

How to do: Enfermedad en el tronco común

COMO TRATARLO: MANEJO BIFURCACION

**PABLO PIÑON ESTEBAN
COMPLEJO HOSPITALARIO
UNIVERSITARIO A CORUÑA**

SIN CONFLICTO DE INTERES

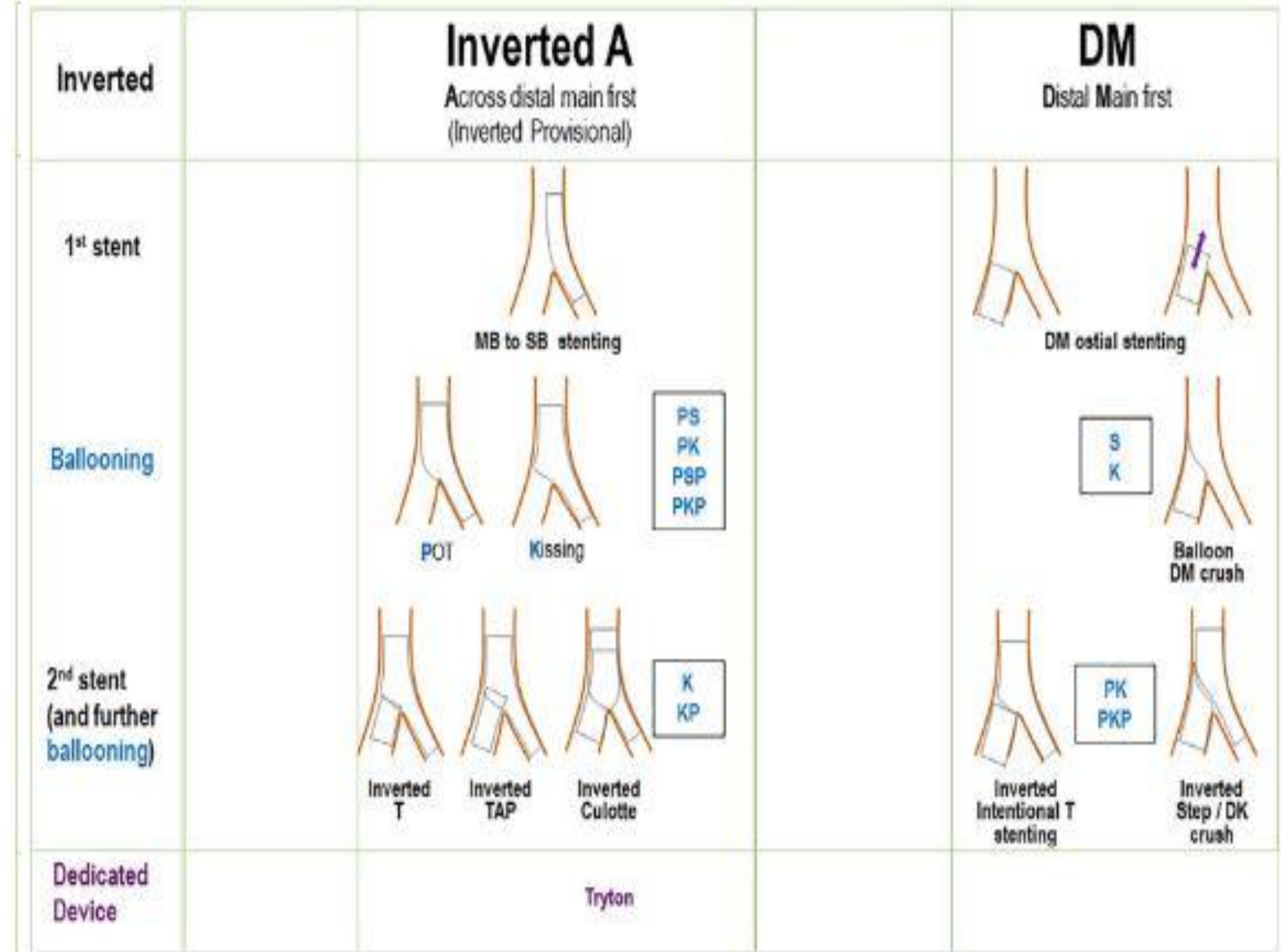
Técnicas Dilatación con balón

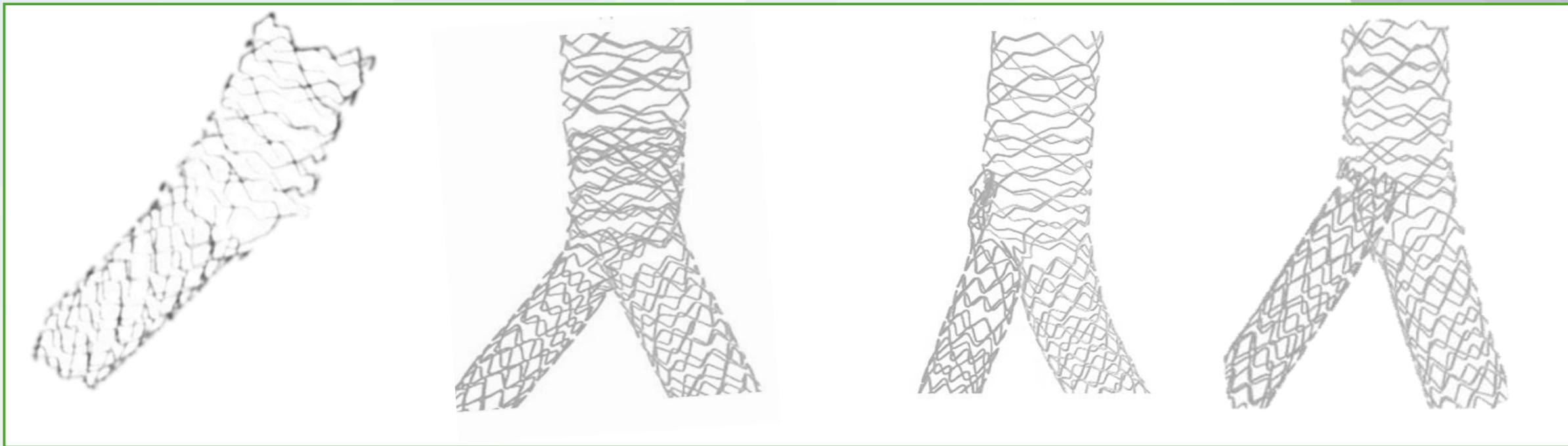
1 **P**: post-dilation of the proximal main vessel (usually reported as proximal optimization technique, POT);

2 **S**: balloon dilation of the SB ostium;

3 **K**: balloon inflation in the MV and SB (usually reported as kissingballoon inflation technique).

D: Distal balloon optimization: DOT



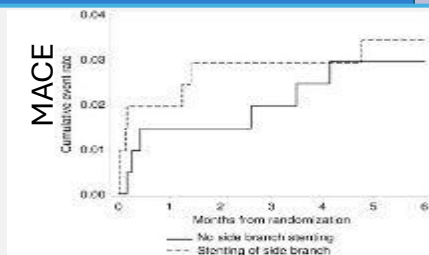


STENTS EN BIFURCACION DE TRONCO COMUN
¿DOS MEJOR QUE 1?

1 STENT “PROVISIONAL STENTING”

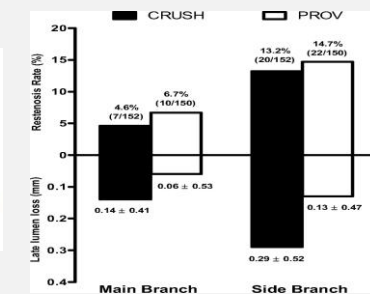
ESTUDIO	N	PS	2 STENT	Bifurcación verdadera	Objetivo primario	PS vs 2 stents
NORDIC ¹	413	4.3% Stent en Rama; 32% Kissing	50% Crush, 21% Culotte, 29% otras	59.6%	Muerte CV, IAM, TVR, ST a 6 meses	2.9% vs 3.4%, p NS
CACTUS ²	350	90% Kissing, 31% Stent	Crush	94%	Muerte CV, IAM TVR 6 meses	15.0% vs 15.8% p NS
BBCS ³	500	3% T stent; 26% Kissing	169 crush; 75 Culotte	82%	Muerte, IAM, TVF a 9 meses	8.0% vs 15.2%; p<0.0009
EBC TWO TRIAL ⁴	200	95% Kissing 16% Stent	Culotte (98% Kissing)	100%	Muerte CV, IAM TVR 12 meses	7.7% vs 10.3% p NS

Randomized Study on Simple Versus Complex Stenting of Coronary Artery Bifurcation Lesions The Nordic Bifurcation Study



Randomized Study of the Crush Technique Versus Provisional Side-Branch Stenting in True Coronary Bifurcations

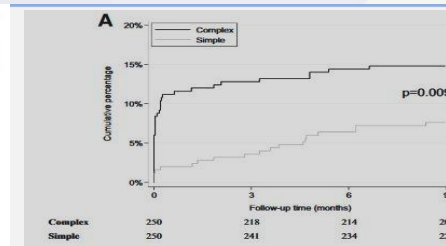
The CACTUS (Coronary Bifurcations: Application of the Crushing Technique Using Sirolimus-Eluting Stents) Study



Interventional Cardiology

Randomized Trial of Simple Versus Complex Drug-Eluting Stenting for Bifurcation Lesions

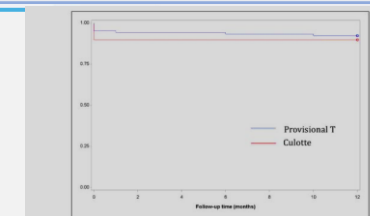
The British Bifurcation Coronary Study: Old, New, and Evolving Strategies



Coronary Artery Disease

The EBC TWO Study (European Bifurcation Coronary TWO)

A Randomized Comparison of Provisional T-Stenting Versus a Systematic 2 Stent Culotte Strategy in Large Caliber True Bifurcations



MENOR COSTES



Menor radiación



Menor Tiempo de procedimiento

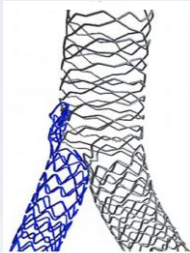
1.- Steigen TK, et al. Circulation 2006;114:1955–1961.

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

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

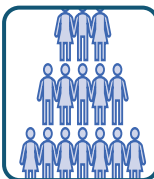
4.- Hildick-Smith D, et al. Circ Cardiovasc Interv 2016;9:e003643.

“DK CRUSH TECHNIQUE”



A Randomized Clinical Study Comparing Double Kissing Crush With Provisional Stenting for Treatment of Coronary Bifurcation Lesions

Results From the DKCRUSH-II (Double Kissing Crush versus Provisional Stenting Technique for Treatment of Coronary Bifurcation Lesions) Trial



370 pacientes
7 CENTROS ASIATICOS
2007-2009



1,1,1
0,1,1



1º MACE A 12 MESES: Muerte cardiaca, IAM, TVR
2º REESTENOSIS ANGIOGRAFICA 8 MESES

EVENTO	PS	DK CRUSH	
	n=185	n=185	P
OBJETIVO 1º	17.3%	10.3%	0.070
REESTENOSIS VASO PRINCIPAL	4.9%	3.8%	0.036
REESTENOSIS RAMA	22.2%	9.7%	<0.001
TVR	14.6%	6.5%	0.017
TROMBOSIS STENT	0.5%	2.2%	0.372
Kissing Final	79.5%	100%	<0.001
OCLUSIÓN RAMA INTRAPROCEDIMIENTO	3		
STENT ADICIONAL	28.6%		

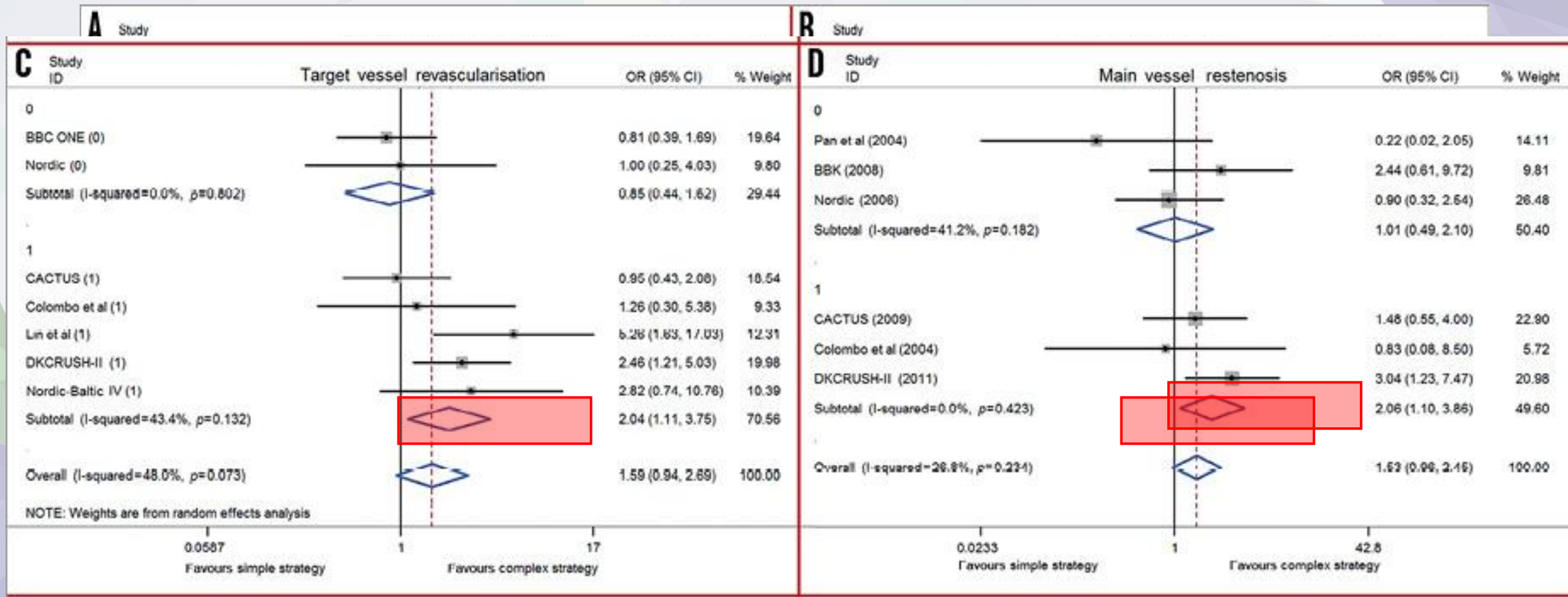
Stenting strategy for coronary artery bifurcation with drug-eluting stents: a meta-analysis of nine randomised trials and systematic review

Study	Crossed over, n (to simple/to complex)	Type of DES	Complex technique, n	True bifurcation, n (%)	FKBI, n (simple/complex)	GP IIb/IIIa, n (simple/complex)	Dual antiplatelet, months	Primary endpoint	Clinical follow-up, months
Pan et al (2004)	4/1	SES	T-stenting (45)	78 (86%)	28/34	29/25	12	Cardiac death, MI, TVR	11
BBC ONE (2010)	4/7	PES	Culotte (75), crush (169), T (7), other (4)	411 (82%)	72/189	70/110	9	Death, MI, TVF	9
CACTUS (2009)	NA/54	SES	Crush-stenting (231)	328 (94%)	156/163	30/40	6	Cardiac death, MI, TVR	6
Colombo et al (2004)	2/22	SES	T-stenting (60), V-stenting (1), Y-stenting (2)	85 (100%)	18/57	8/27	3	MV and SB restenosis	6.4
Lin et al (2010)	3/9	SES, PES	DK-crush (65%), culotte (25%), or T-stenting (10%)	108 (100%)	51/49	7/5	12	MI, cardiac death, ST, TVR	8
DKCRUSH-II (2011)	0/53	SES	DK-crush	370 (100%)	147/185	2/8	12	Cardiac death, MI, TVR	12
BBK (2008)	3/19	SES	T-stenting (120)	138 (68%)	101/101	0/0	6	DS of SB	12
Nordic (2006)	10/9	SES	Crush (103), culotte (43), or other (69)	246 (59.6%)	65/152	106/105	6-12	Cardiac death, MI, ST, TVR	6
Nordic-Baltic IV (2013)	9/8	SES, EES	Culotte (65.6%), T (7%), or other (26.4%)	450 (100%)	80/209	NA	NA	Cardiac death, MI, TLR, ST	6

DS: diameter stenosis; MI: myocardial infarction; MV: main vessel; SB: side branch; ST: stent thrombosis; TLR: target lesion revascularisation; TVF: target vessel failure; TVR: target vessel revascularisation

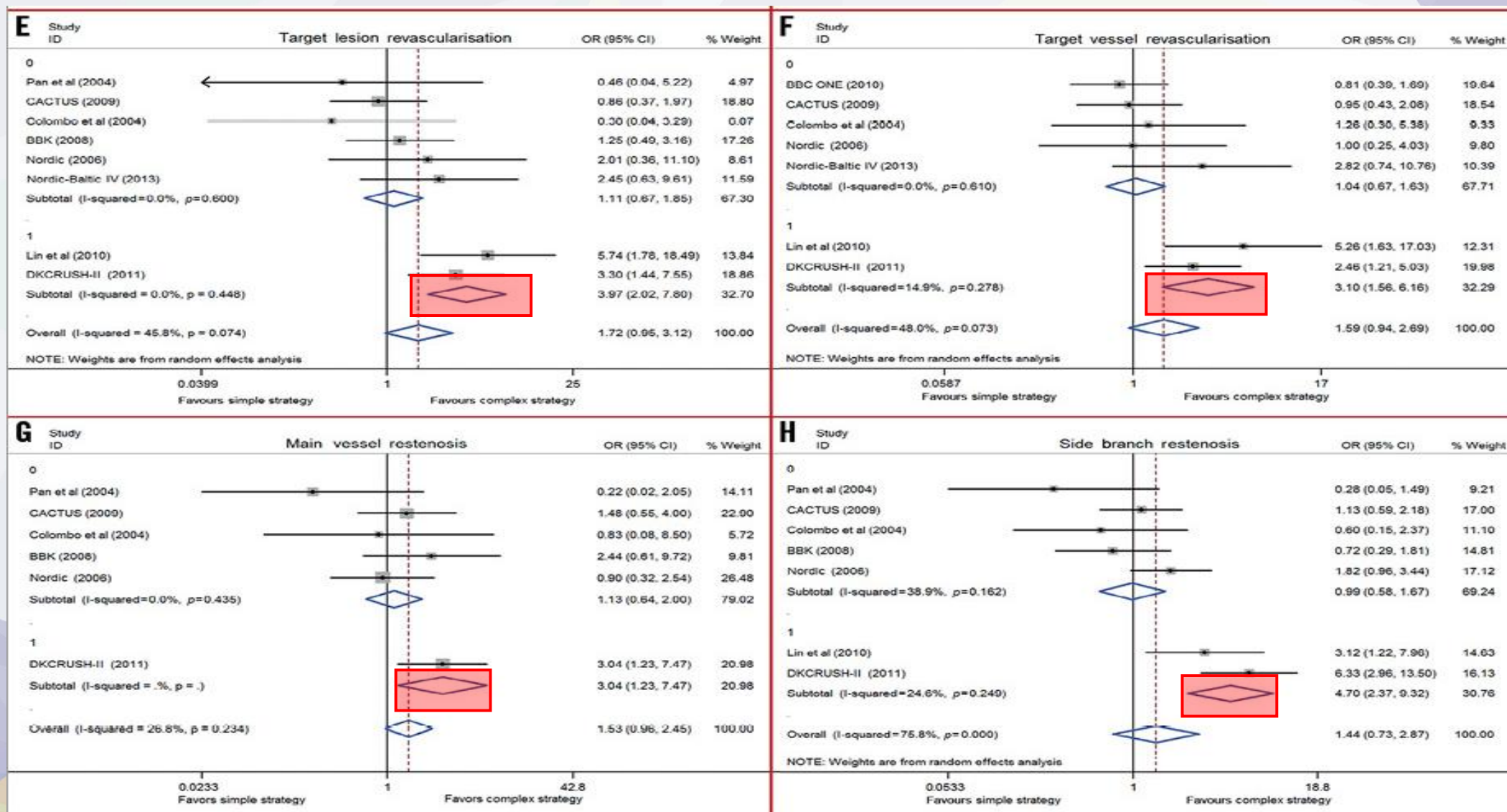
Stenting strategy for coronary artery bifurcation with drug-eluting stents: a meta-analysis of nine randomised trials and systematic review

