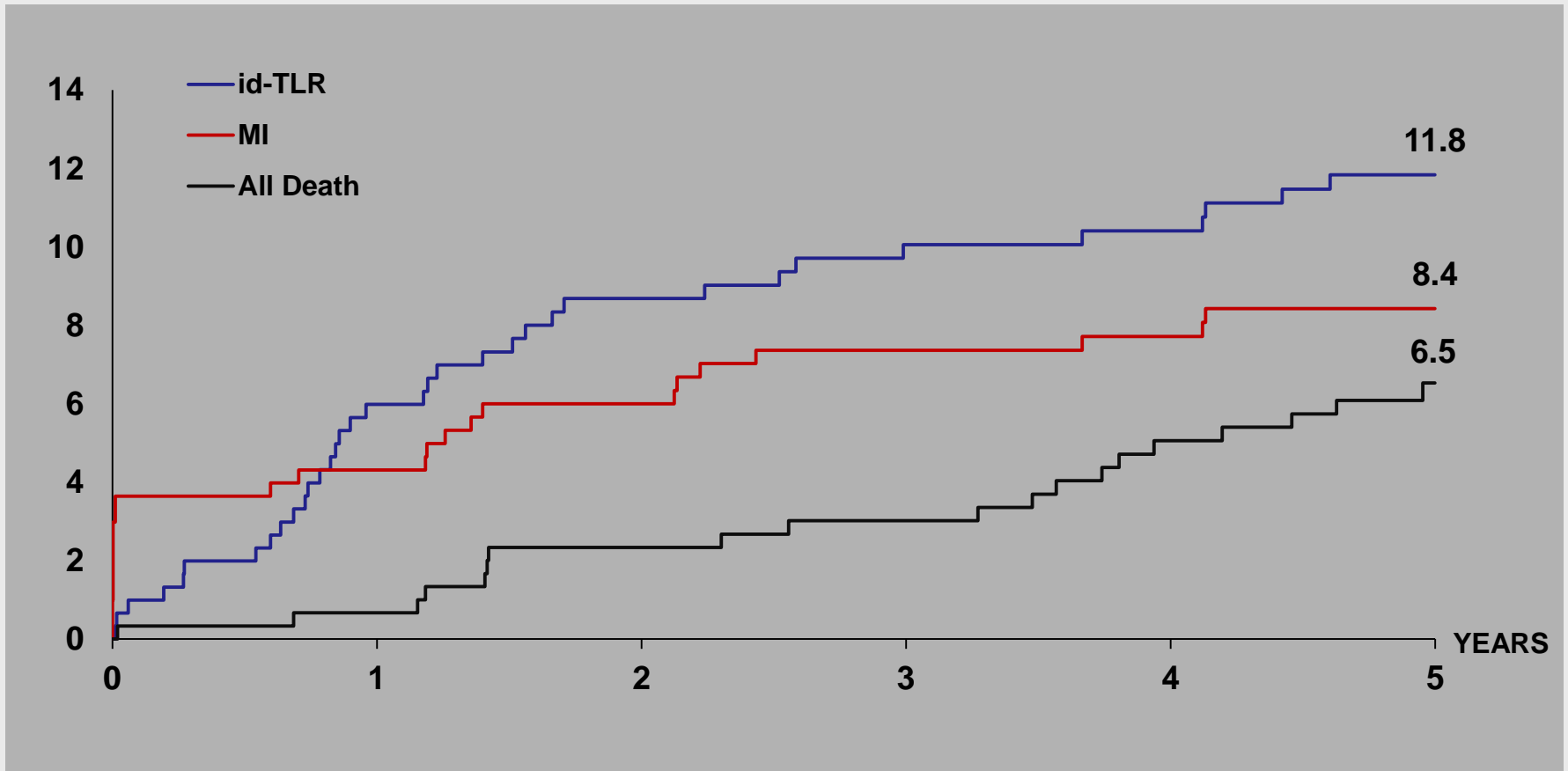
Any In-segment bifurcation restenosis:
6.4% (9/140 at 9 months)

Location Analysis:



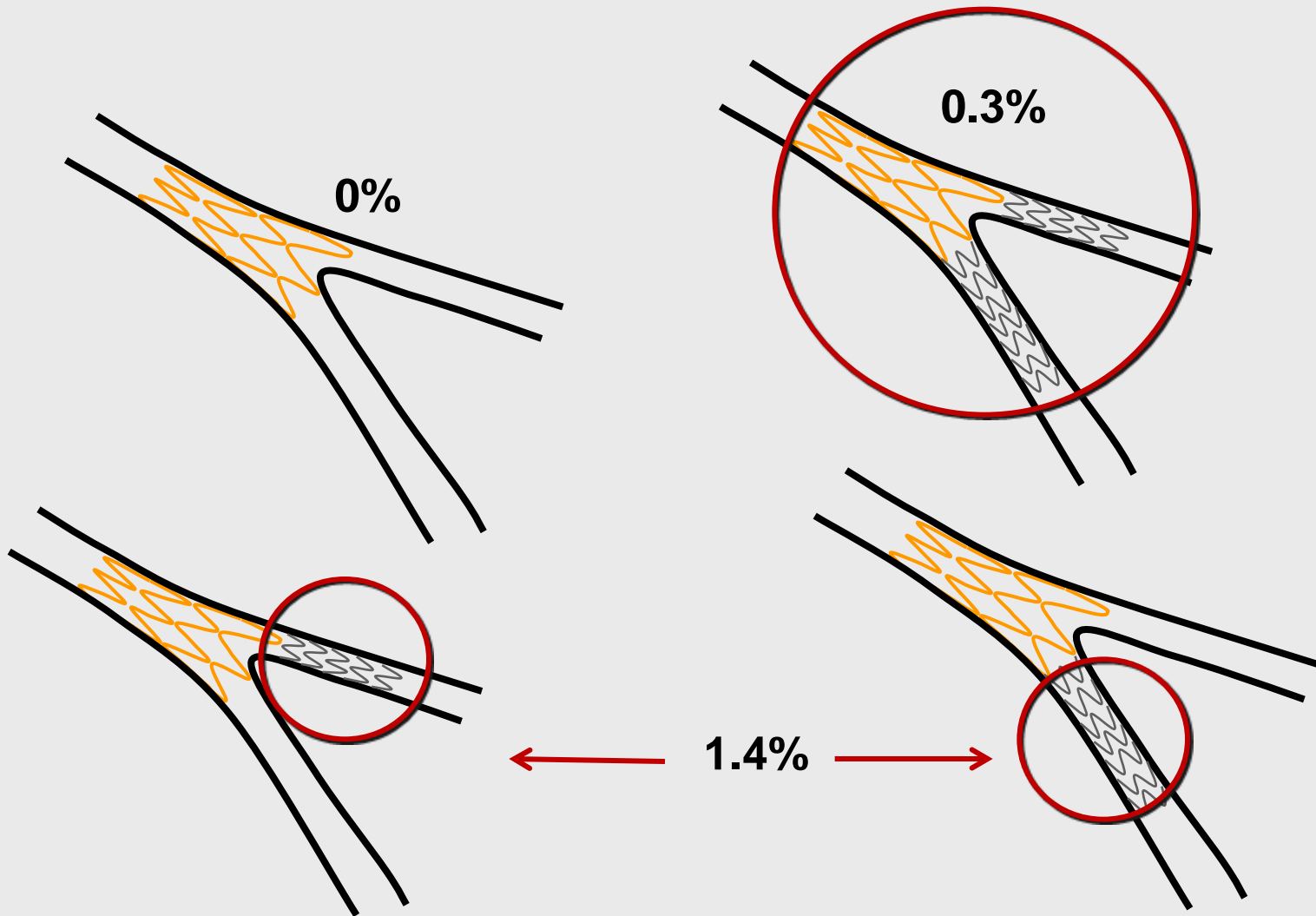
Resultados a 5 años

Componentes de MACE: Muerte, IM, id-TLR



LAST DEFINITIVA (1 a 5 años)