SUBGRUPO BIFURCACION VERDADERA

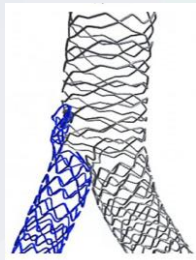


Stenting strategy for coronary artery bifurcation with drug-eluting stents: a meta-analysis of nine randomised trials and systematic review

SUBGRUPO DK CRUSH

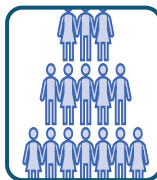


“DK CRUSH TECHNIQUE”

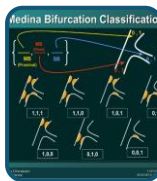


Double Kissing Crush Versus Provisional Stenting for Left Main Distal Bifurcation Lesions

DKCRUSH-V Randomized Trial



482 pacientes
26 CENTROS



LESIONES EN TRONCO COMUN
1,1,1
0,1,1

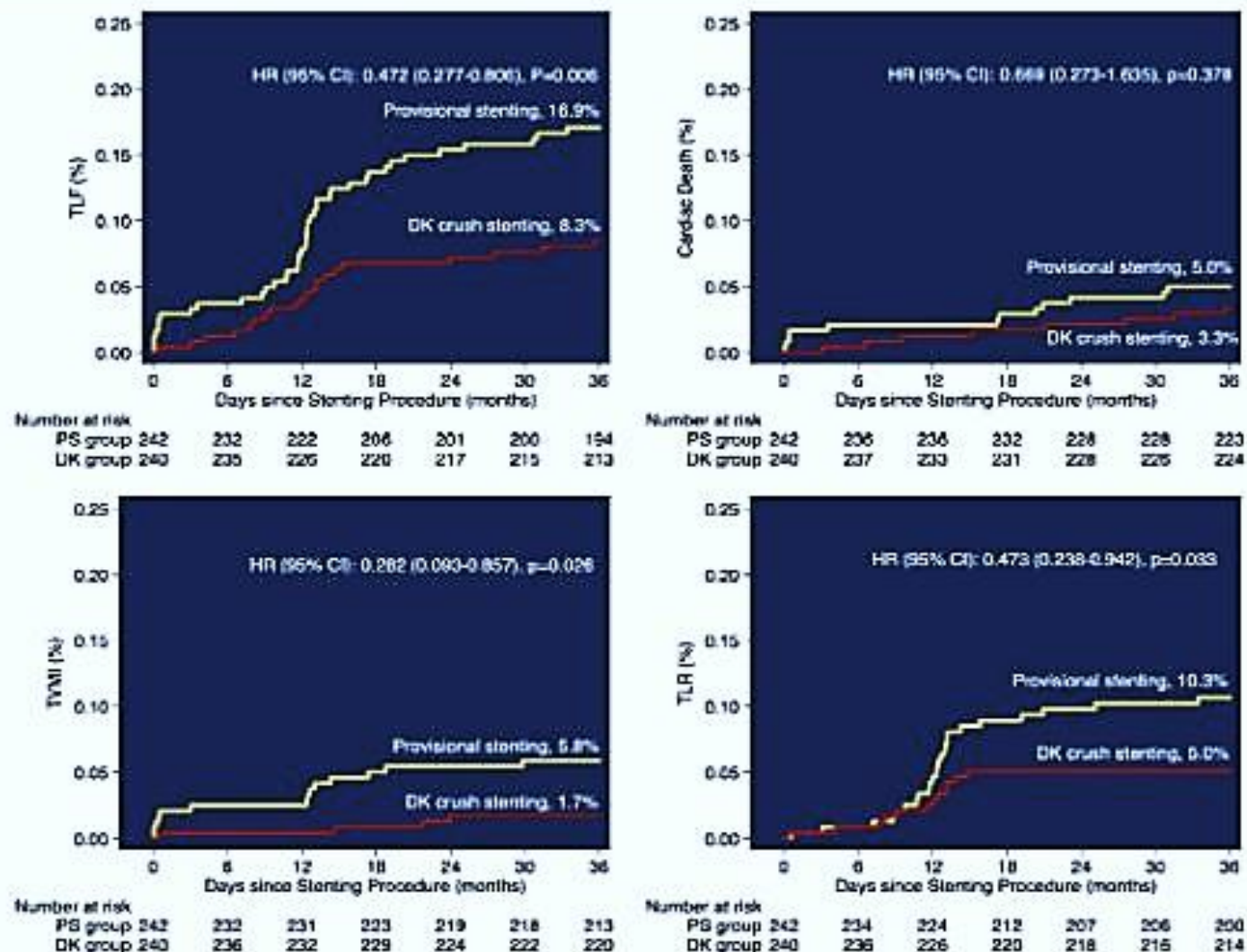


1º MACE A 12 MESES: Muerte cardiaca, IAM RELACIONADO CON VASO TRATADO, TLR GUIADO CLINICAMENTE

EVENTO	PS	DK CRUSH	
	n=242	n=240	P
OBJETIVO 1º	26 (10.7%)	12 (5%)	0.02
TV IAM	2.9%	0.4%	0.03
TROMBOSIS STENT DEFINITIVA O PROBABLE	3.3%	0.4%	0.02
Kissing Final	78.9%	99.6%	<0.001
REESTENOSIS ANGIOGRAFICA	14.6%	7.1%	0.10
TLR GUIADO CLINICAMENTE	7.9%	3.8%	0.06

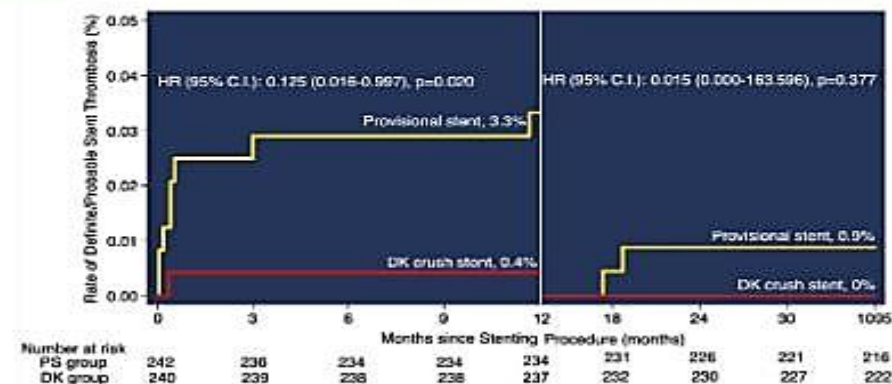
3-Year Outcomes of the DKCRUSH-V Trial Comparing DK Crush With Provisional Stenting for Left Main Bifurcation Lesions

FIGURE 2 Survival Rate Free From Clinical Events at 3-Year Follow-Up



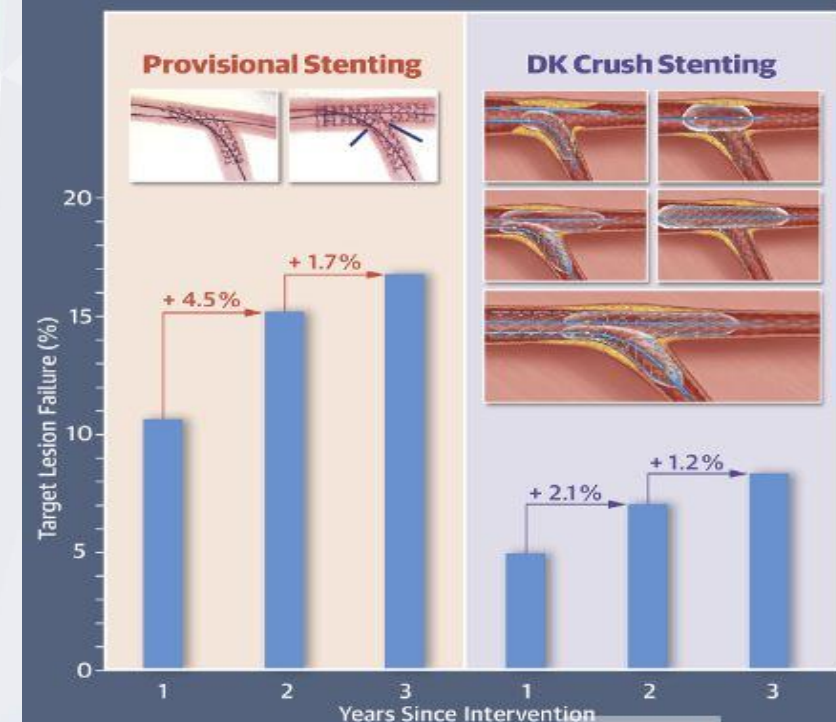
PS was associated with significant increase of target lesion failure (TLF), target vessel myocardial infarction (TVM), and target lesion revascularization (TLR) compared with the DK crush stent. There was no statistical difference in cardiac death. CI = confidence interval; HR = hazard ratio; other abbreviations as in Figure 2.

FIGURE 3 Landmark Analysis of Definite or Probable ST



PS was associated with significantly higher rate of definite or probable stent thrombosis (ST) at 1-year follow-up compared with the DK crush stent group. There was no statistical difference in very late ST between the 2 groups. Abbreviations as in Figures 2 and 3.

Complex Left Main Bifurcation Lesions

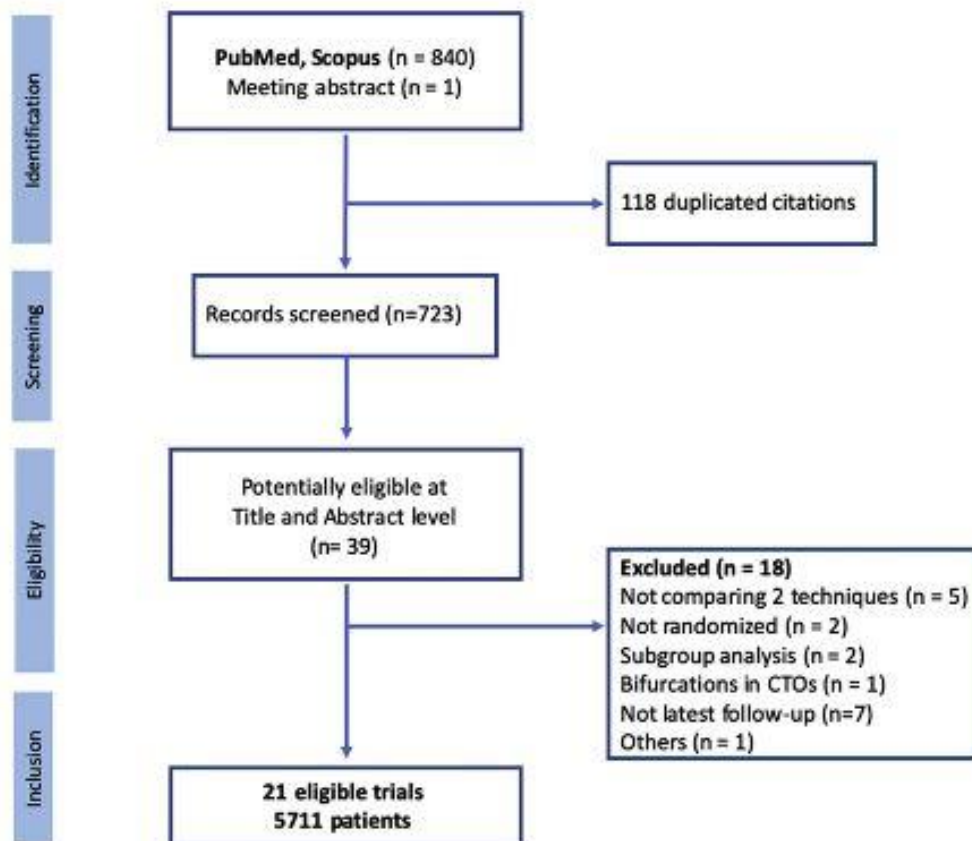


Clinical Outcomes Following Coronary Bifurcation PCI Techniques

A Systematic Review and Network Meta-Analysis Comprising 5,711 Patients



FIGURE 1 Flow Diagram of the Search for Published Studies



CTO = chronic total occlusion.

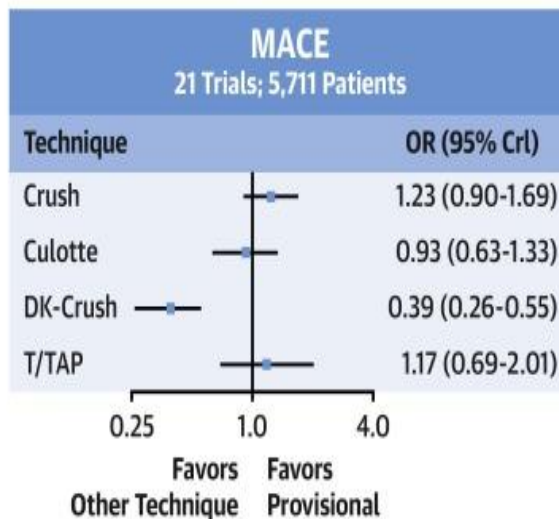
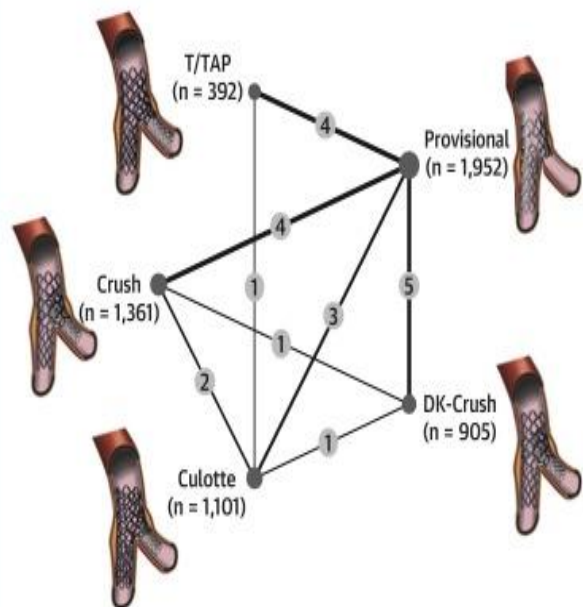
First Author/Trial/Ref. (#)	Year	Interventions	Sample Size
Pan et al. (8)	2004	Pro vs. T ste	91
CACTUS (9)	2009	Crush vs. Pro	350
Colombo et al. (10)	2004	T ste vs. Pro	86
Lin et al. (3)*	2010	Pro vs. DK	108
BBC ONE (4)*	2010	Pro vs. Crush	500
EBC TWO (11)	2016	Pro vs. Cul	200
DK Crush V (6)	2017	Pro vs. DK	482
Zheng et al. (12)	2016	Crush vs. Cul	300
DK Crush III (13)	2015	DK vs. Cul	419
NSTS (14)	2013	Crush vs. Cul	424
DK Crush II (15)	2017	DK vs. Pro	366
NBS (16)*	2013	Pro vs. Crush	413
BBK I (17)	2015	Pro vs. T ste	202
PERFECT (18)	2015	Crush vs. Pro	419
NBSIV (19)*	2015	Pro vs. Cul	450
BBK II (20)	2016	Cul vs. TAP	300
Zhang et al. (21)	2016	Pro vs. Cul	104
Ruiz et al. (22)	2013	Pro vs. T ste	69
DK-Crush I (23)	2008	Crush vs. DK	311
Ye et al. (24)	2010	Pro vs. DK	51
Ye et al. (25)	2012	Pro vs. DK	75

Clinical Outcomes Following Coronary Bifurcation PCI Techniques

A Systematic Review and Network Meta-Analysis Comprising 5,711 Patients

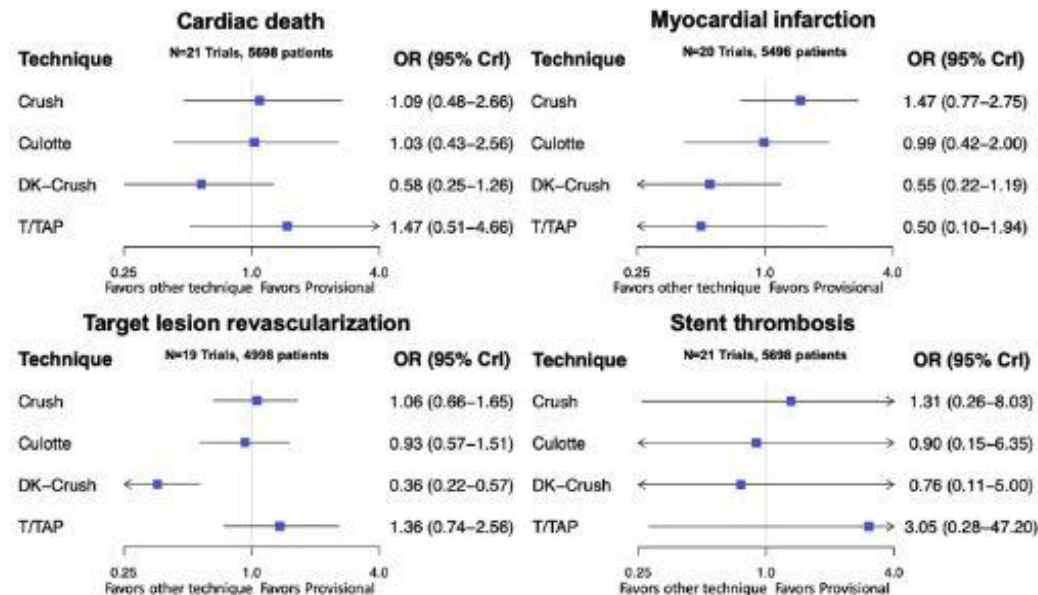


CENTRAL ILLUSTRATION: Network Plot and Forest Plot for the Primary Outcome of Interest

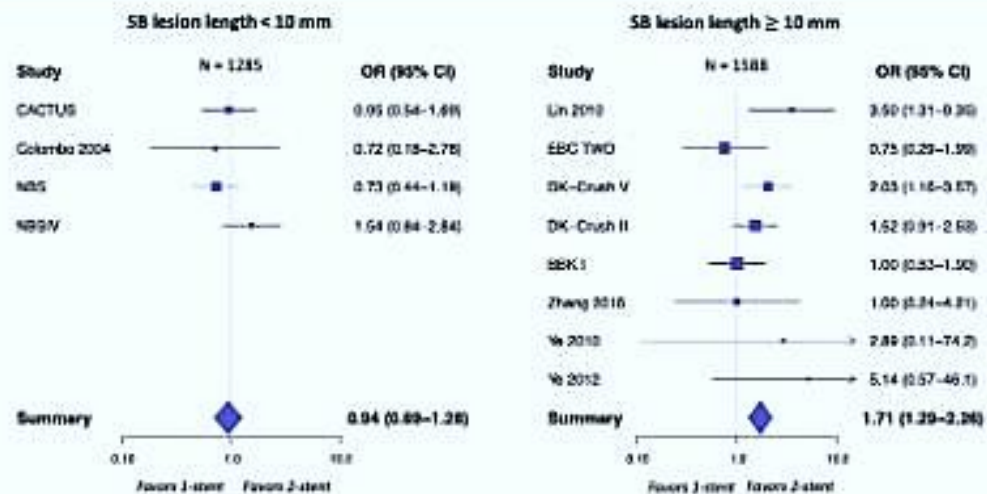


Di Gioia, G. et al. J Am Coll Cardiol Interv. 2020;13(12):1432-44.

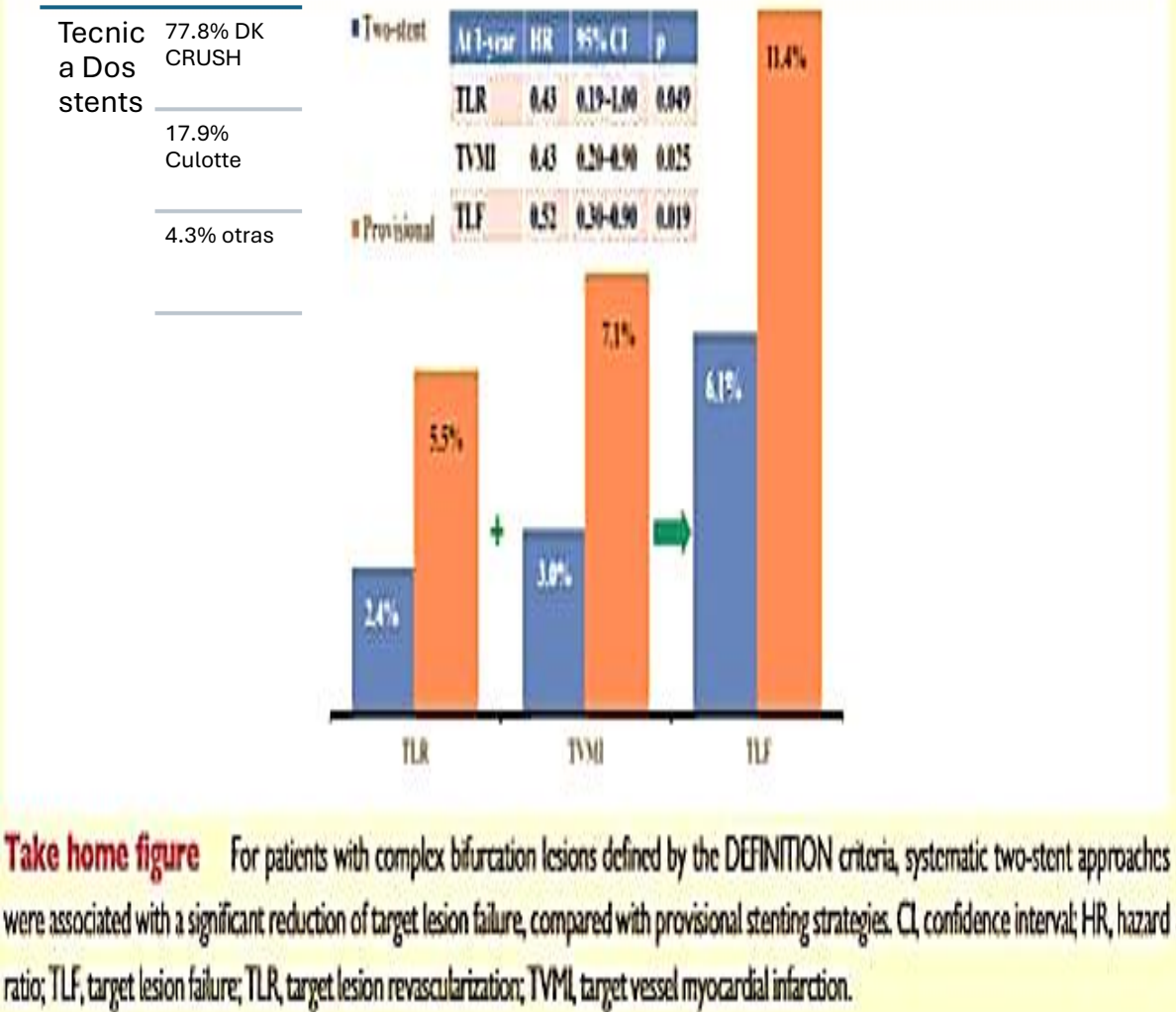
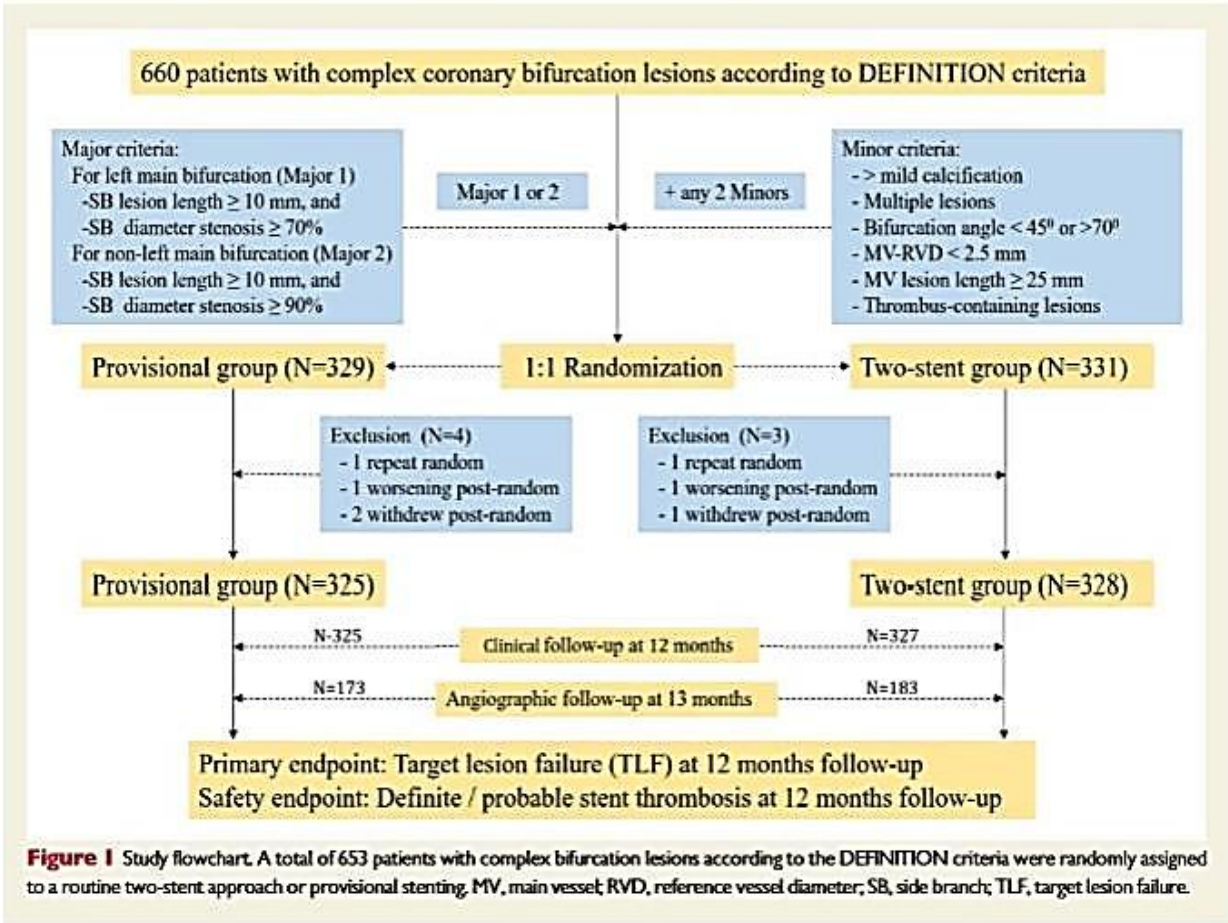
FIGURE 2 Network Meta-Analysis Forest Plots for the Secondary Outcomes of Interest



CrI – credible interval; DK-crush – double-kissing crush; MACE – major adverse cardiovascular events; OR – odds ratio; T/TAP – T stenting/T and protrusion.



Multicentre, randomized comparison of
two-stent and provisional stenting techniques
in patients with complex coronary bifurcation
lesions: the DEFINITION II trial



Percutaneous coronary intervention for obstructive bifurcation lesions: the 14th consensus document from the European Bifurcation Club

2018 ESC/EACTS Guidelines on myocardial revascularization

PROVISIONAL STENT

- Abordaje de elección en mayoría de bifurcaciones (EBC)

DOS STENTS ELECTIVOS

- RAMA LATERAL >2.75 mm (GD)
- Longitud de lesión en la rama > 5mm (GD)
- Bifurcacion verdadera Tronco Comun
- Anticipacion dificultad de acceso a Rama

TECNICA DE DOS STENTS

- EN TRONCO COMUN DK-CRUSH (IIB (B) en GD)
- OTRAS LOCALIZACIONES EVIDENCIA INSUFICIENTE PARA RECOMENDACIÓN DE UNA SOBRE OTRA

ORIGINAL RESEARCH ARTICLE

Stepwise Provisional Versus Systematic Dual-Stent Strategies for Treatment of True Left Main Coronary Bifurcation Lesions

Sandeep Arunothayaraj, MBBS , Mohaned Egred, MD , Adrian P. Banning, MD , Philippe Brunel, MD, Mirosław Ferenc, PhD, Thomas Hovasse, MD, Adrian Włodarczak, PhD , Manuel Pan, PhD , Thomas Schmitz, MD, Marc Silvestri, MD, Andreis Erglis, PhD , Evgeny Kretov, MD , Jens Flensted Lassen, PhD , Alaide Chieffo, MD , Thierry Lefèvre, MD , Francesco Burzotta, PhD , James Cockburn, MD, Olivier Darremont, MD , Goran Stankovic, PhD , Marie-Claude Morice, MD, Yves Louvard, MD, and David Hildick-Smith, MD 

End points	Provisional strategy (n=230), n (%)	Systematic dual-stent strategy (n=237), n (%)	Hazard ratio (95% CI)	P value
Primary end point (MACE)				
All-cause mortality, MI, and TLR	54 (23.5)	70 (29.5)	0.75 (0.52–1.07)	0.110
Secondary end points				
Mortality				
All-cause mortality	23 (10.0)	31 (13.1)	0.74 (0.43–1.27)	0.269
Procedural or sudden death*	8 (3.5)	12 (5.1)	0.67 (0.27–1.63)	0.375
MI				
All	28 (12.2)	26 (11.0)	1.09 (0.64–1.86)	0.749
Periprocedural*	9 (3.9)	11 (4.6)	0.84 (0.35–2.03)	0.700
Type 4c*	8 (3.5)	8 (3.4)	1.01 (0.38–2.69)	0.983
Revascularization				
TLR	19 (8.3)	37 (15.6)	0.50 (0.29–0.86)	0.013
Stent thrombosis				
Definite or probable	5 (2.2)	3 (1.3)	1.69 (0.40–7.08)	0.471
Bifurcation-specific adverse cardiac events*				
Procedural or sudden death, periprocedural MI, definite or probable stent thrombosis, T4c MI, and TLR	35 (15.2)	53 (22.4)	0.64 (0.42–0.99)	0.043

1.5% LESIONES COMPLEJAS
SEGÚN ESTUDIO DEFINITION
(32% EN DK CRUSH V)

- Mediana Longitud lesión rama lateral 5 mm

5% DK CRUSH ESTRATEGIA DOS
STENTS

VASO LATERAL <3.25 Y LESION <10
MM: MEJOR PROVISIONAL
STENTING

LESION BIFURCACION VERDADERA DE TRONCO COMUN ¿DOS SISTEMATICOS VS PROVISIONAL STENTING?

DEBATE

REC Interv Cardiol. 2022;4:329-330

A debate: Estrategias de
revascularización percutánea para la
enfermedad del tronco común distal.
Abordaje según el EBC MAIN



Debate: Percutaneous revascularization strategies for distal left main coronary artery disease. The EBC MAIN approach

Manuel Pan 

Servicio de Cardiología, Hospital Universitario Reina Sofía, Universidad de Córdoba, Instituto Maimónides de Investigación Biomédica de Córdoba (IMIBIC), Córdoba, España

REC Interv Cardiol. 2022;4:331-332

A debate: Estrategias de
revascularización percutánea para la
enfermedad del tronco común distal.
Abordaje desde la perspectiva del
DKCRUSH-V



Debate: Percutaneous revascularization strategies for distal left main coronary artery disease. Approach from the DKCRUSH-V trial

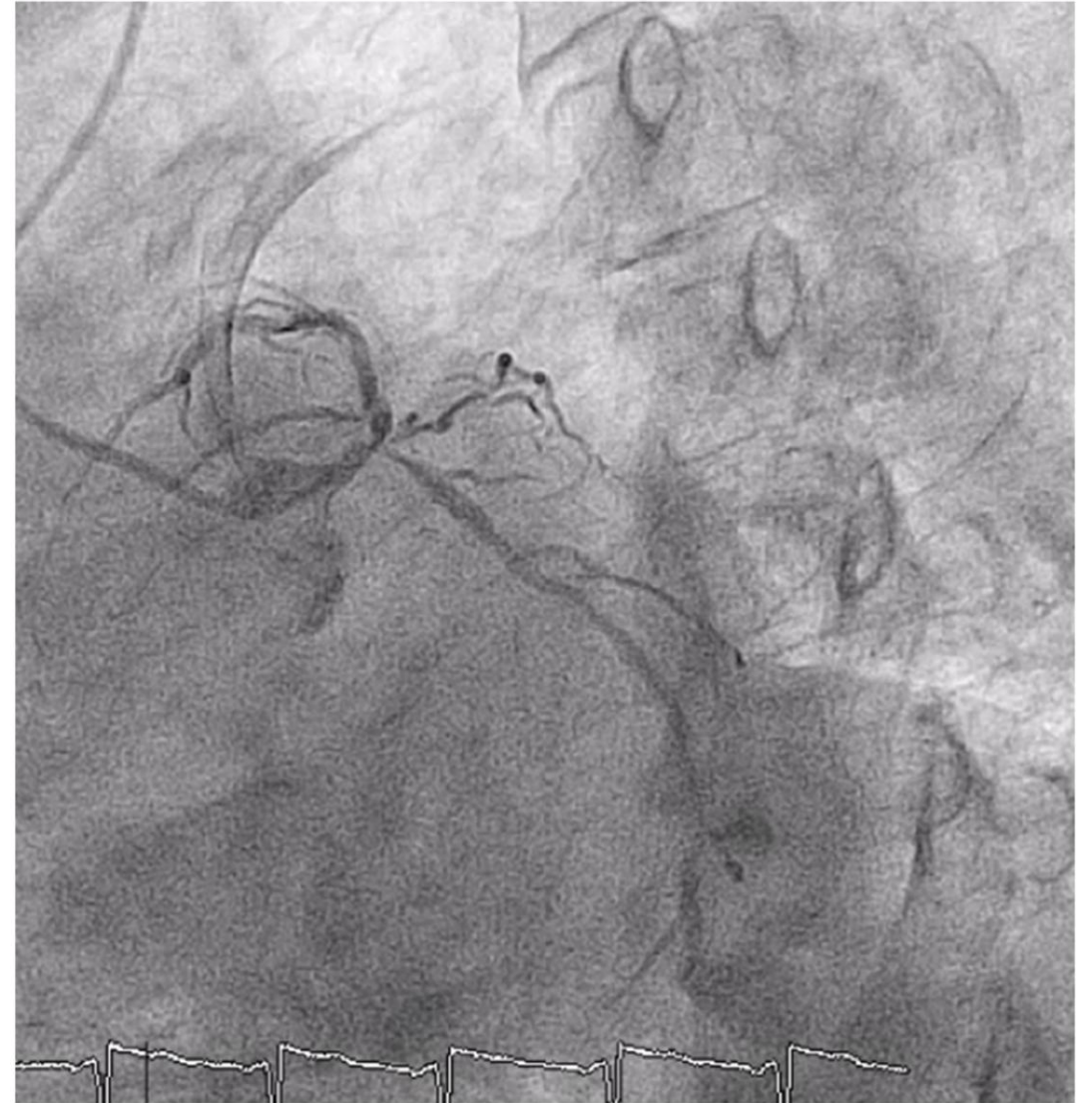
Antonio E. Gómez Menchero 

Servicio de Cardiología, Hospital Universitario Juan Ramón Jiménez, Huelva, España

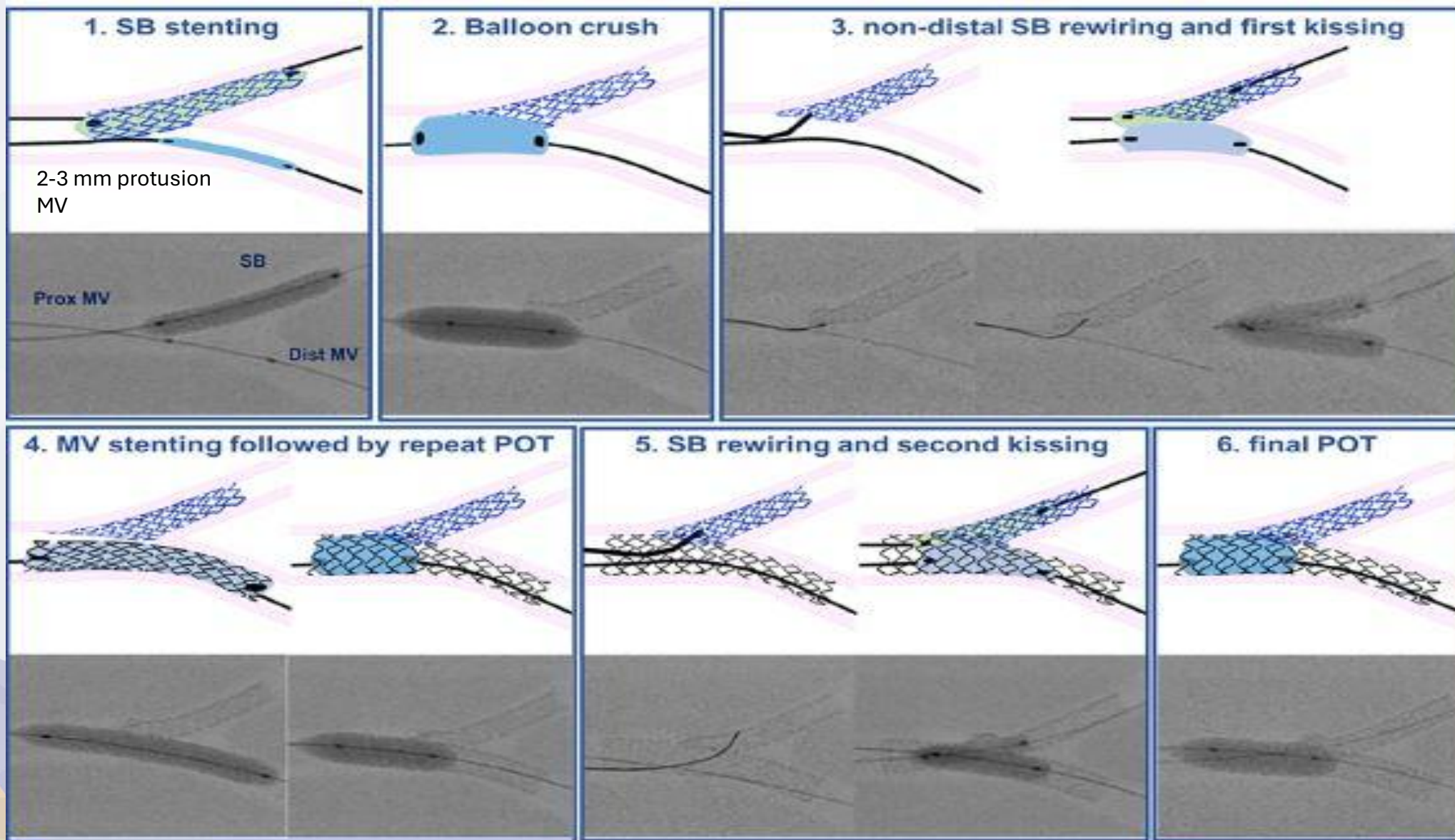
LESION BIFURCACION VERDADERA DE TRONCO COMUN ¿DOS SISTEMATICOS VS PROVISIONAL STENTING?