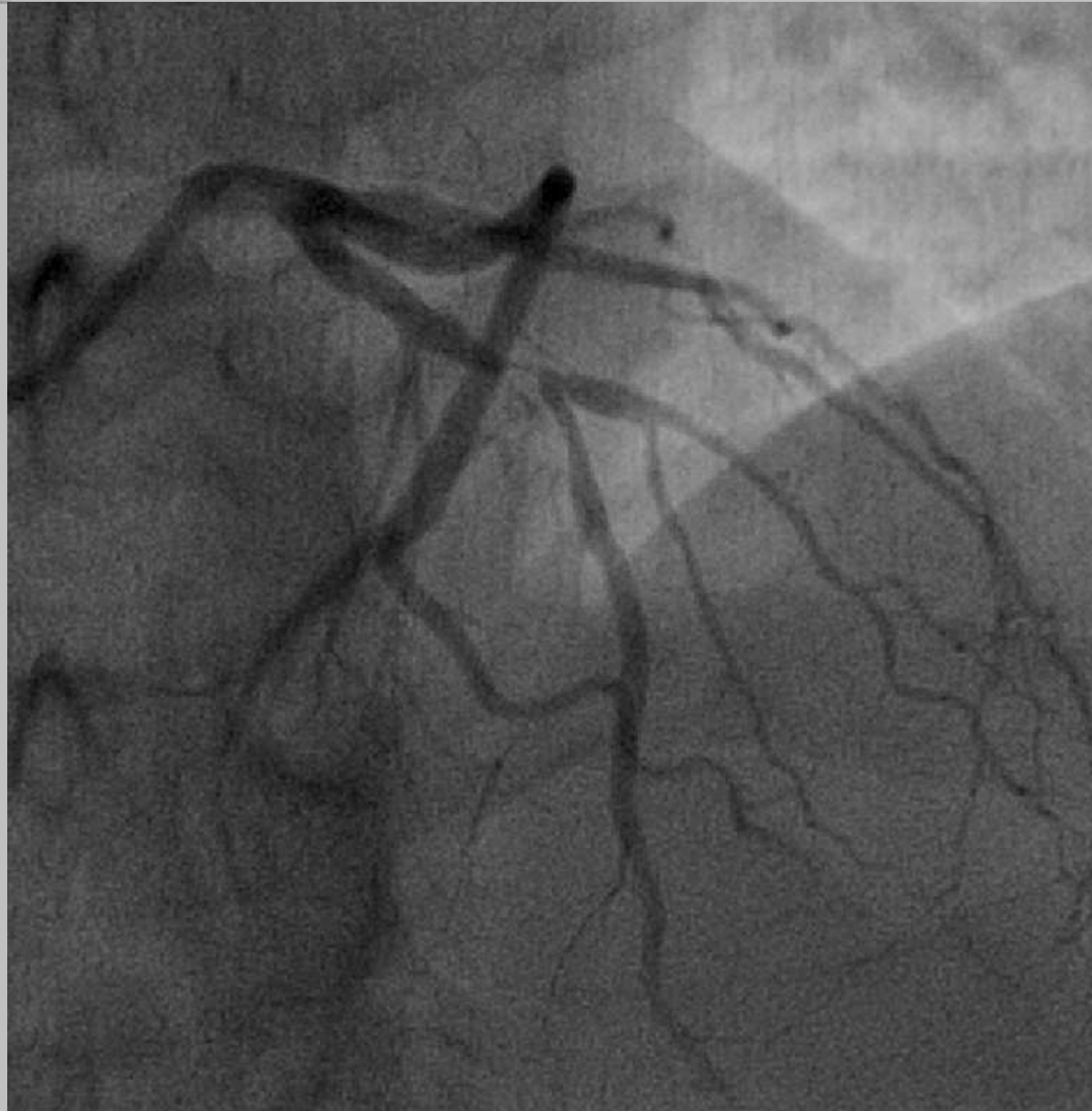
5 casos= 1.7%





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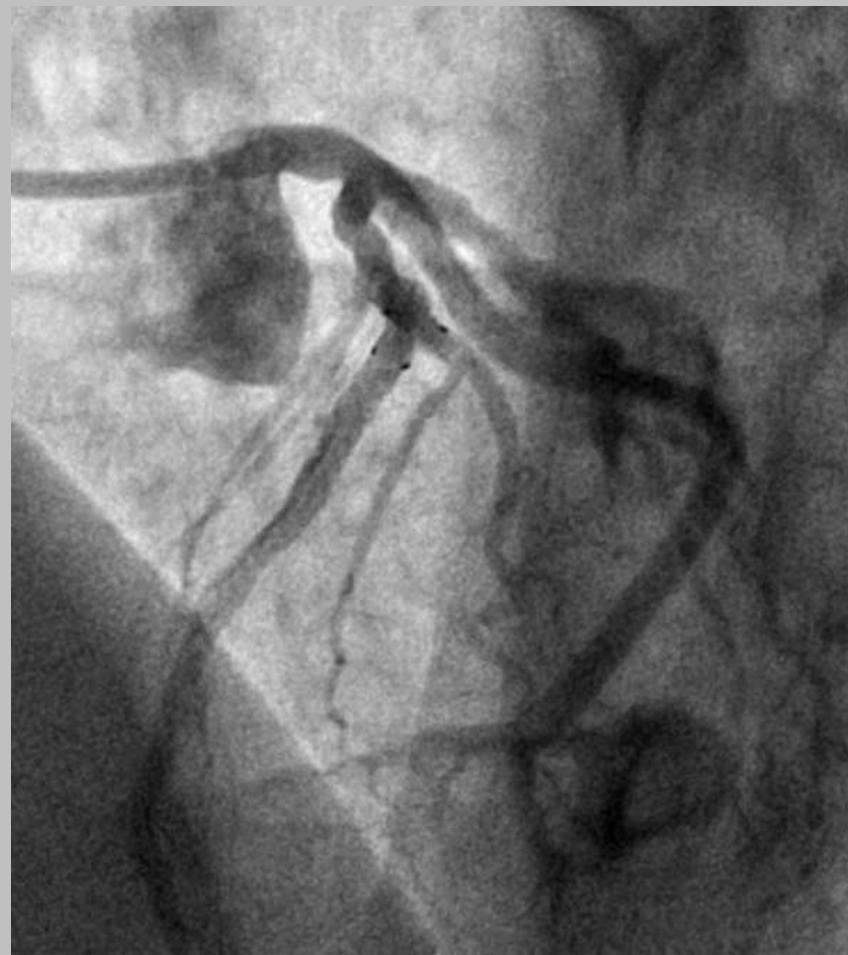
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