Trials	DK-CRUSH V ^{58,60}	EBC-MAIN ⁶¹
Year of publication	2017	2021
Study design	Provisional 1-stent strategy vs DK-CRUSH V in true unprotected left main bifurcation	Provisional 1-stent strategy vs upfront 2-stent strategy in true unprotected left main bifurcation
Total number of patients (provisional vs 2-stent)	482 (242 vs 240)	467 (230 vs 237)
Mean age (provisional vs 2-stent)	64 vs 65	70.8 vs 71.4
Sites	26 sites (23 sites in Asia, 2 sites in the United States, and 1 site in Italy)	31 sites in 11 European countries
Operator experience	≥300 PCIs/y and ≥20 left main PCIs	≥150 PCIs/y
Anatomic complexity		
Mean SYNTAX score, ratio of 0–22/23–32/>32	30.6 12.7%/43.1%/44.1%	22.9 28.7%/57.0%/not reported
Length of side-branch lesion	16.4 mm	6.9 mm
Complex bifurcation	31.5%	Not classified
Use of IVUS guidance	Not mandated, 41.7%	Not mandated, 32.5%
Upfront 2-stent strategy	DK-crush	Culotte (53%), T/TAP (33%), DK crush (5%)
Conversion rate to 2-stent in provisional strategy	47%	22%
Final kissing balloons, provisional vs 2-stent	78.9% vs 99.6%	98.7% vs 97.0%
Final POT (provisional vs 2-stent)	98.8% vs 99.2%	98.7% vs 97.0%
Primary end point	TLF (cardiac death, target-vessel MI, or TLR)	MACE (all-cause death, MI, or TLR)
Key findings (provisional vs 2-stent)	1 y: 10.7% vs 5.0%; <i>P</i> =0.02 3 y: 16.9% vs.8.3%; <i>P</i> =0.006	1 y: 14.7% vs 17.7%; <i>P</i> =0.34

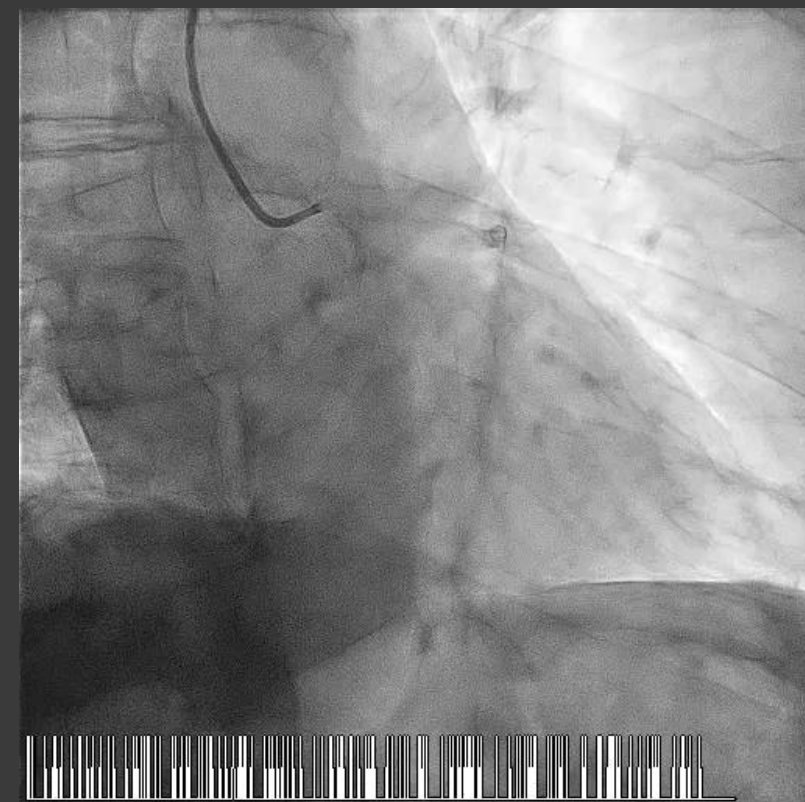
¿ABORDAJE SISTEMÁTICO BIFURCACION VERDADERA TCI 1-1-1 0-1-1?



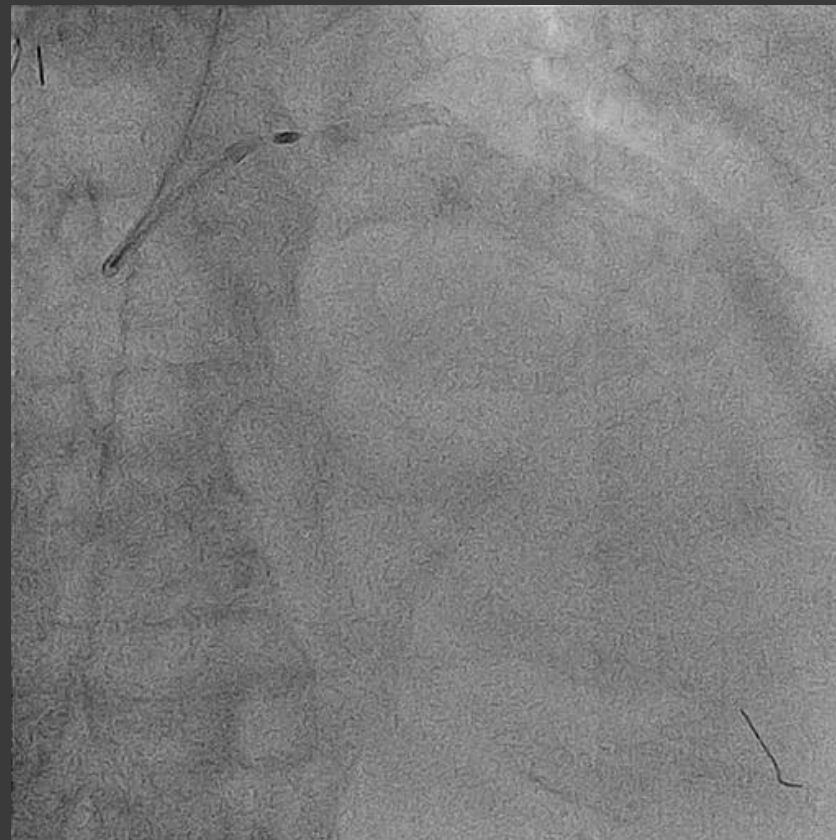
“DK CRUSH TECHNIQUE”



“DK CRUSH TECHNIQUE”

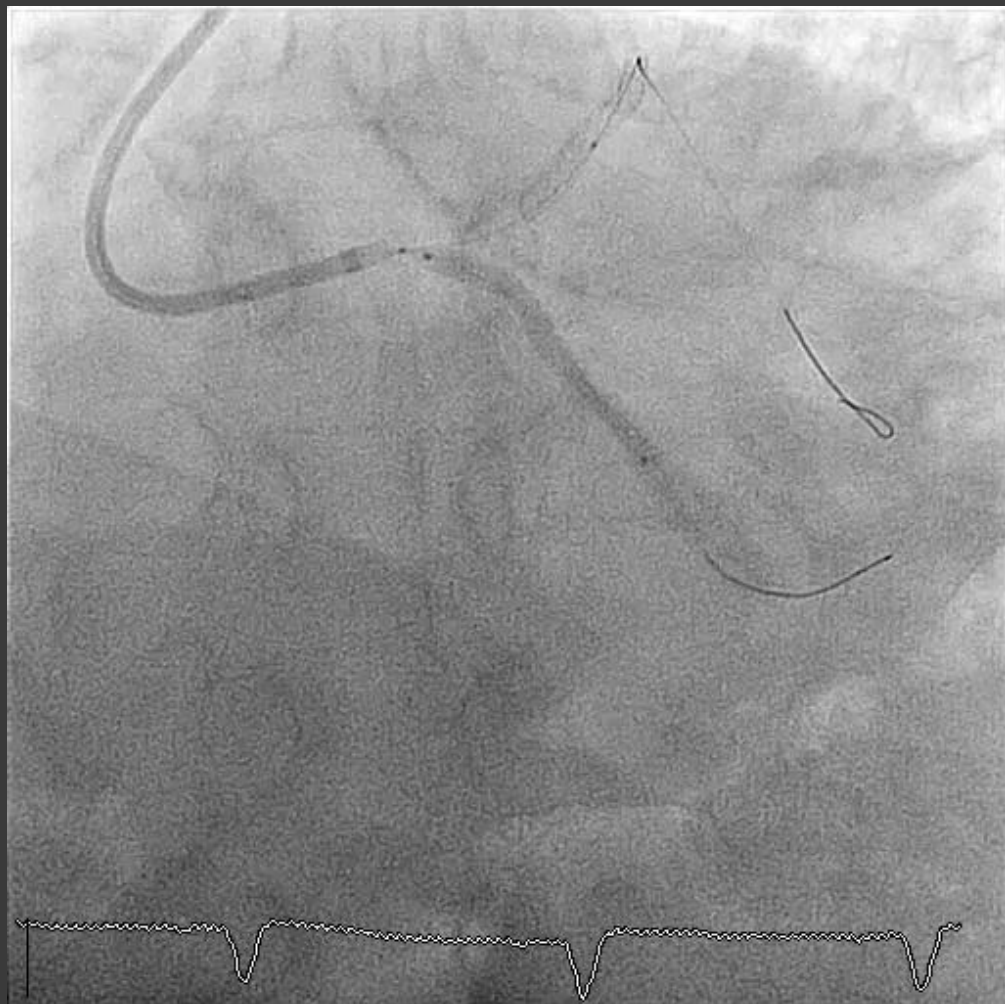


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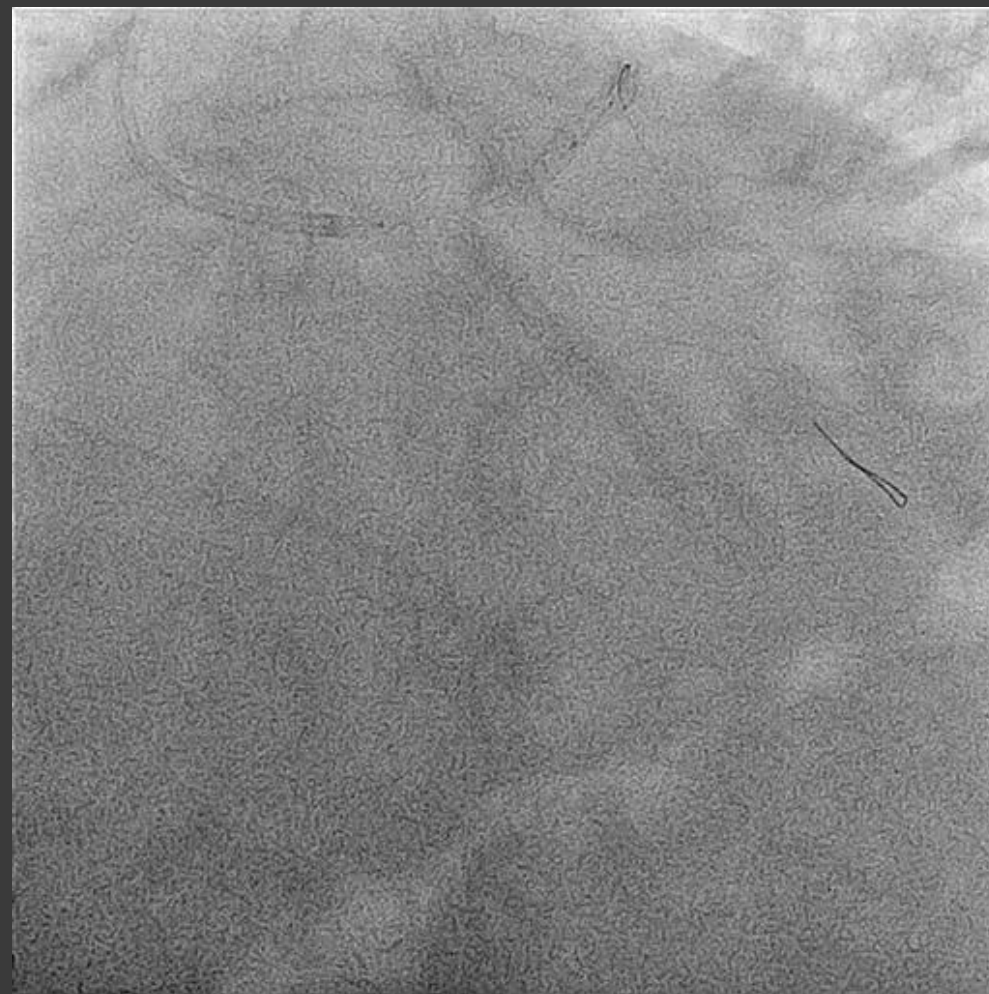


“DK CRUSH TECHNIQUE”

STENT 3.0/32 MM



CRUSH BALON 3.5/30 mm

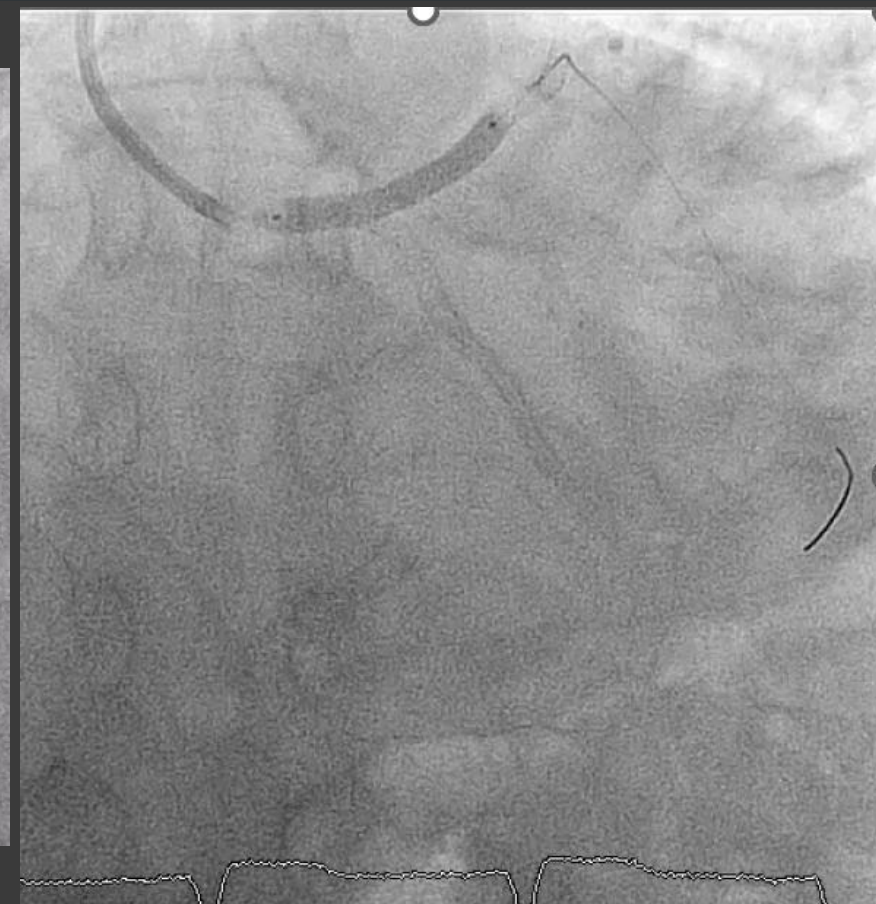
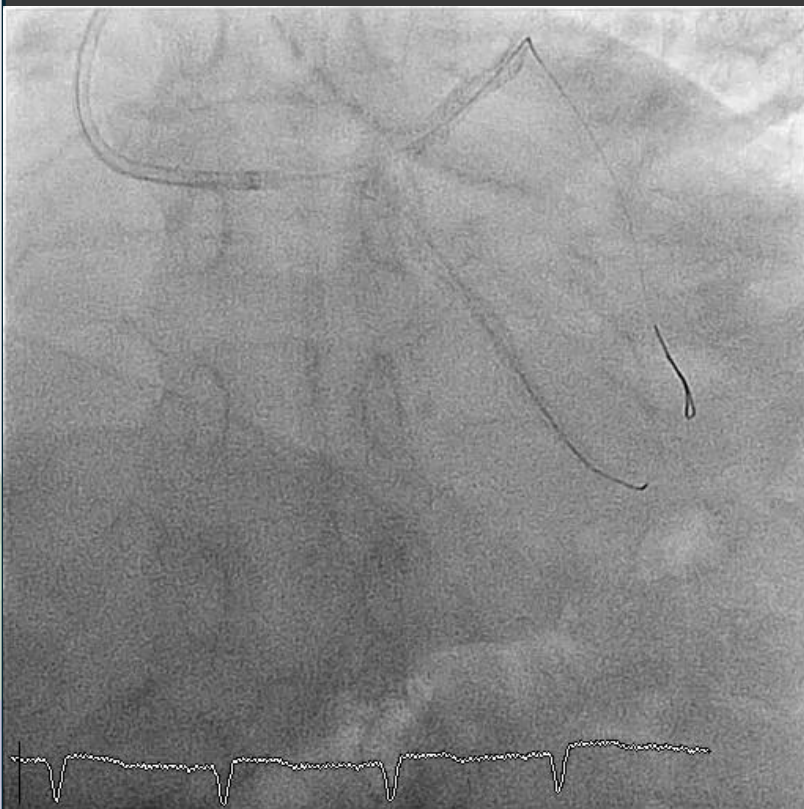


“DK CRUSH TECHNIQUE”

Cruce guía strut proximal

1º kissing 3.0 y 3.5

Stent 4.0/28 mm

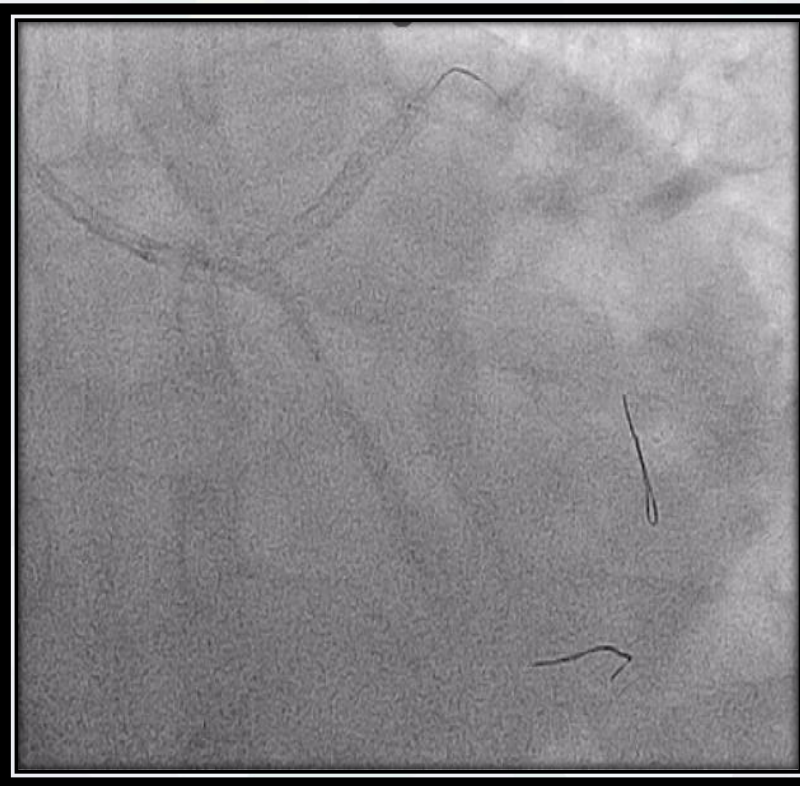


“DK CRUSH TECHNIQUE”

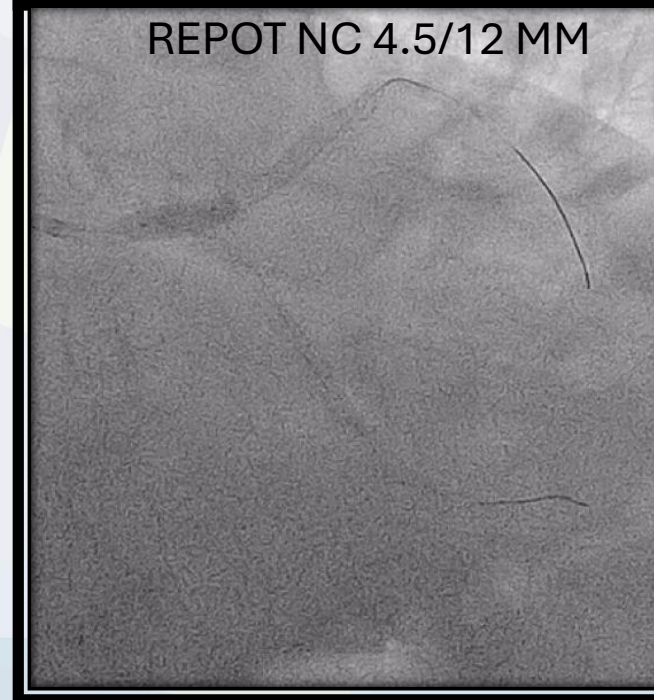
POT NC 4.5/12 MM



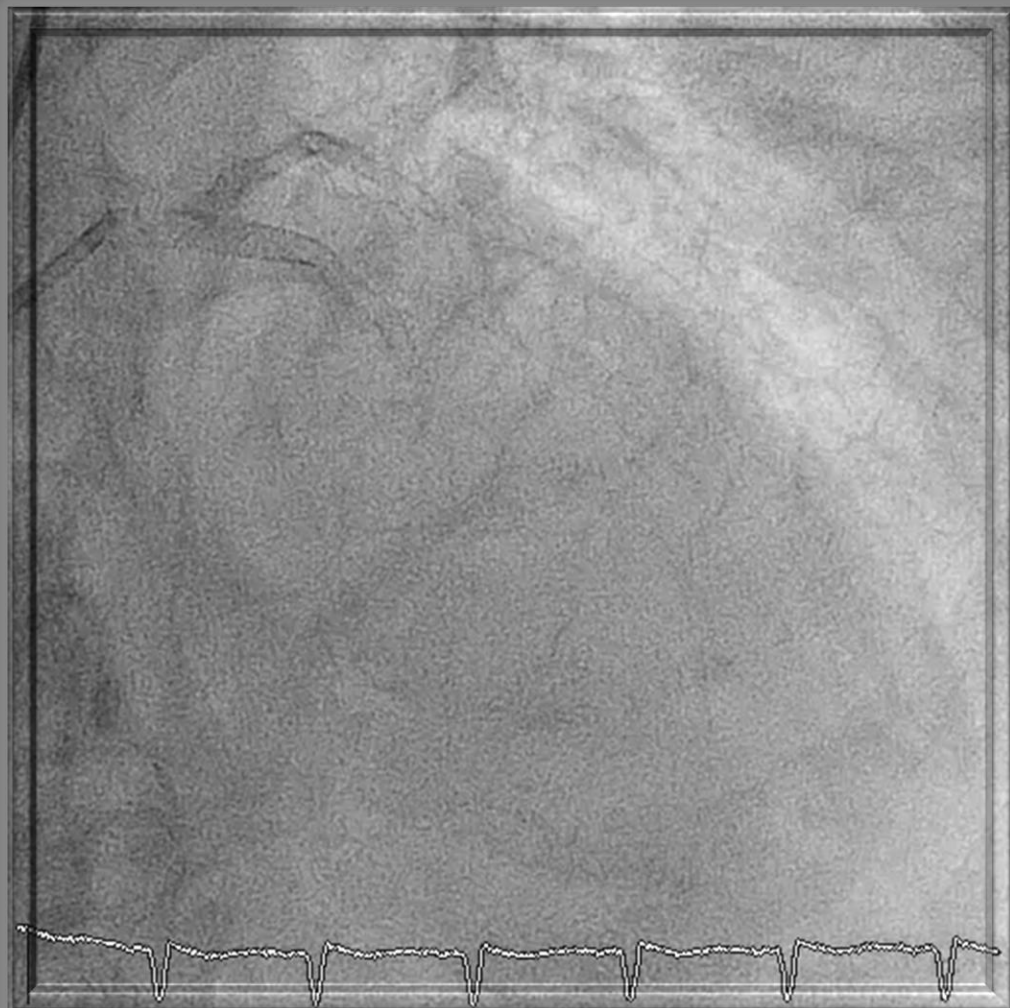
APERTURA CELDAS 2.0/20 MM

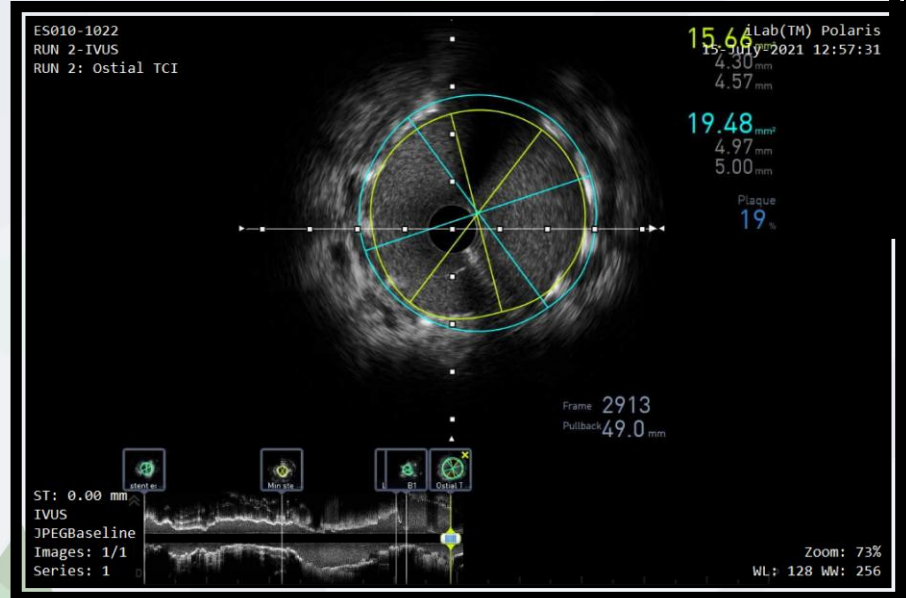
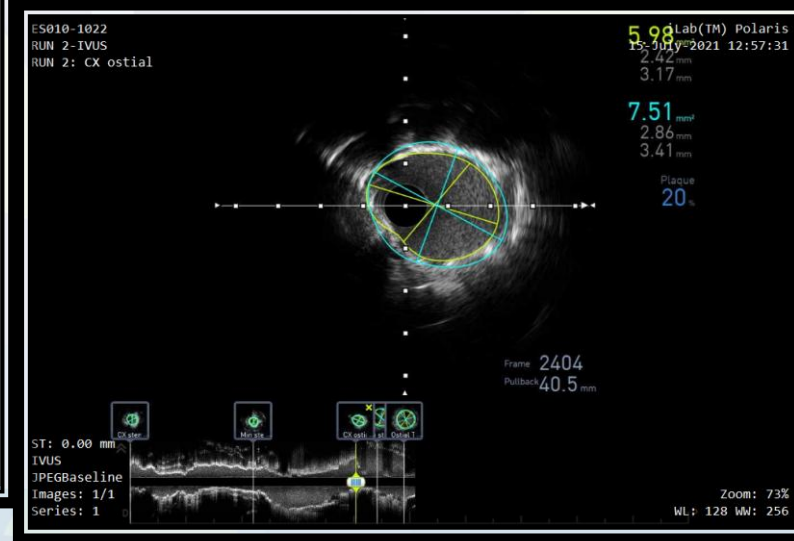
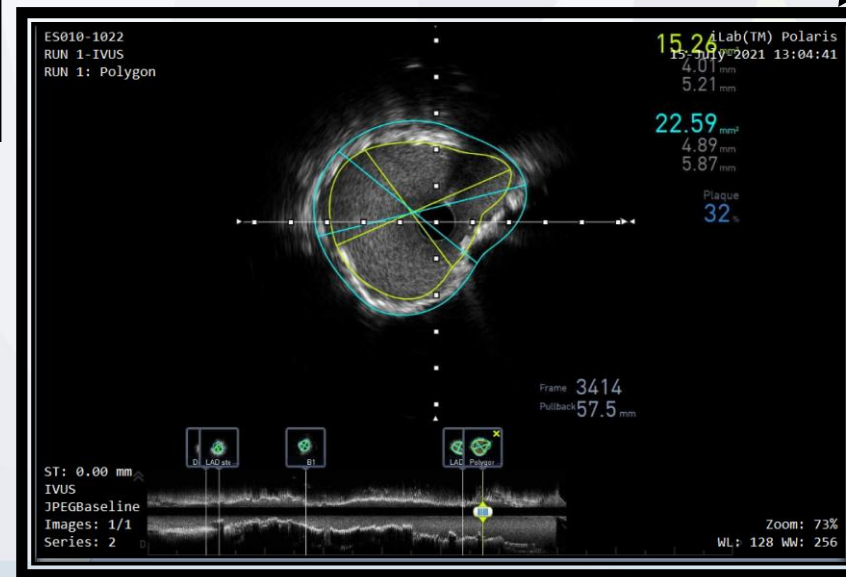
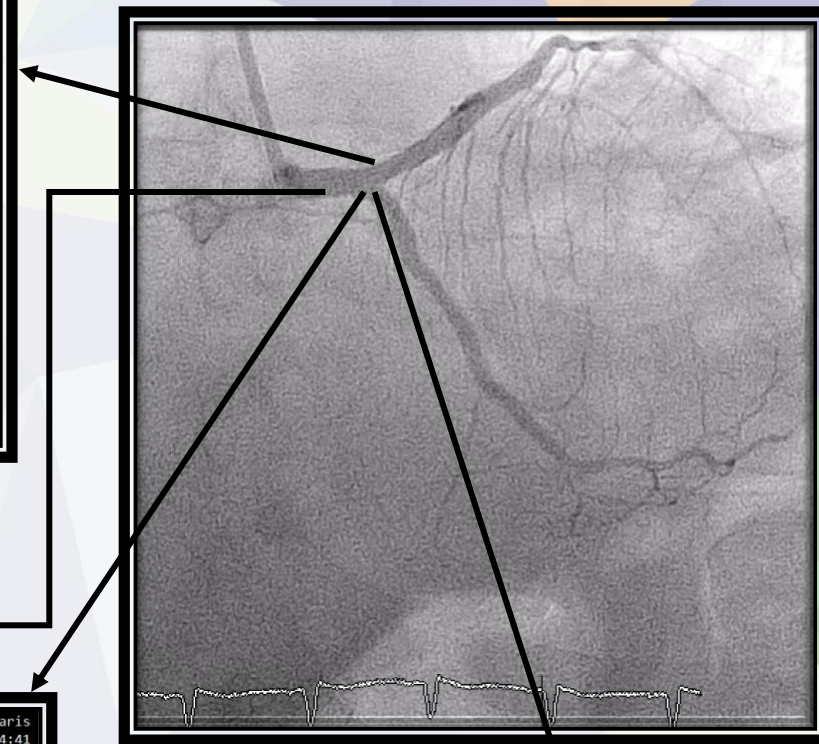
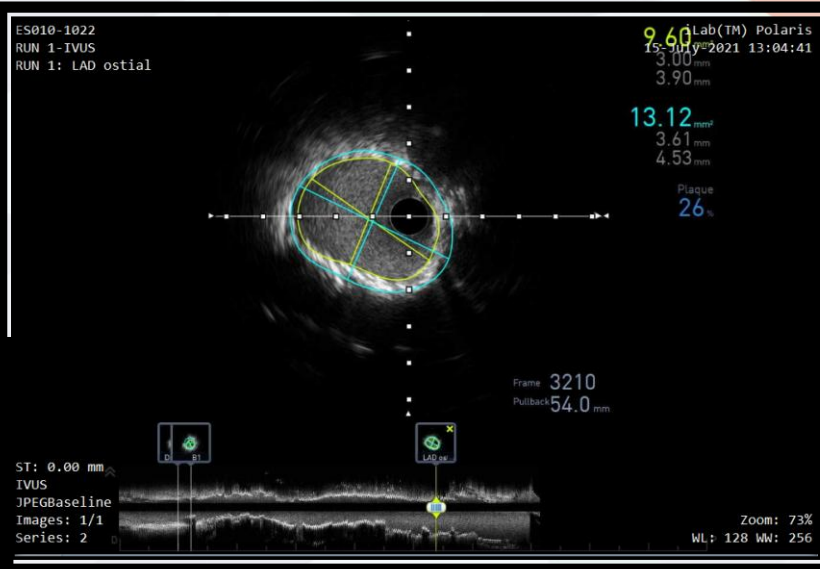


REPOT NC 4.5/12 MM

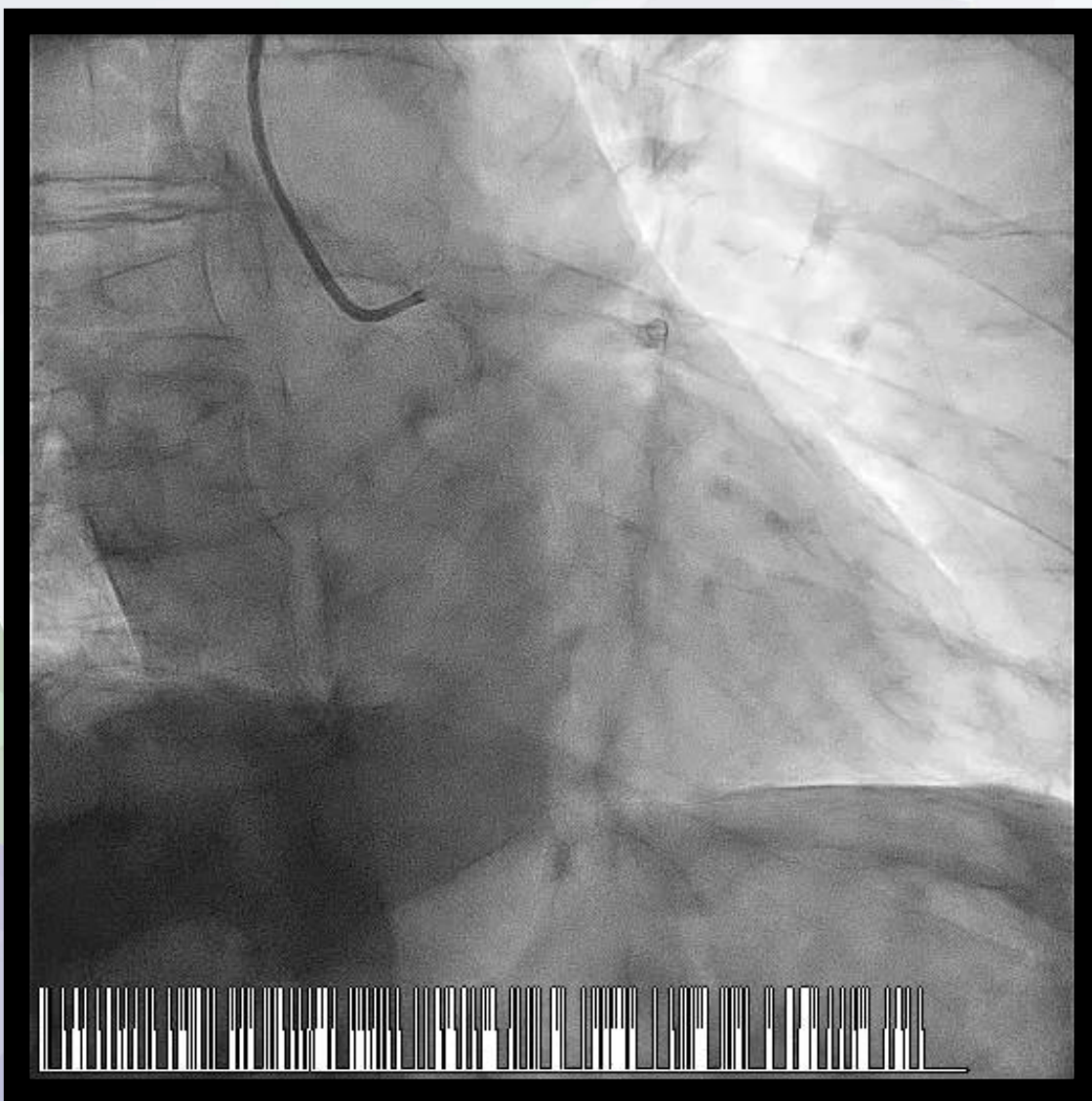


“DK CRUSH TECHNIQUE”





“DK CRUSH TECHNIQUE”