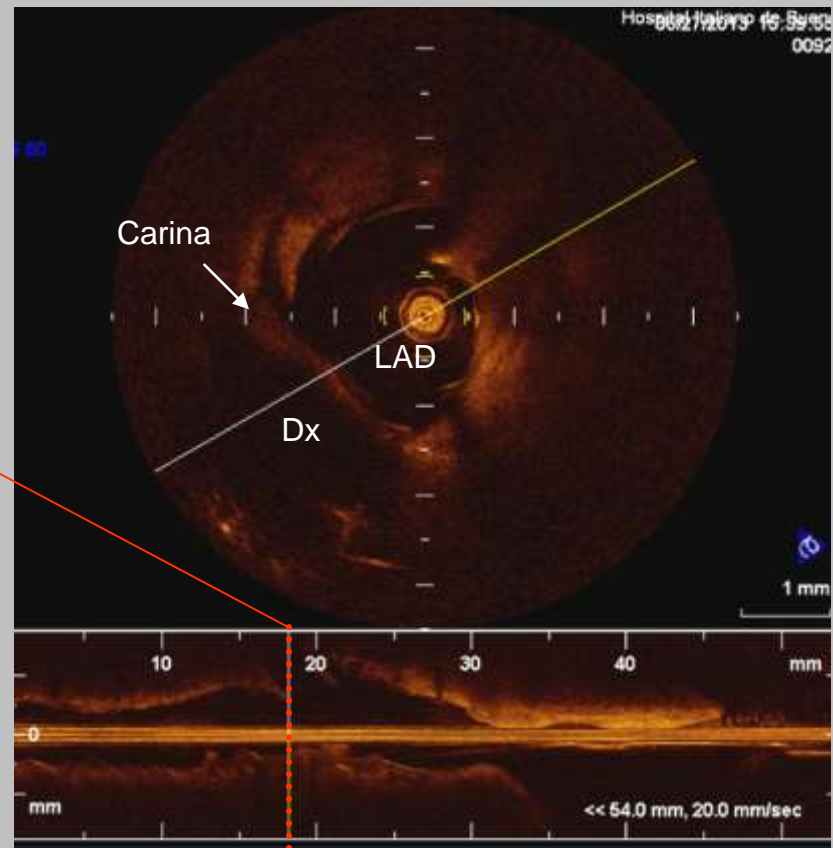
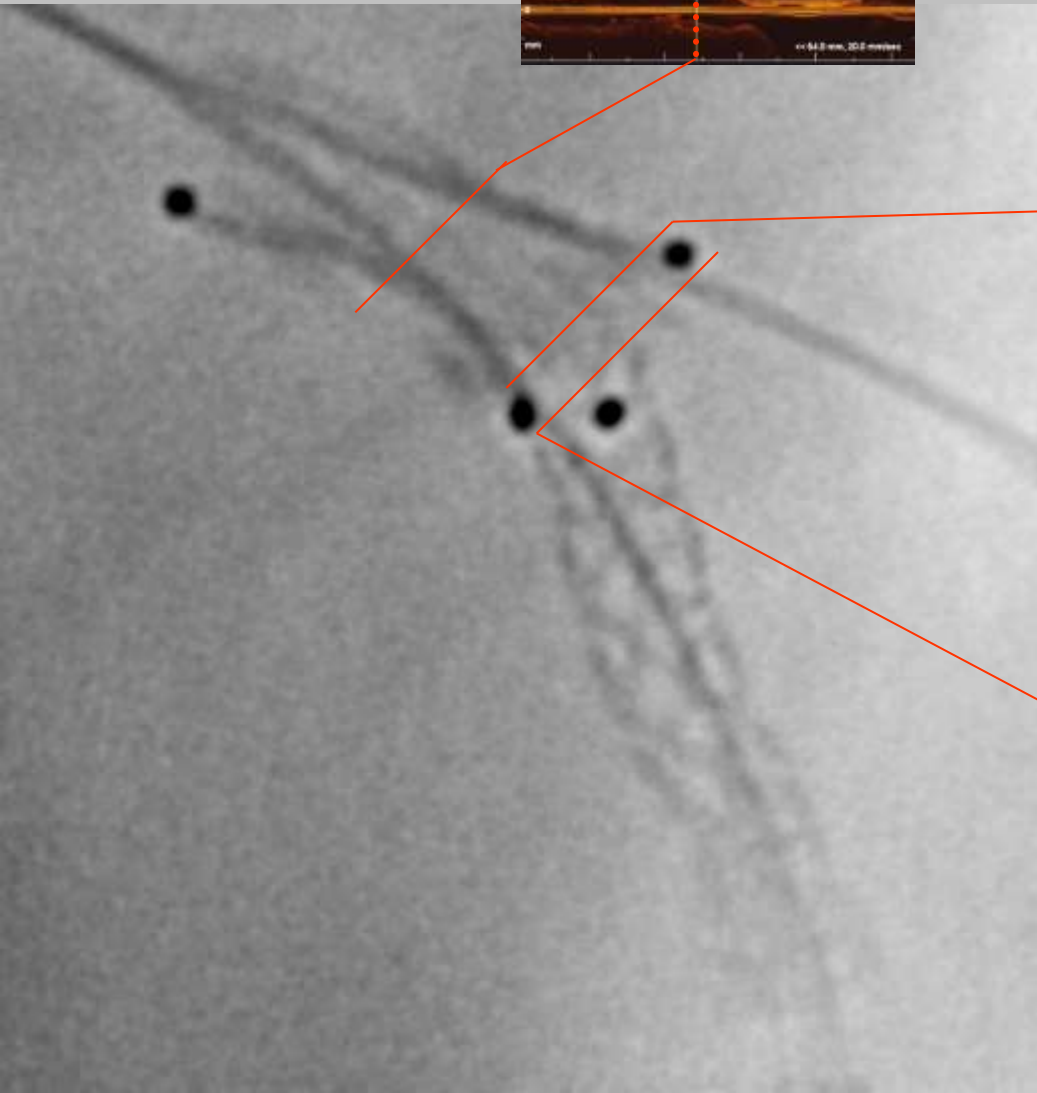
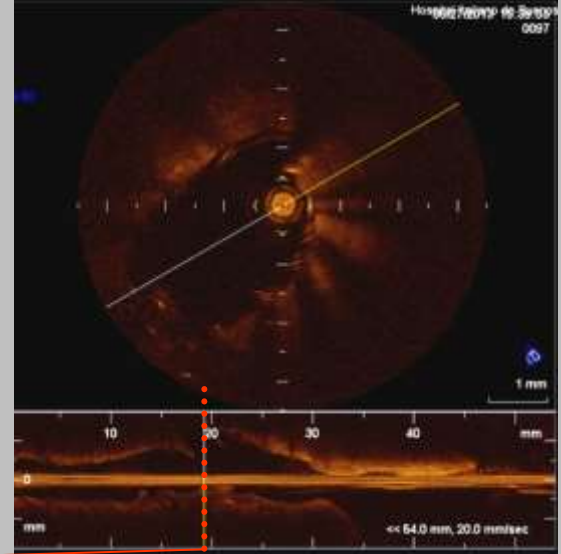
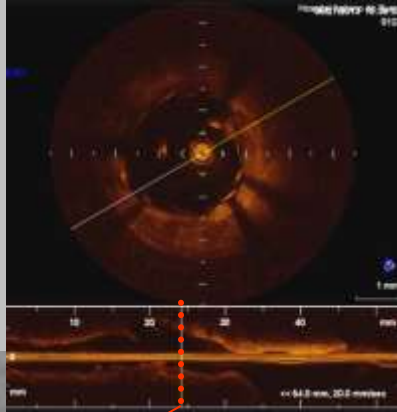
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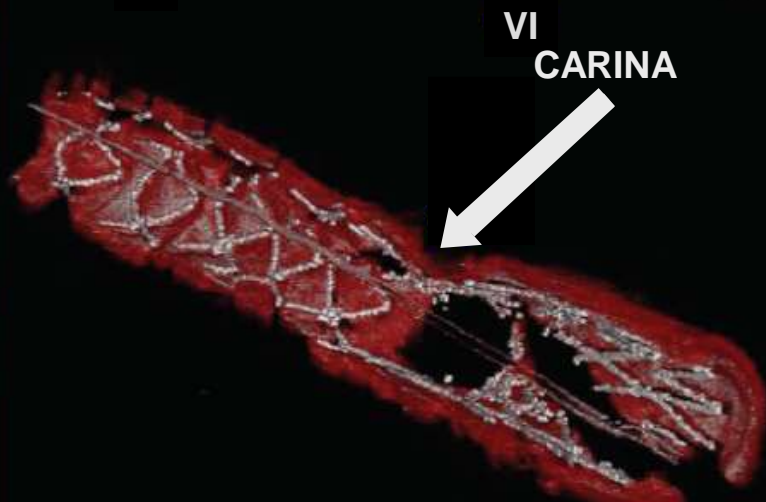
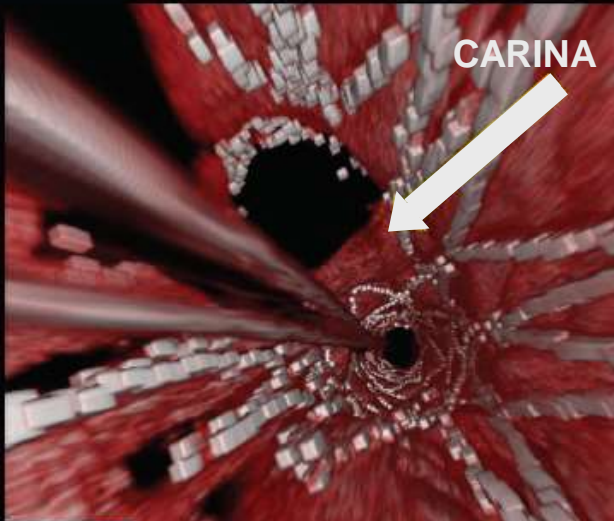
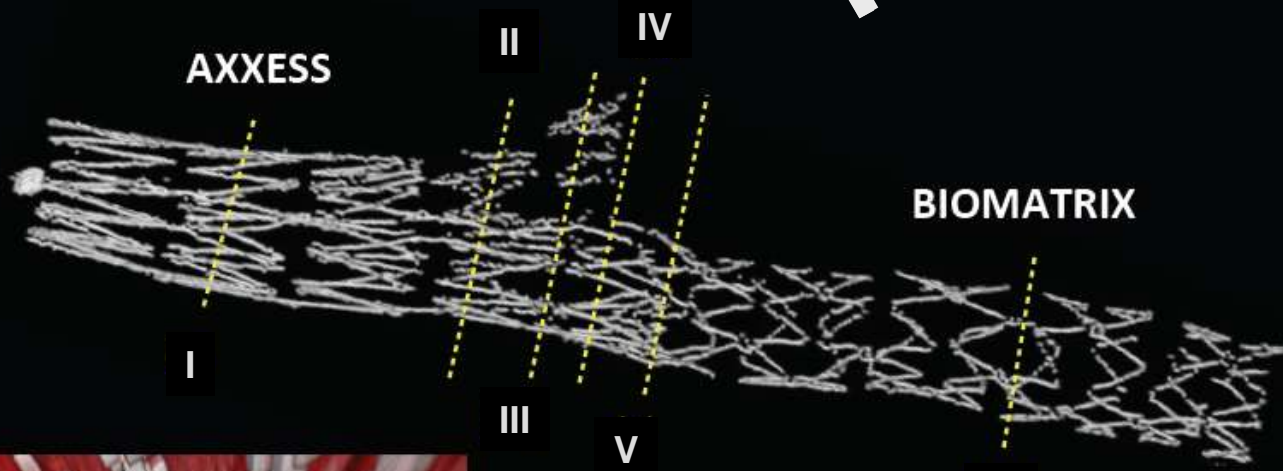
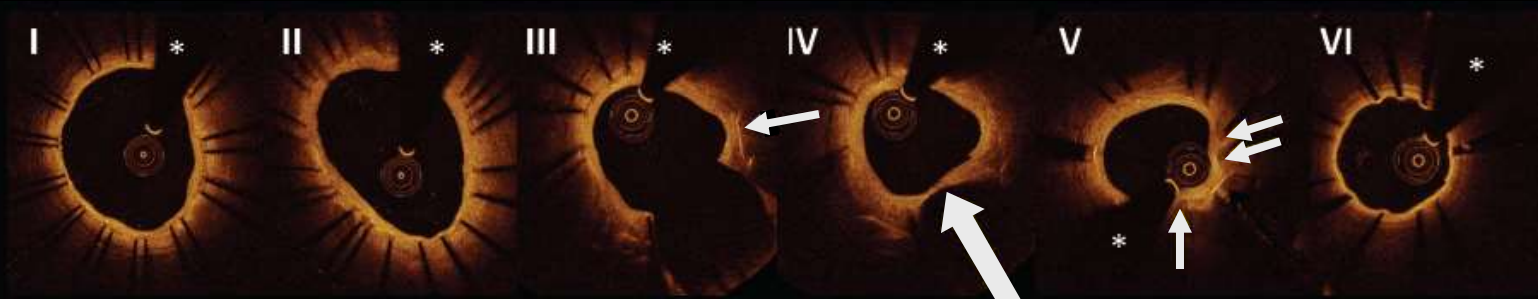