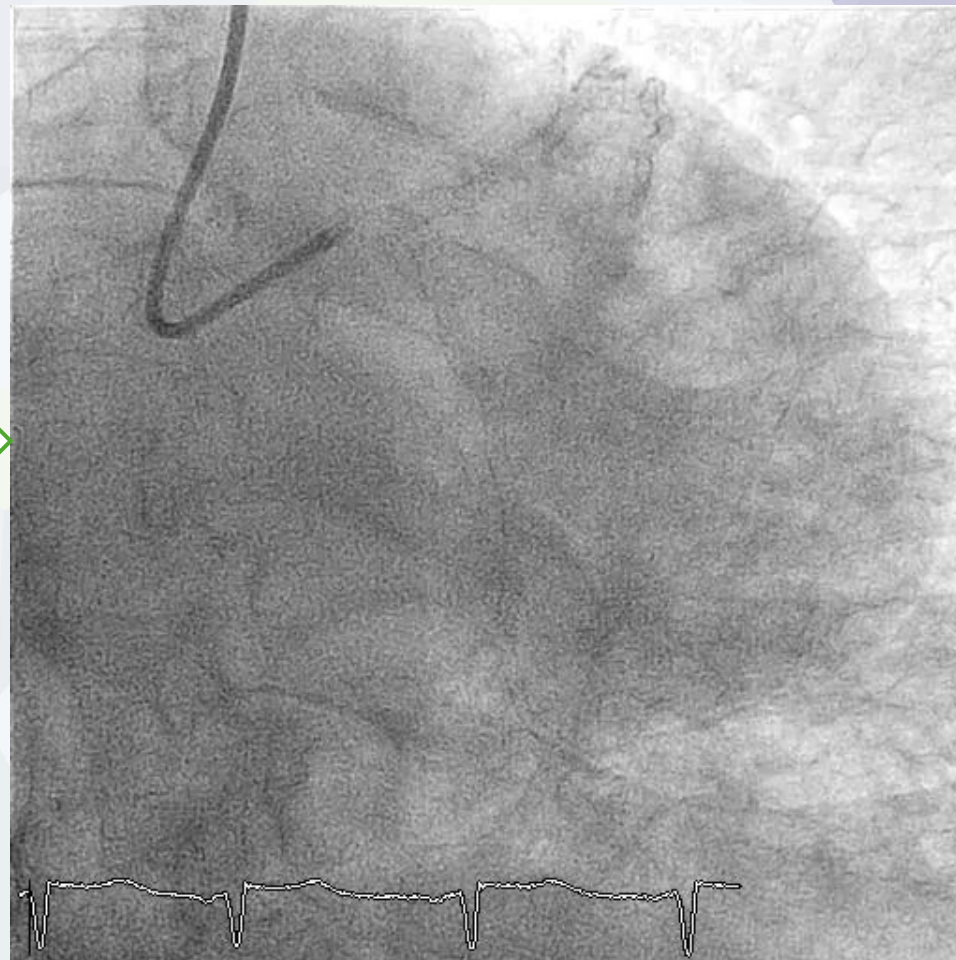
DK
CRUSH



“DK CRUSH TECHNIQUE”



DK
CRUSH



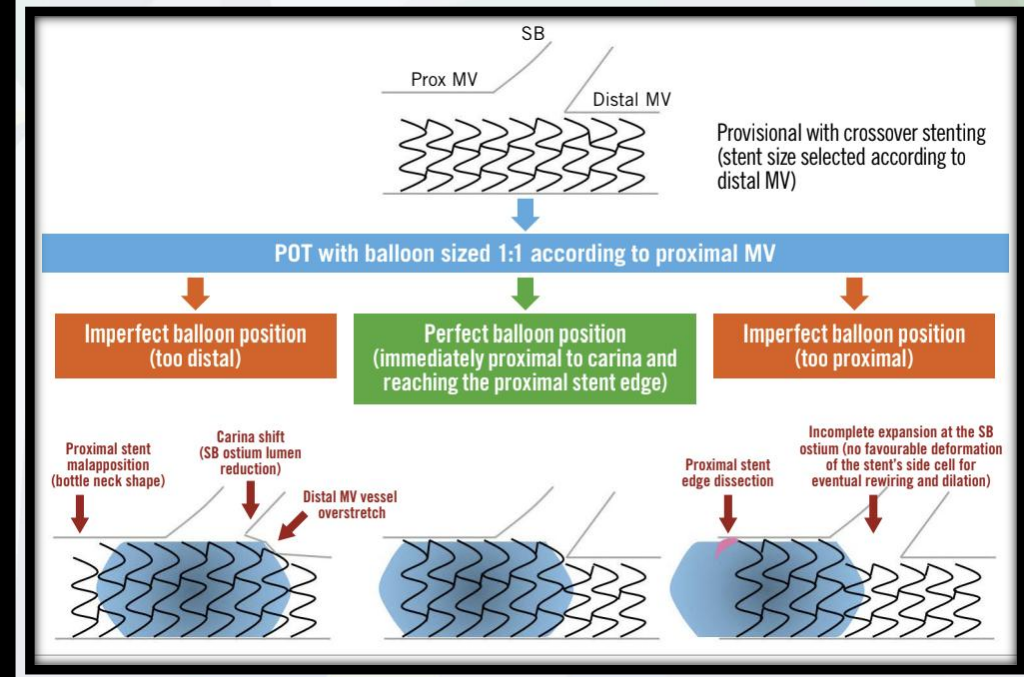
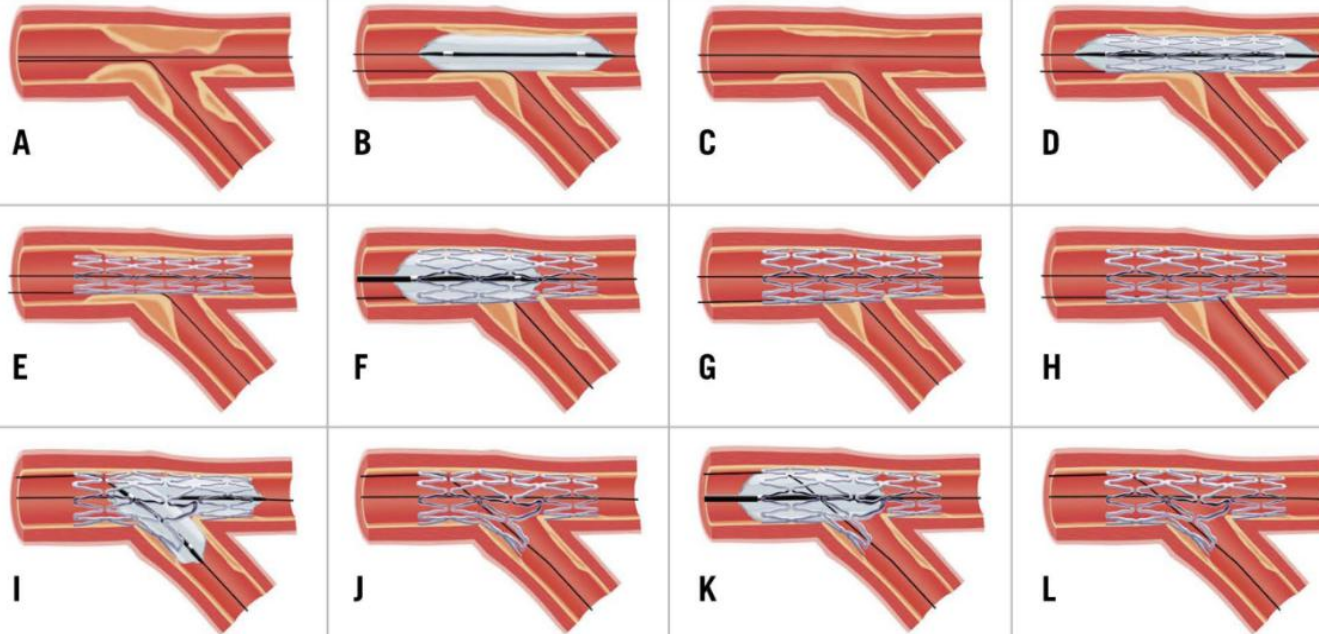
ESTRATEGIA EBC MAIN

“PROVISIONAL STENTING”

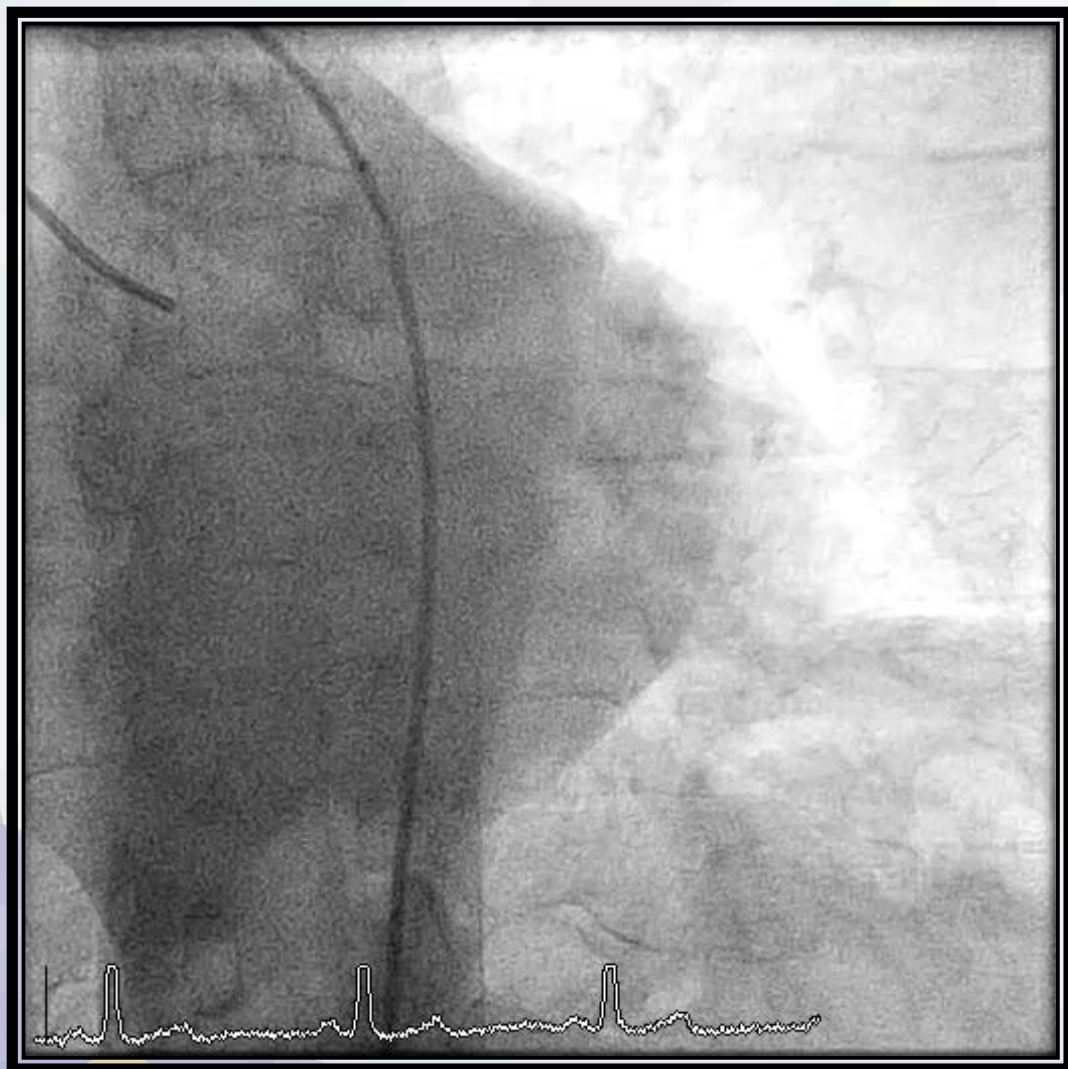
Percutaneous coronary intervention of bifurcation lesions

David Hildick-Smith^{1*}, MD; Sandeep Arunothayaraj¹, MBBS; Goran Stankovic², MD, PhD; Shao-Liang Chen³, MD, PhD

1. Sussex Cardiac Centre, University Hospitals Sussex NHS Trust, Brighton, United Kingdom; 2. Department of Cardiology, University Clinical Center of Serbia, and Faculty of Medicine, University of Belgrade, Belgrade, Serbia; 3. Department of Cardiology, Nanjing First Hospital, Nanjing Medical University, Nanjing, China

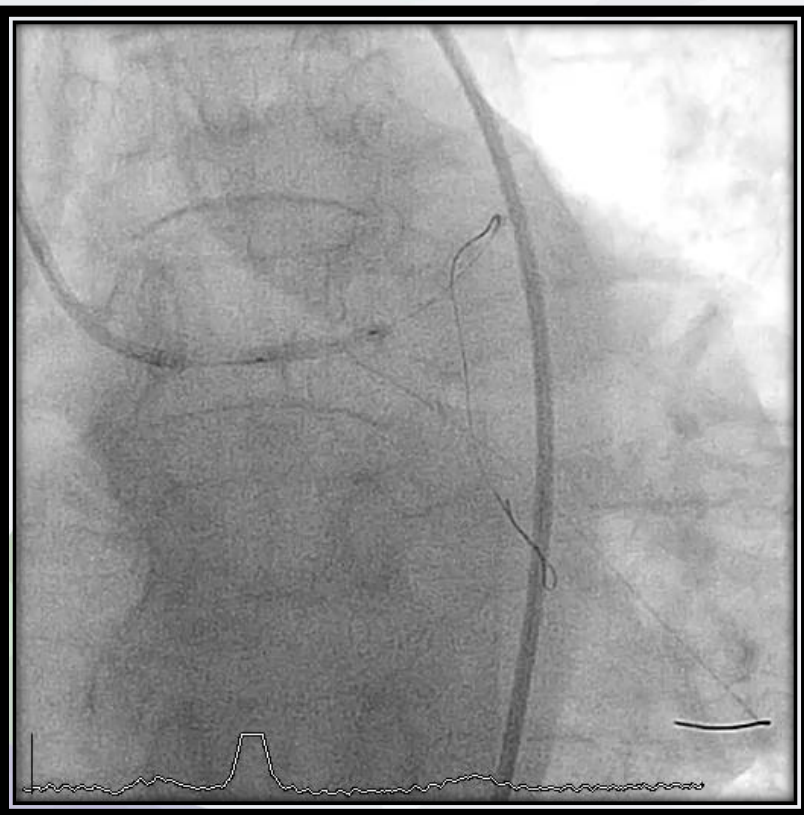


“PROVISIONAL STENTING”

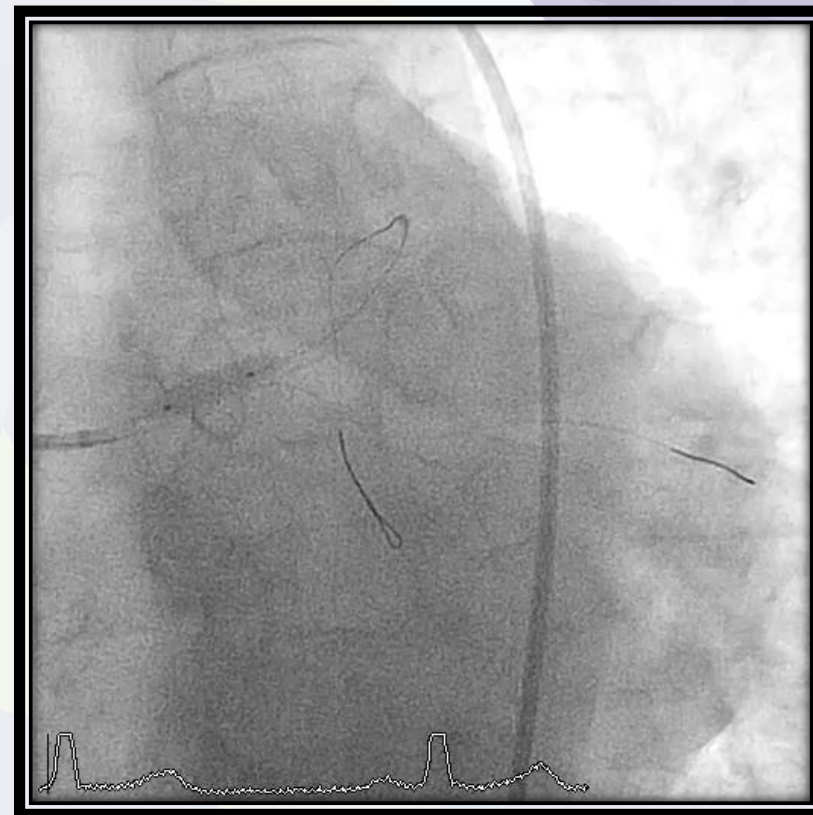
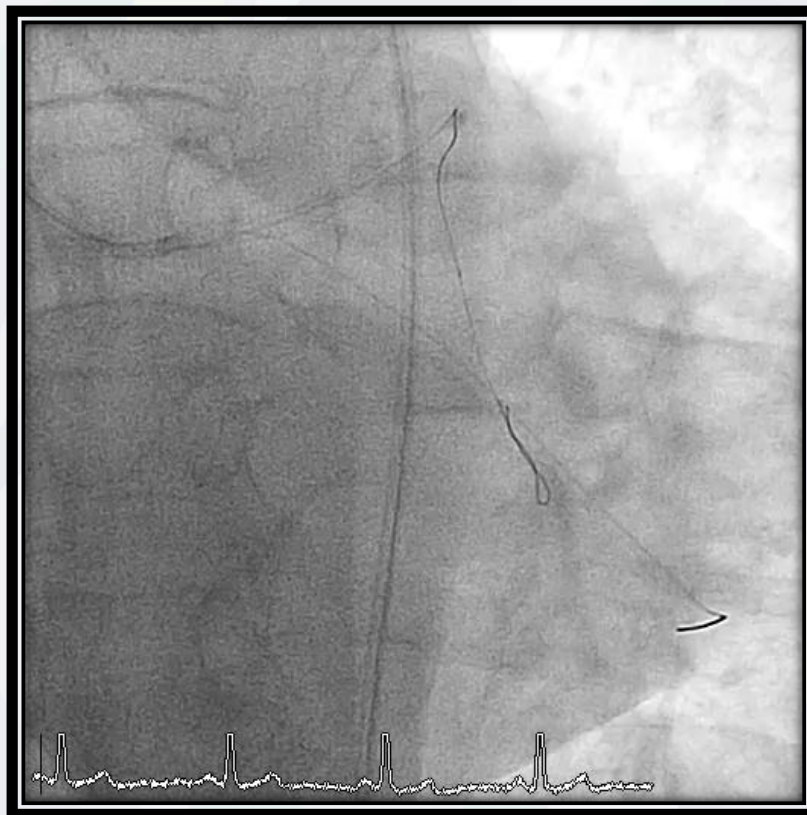


“PROVISIONAL STENTING”

Stent 3.5/18 mm



POT 4.0/12 MM



“PROVISIONAL STENTING”

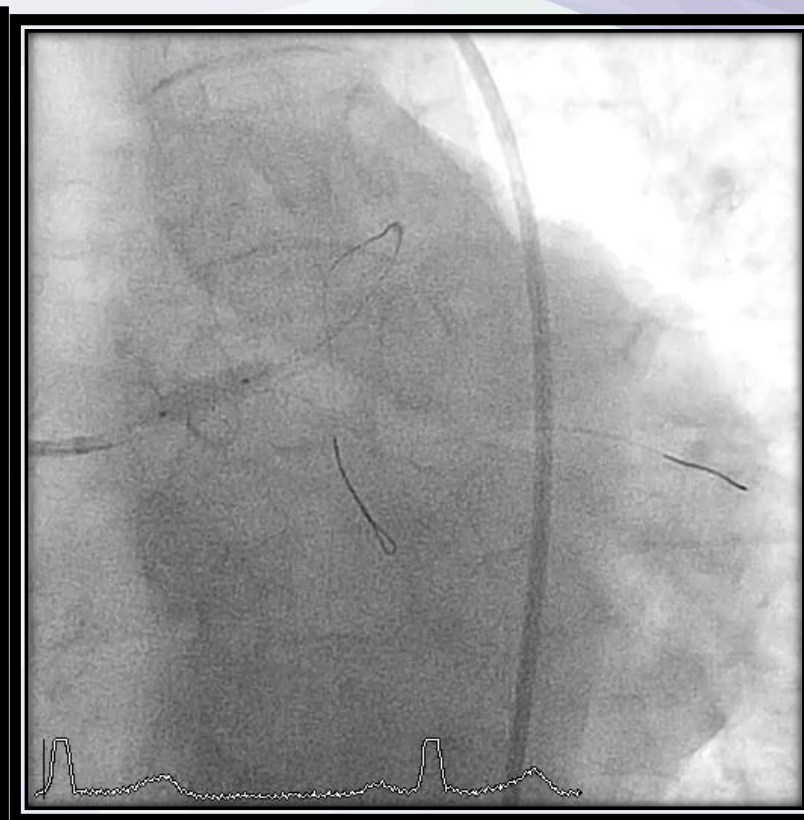
Apertura celdas 2.5/20 mm



Kissing 2.5 y 3.5 mm



REPOT 4.0 mm



“PROVISIONAL STENTING”