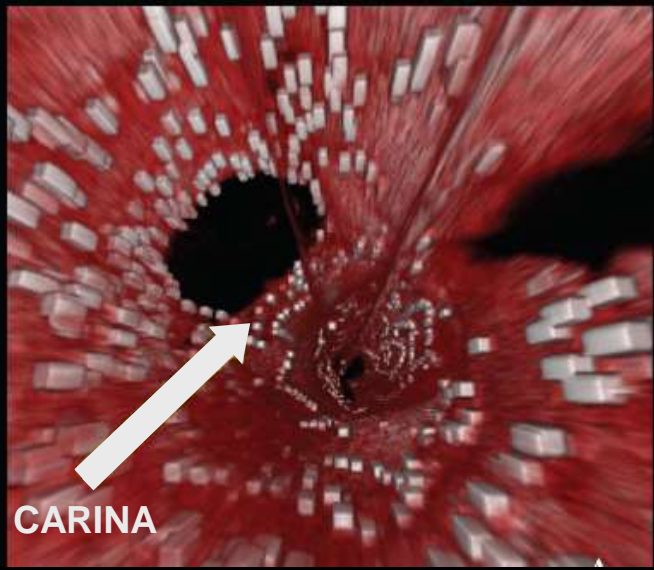
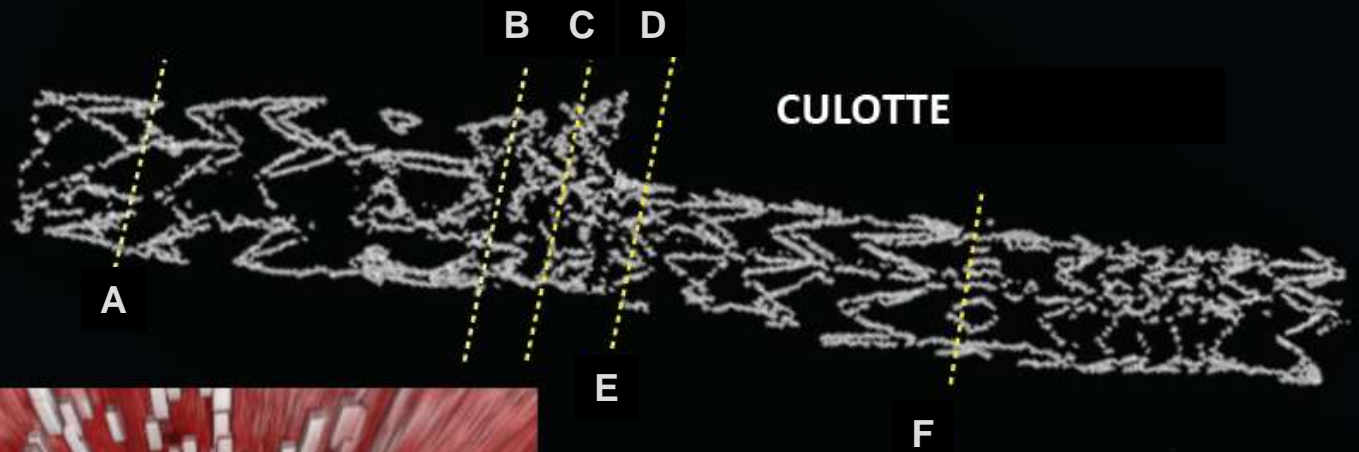
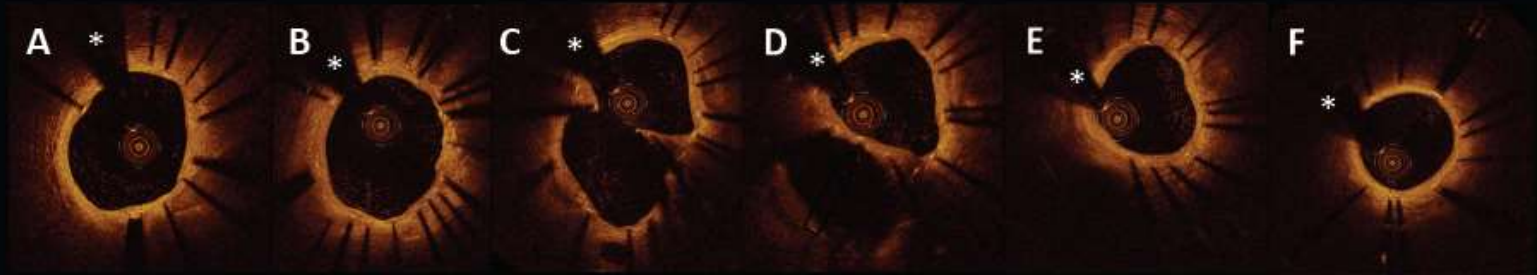


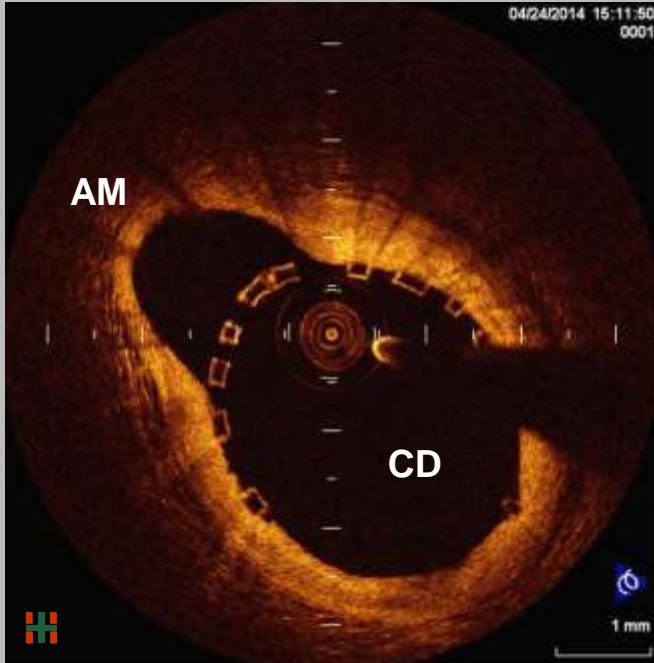
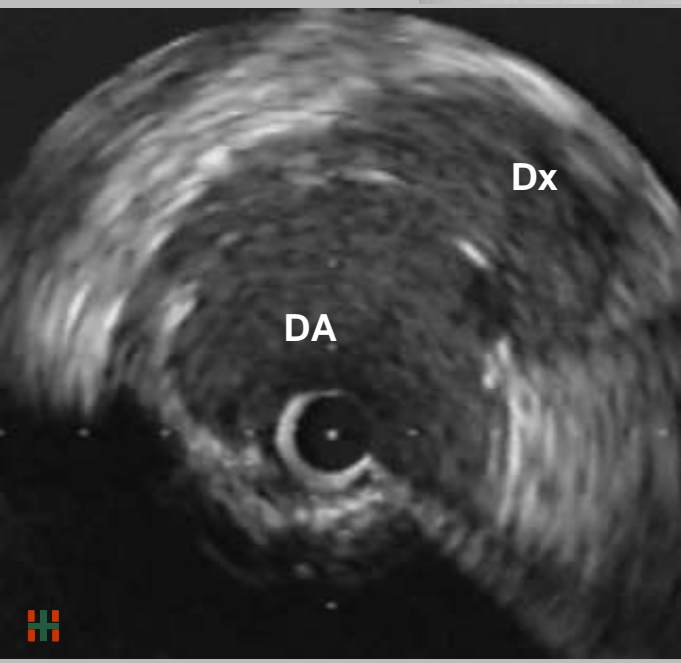
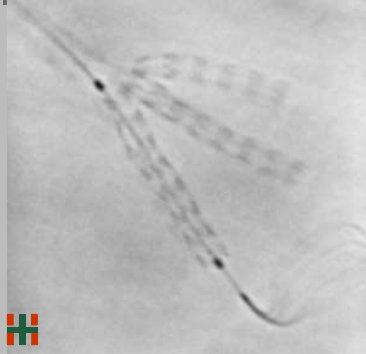
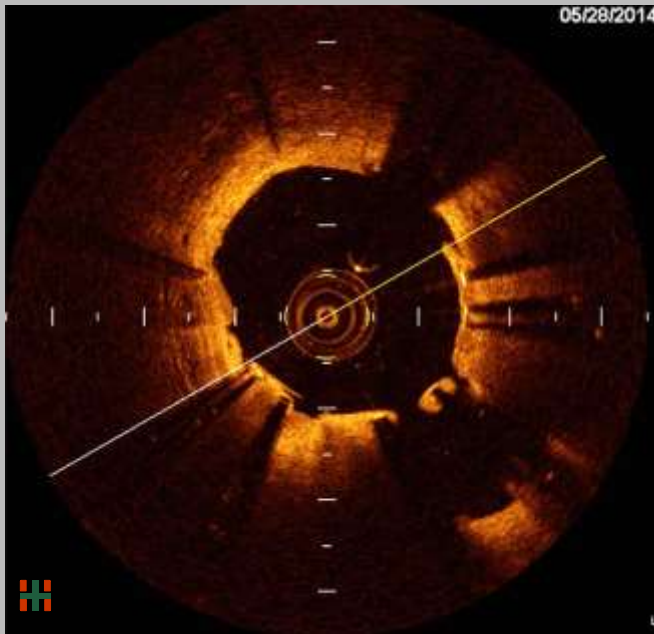
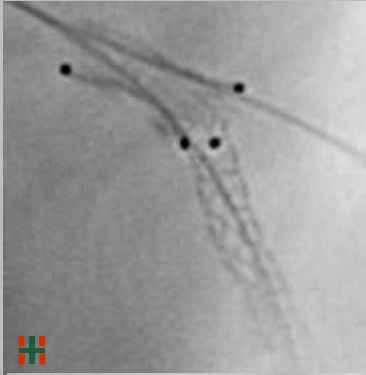
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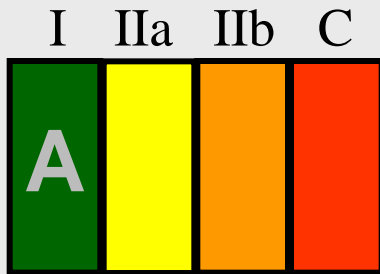