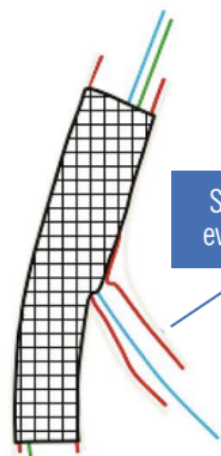
ESTRATEGIA EBC MAIN “T STENT”

Percutaneous coronary intervention of bifurcation lesions

David Hildick-Smith¹, MD; Sandeep Arunothayaraj¹, MBBS; Goran Stankovic², MD, PhD;
Shao-Liang Chen³, MD, PhD

¹ Sussex Cardiac Centre, University Hospitals Sussex NHS Trust, Brighton, United Kingdom; ² Department of Cardiology, University Clinical Center of Serbia, and Faculty of Medicine, University of Belgrade, Belgrade, Serbia; ³ Department of Cardiology, Nanjing First Hospital, Nanjing Medical University, Nanjing, China

MB stent (sizing according to distal MB diameter) followed by POT



SB result evaluation

Result obtained in the SB accepted
(keep-it-open principle)

Failed SB deserving further intervention

SB rewiring
(aimed at achieving distal rewiring)

SB dilatation with kissing balloon inflation

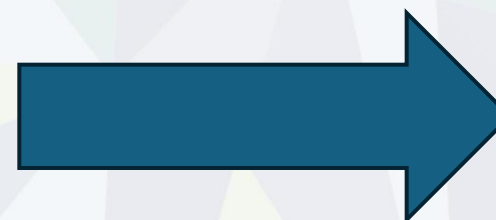
SB dilatation with kissing balloon followed by re-POT

SB dilatation with SB balloon followed by re-POT

SB result after ballooning not acceptable

SB stenting

Optimal result in the MB obtained

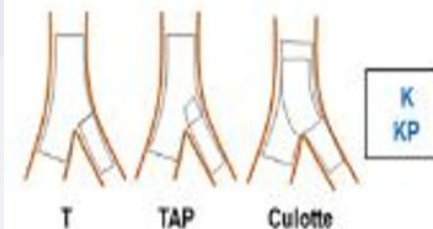
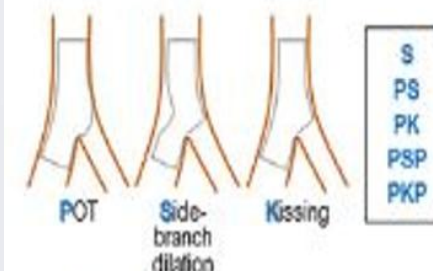


A

Main Across side first
(Provisional)



MB cross-over stenting



“PROVISIONAL STENTING”

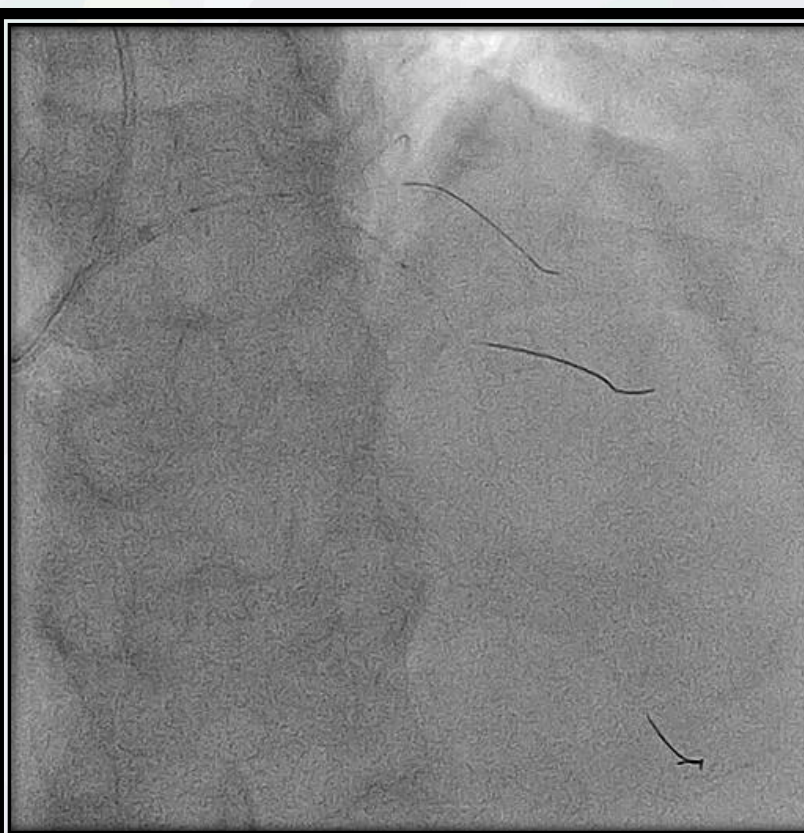


“PROVISIONAL STENTING”

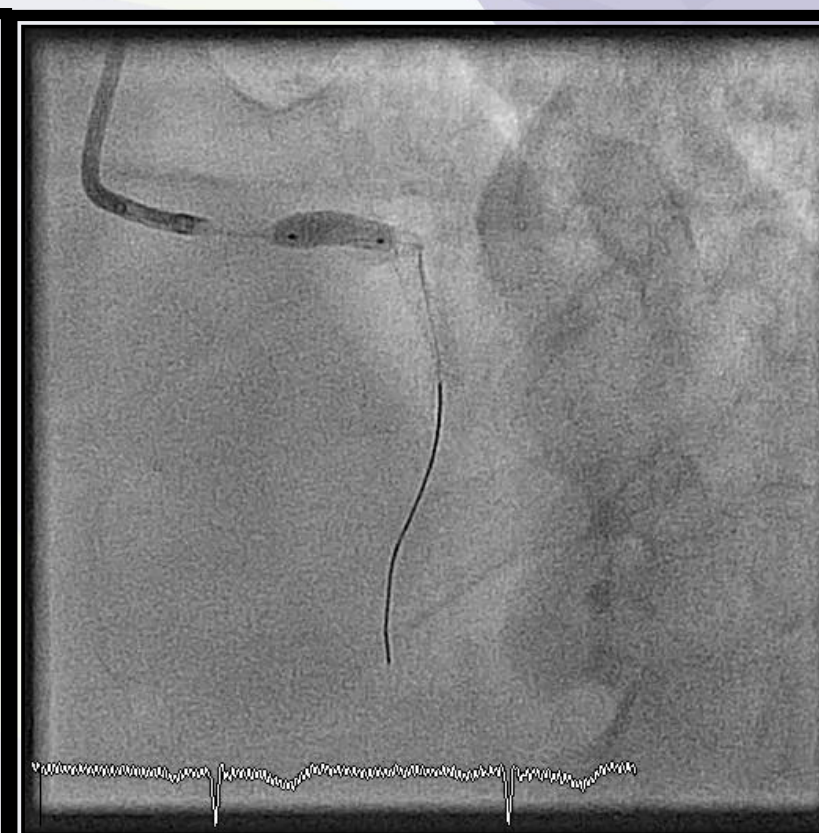
Predilat 3.0/30 mm



Stent 3.0/38 mm

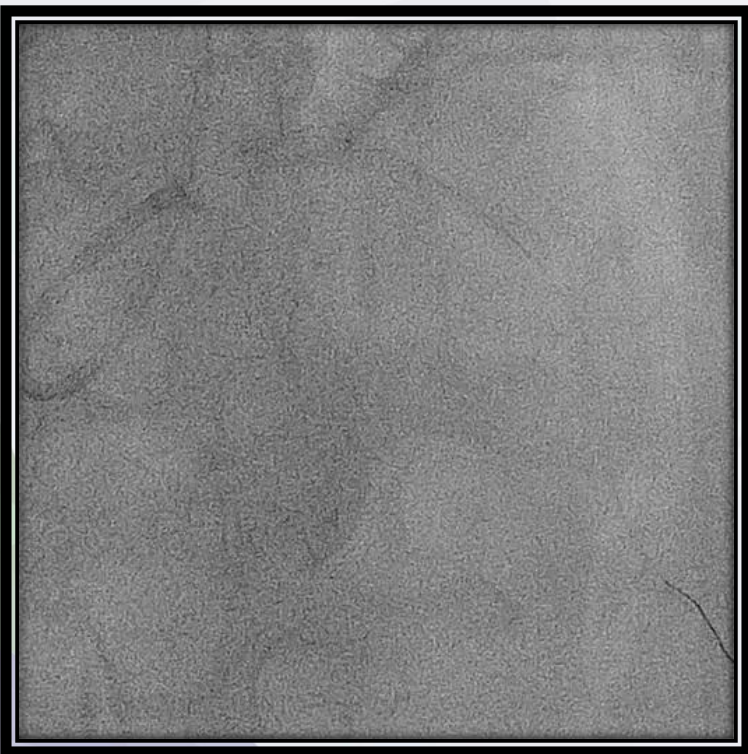


Stent 4.0/12 mm



“PROVISIONAL STENTING”

Balón 4.0/15 mm



Kissing 3.0 y 3.5 mm

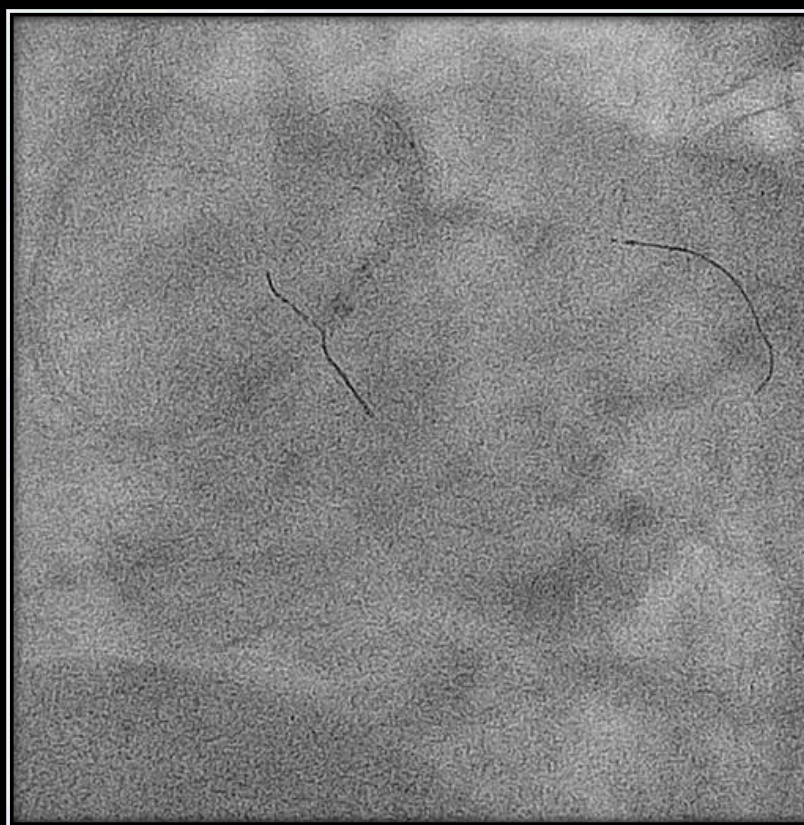


“T STENTING”

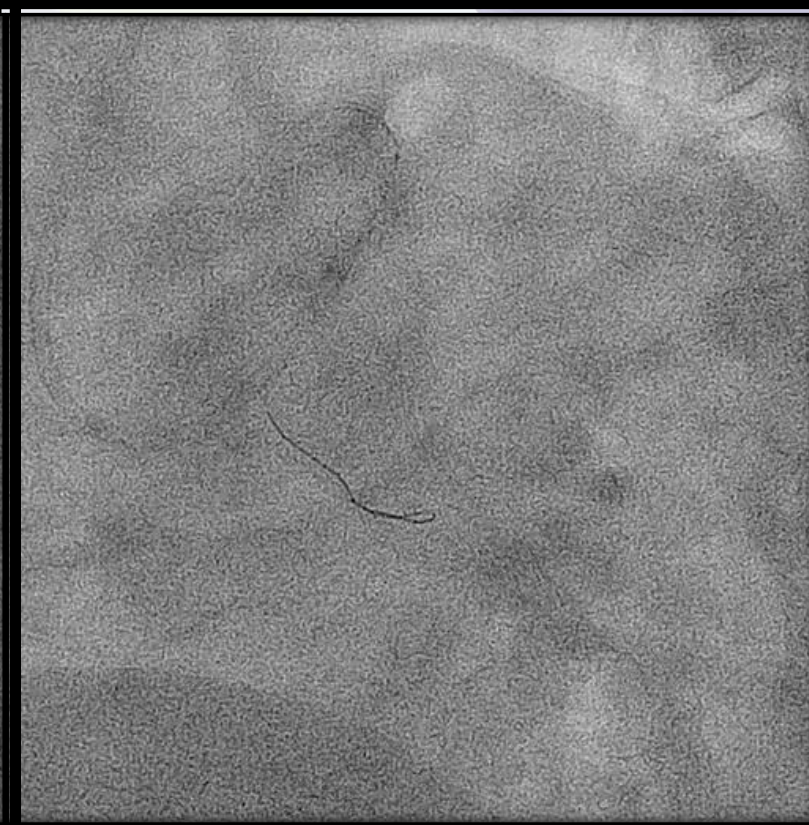
TAP Stent 3.0/38 mm



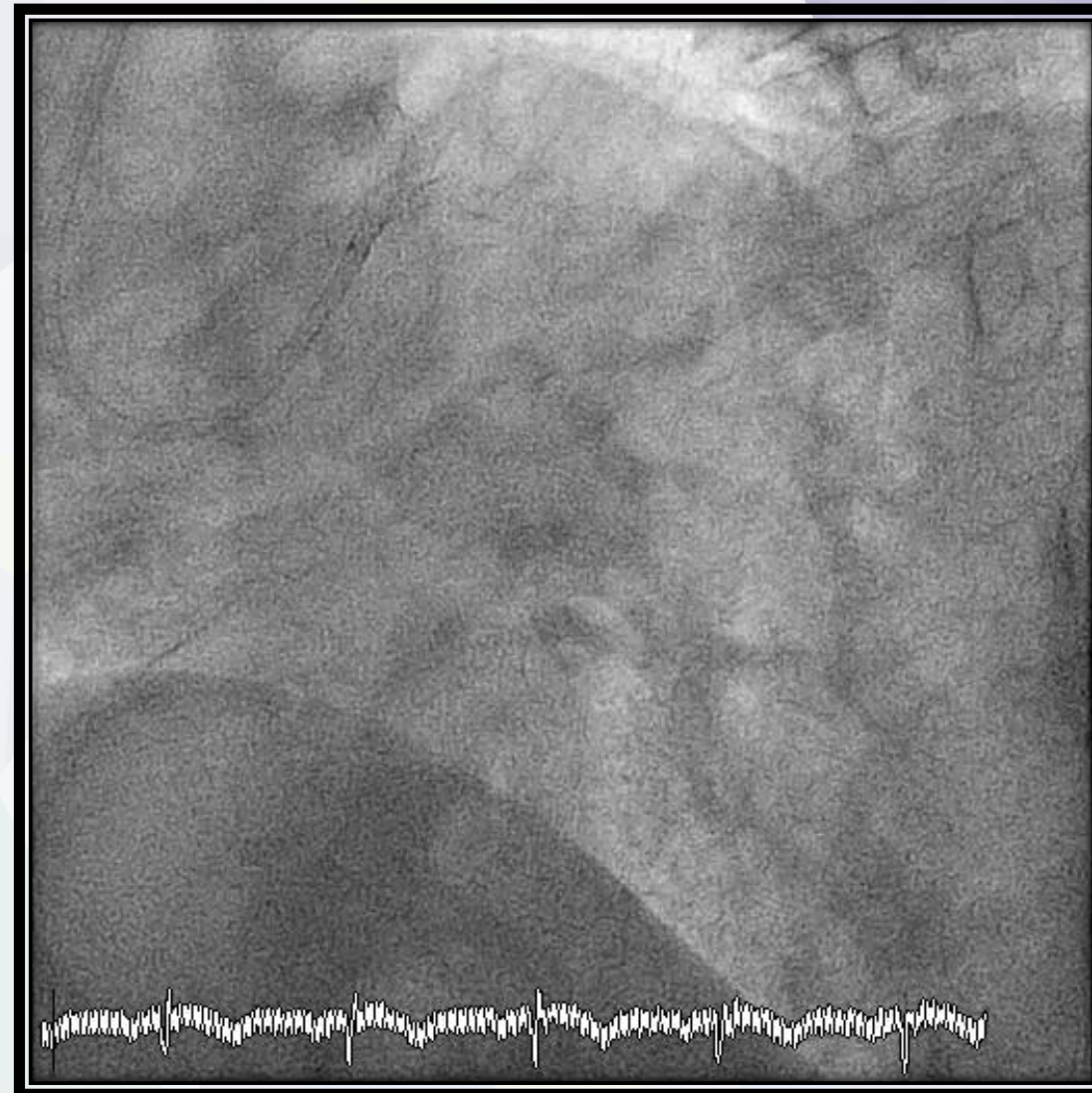
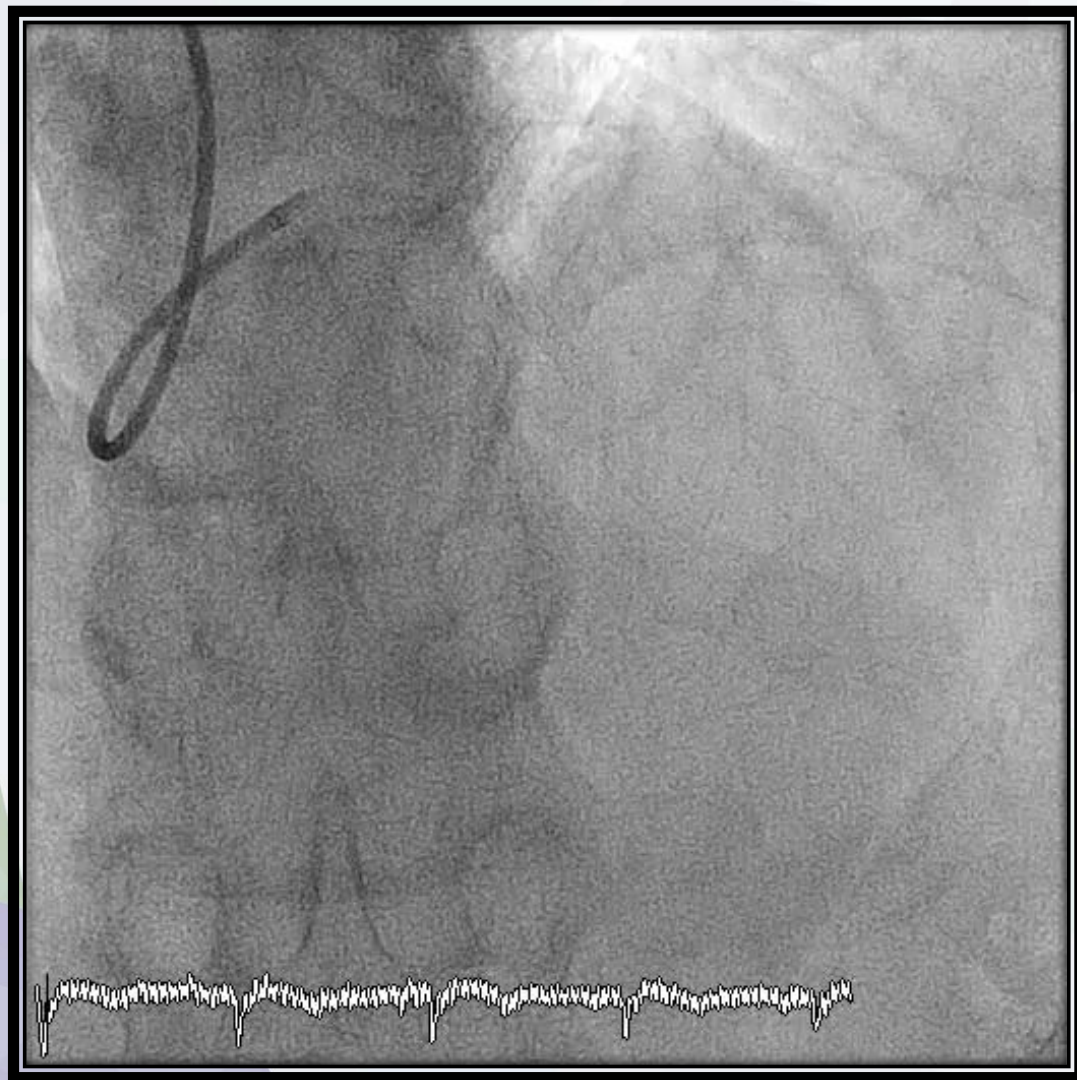
Kissing 3.0 /38 mm y 3.5/20 mm