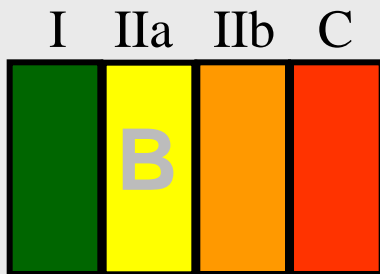


The Guidelines

Provisional versus Elective SB stenting



- ✓ Provisional side-branch stenting should be the initial approach in patients with bifurcation lesions **WHEN** the
- ✓ side branch is not large and has only
- ✓ mild or moderate foal disease at the ostium



- ✓ It is reasonable to use elective double stenting in patients with
- ✓ complex bifurcation morphology involving a
- ✓ large side branch where the
- ✓ risk of side-branch occlusion is high and the likelihood of successful side branch re access is low

Las bifurcaciones son escenarios anatómicos complejos

Ninguna técnica es ideal

La interacción de los materiales con el lumen y las paredes vasculares
no son totalmente conocidas aunque,
no parecen provocar problemas clínicamente relevantes

Los DES redujeron la reestenosis comparados con los BMS

Será crucial el desarrollo de stents dedicados que se adapten
a las distintas características anatómicas

Stent provisional

- ✓ Rama colateral de mediano o pequeño tamaño
- ✓ Ausencia de estenosis ostial.

Doble stent o stents dedicados

- ✓ Morfologías complejas
- ✓ Rama colateral grande
- ✓ Riesgo de oclusión de la rama
- ✓ Baja probabilidad de recuce

ALTO RIESGO CLÍNICO