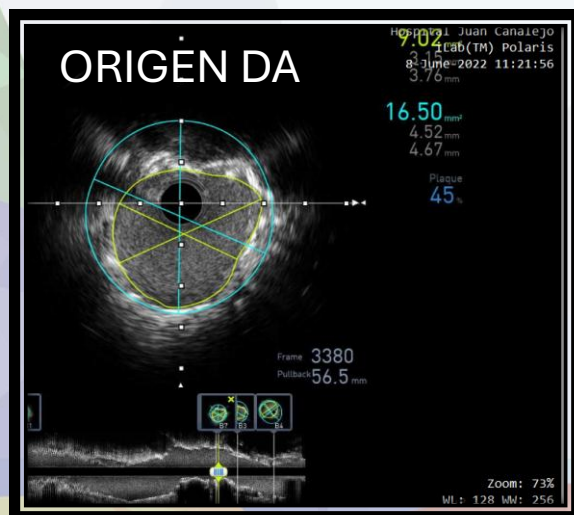
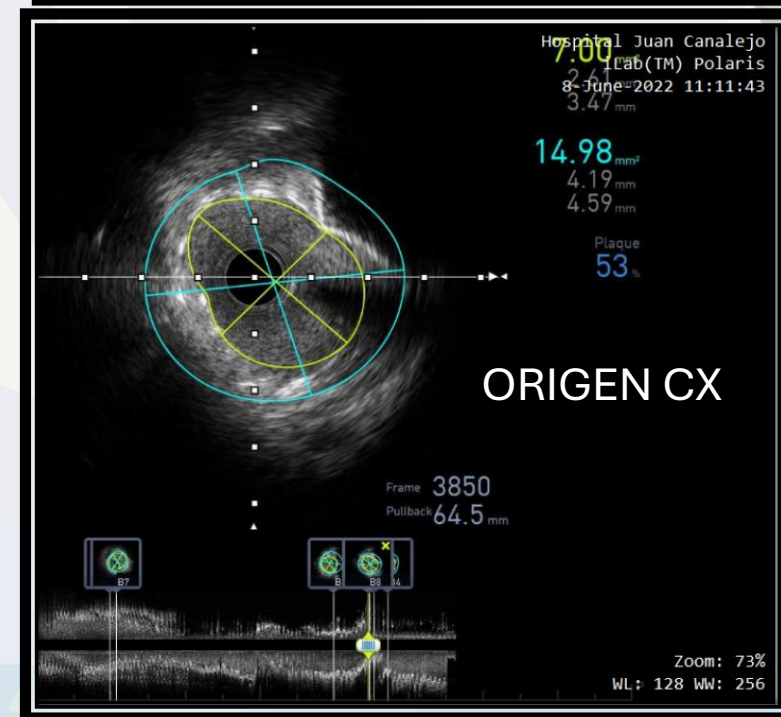
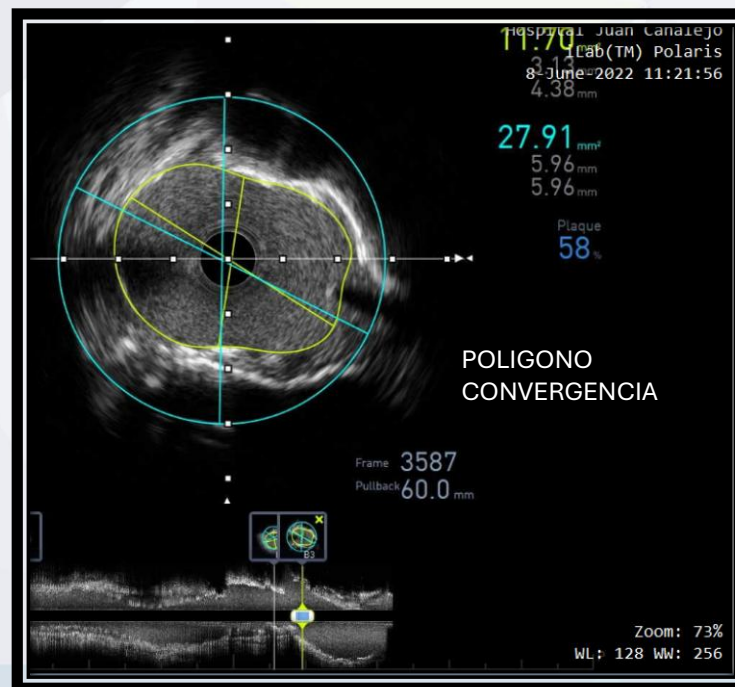
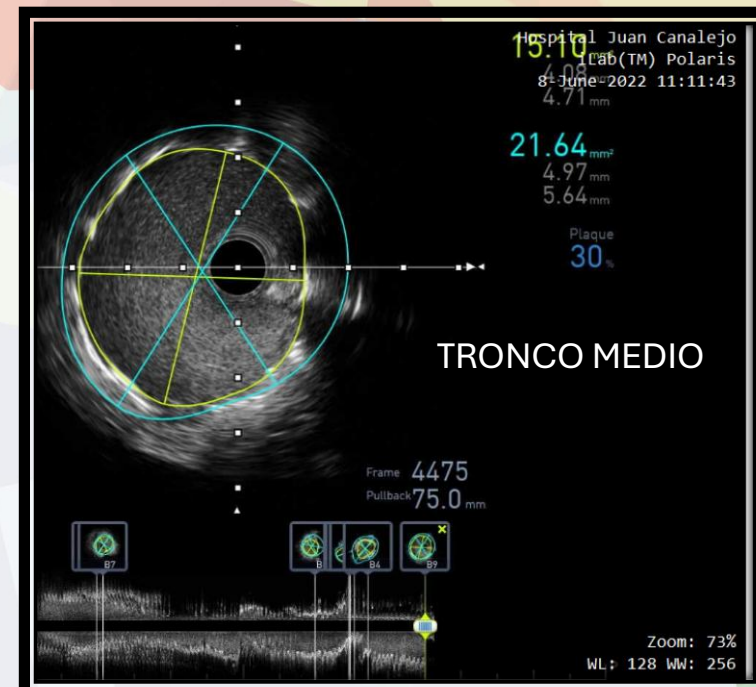
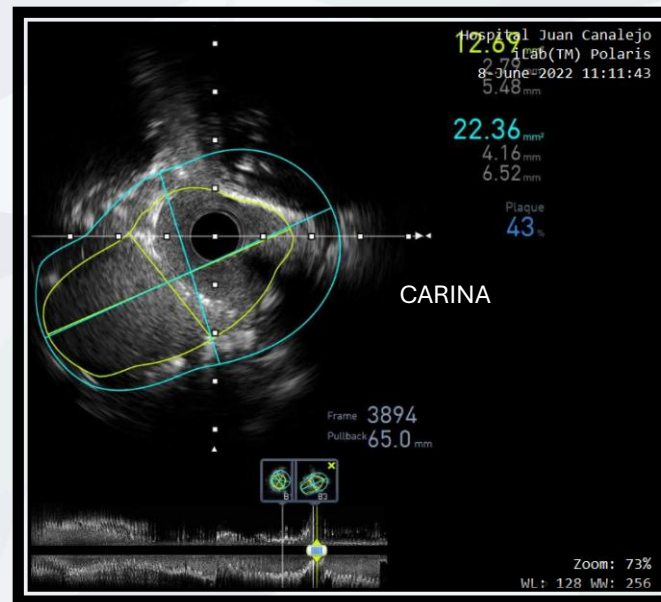
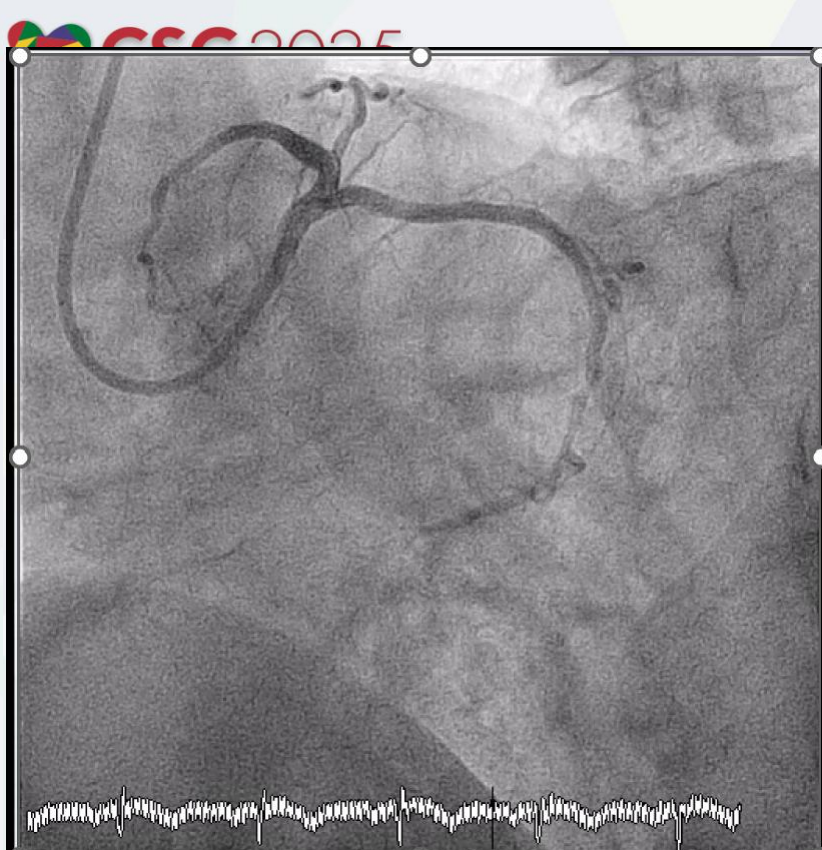


RE POT 4.0/15 mm

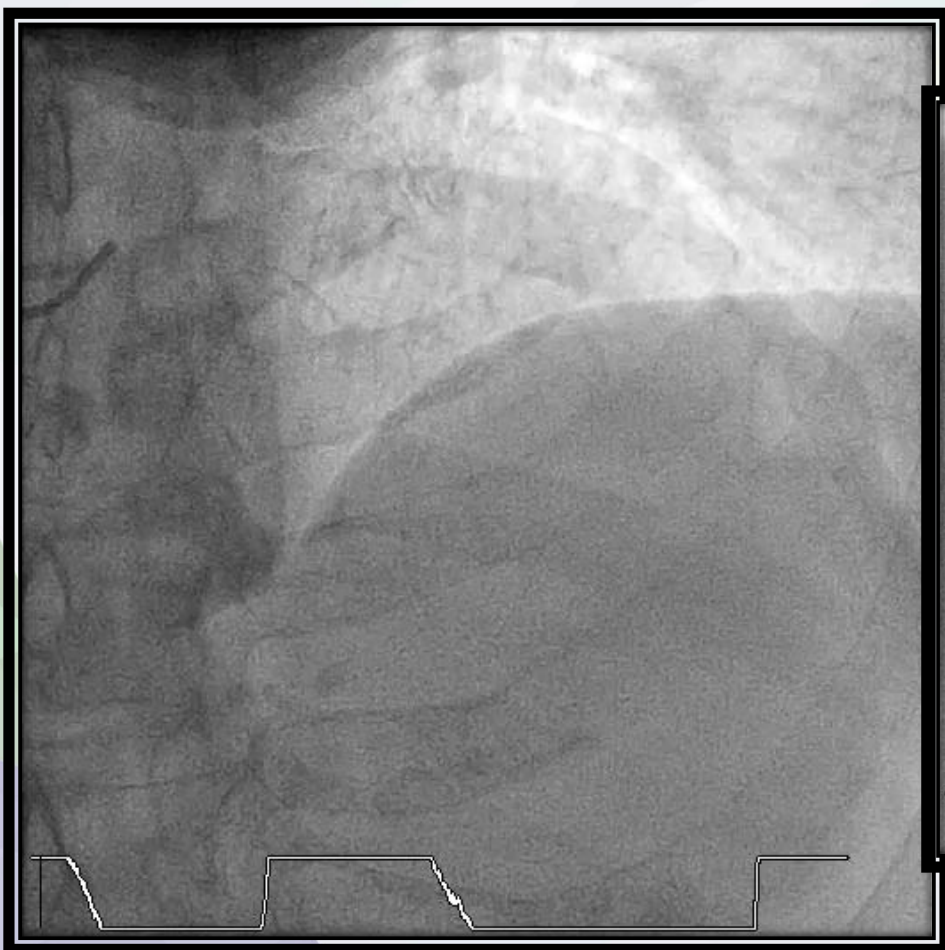


“T STENTING”

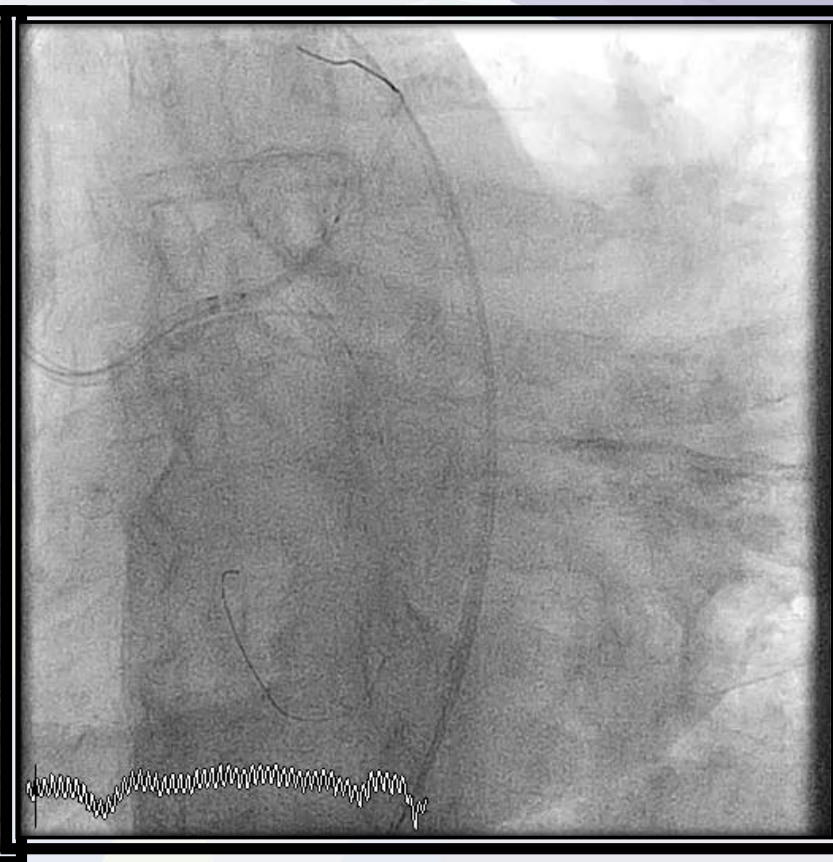
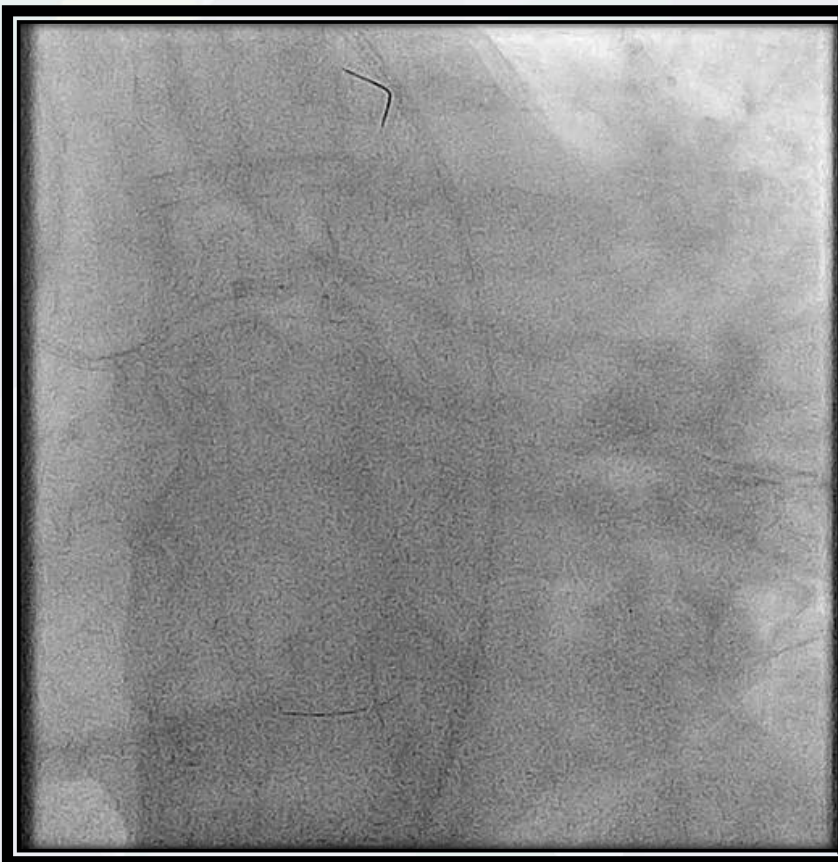
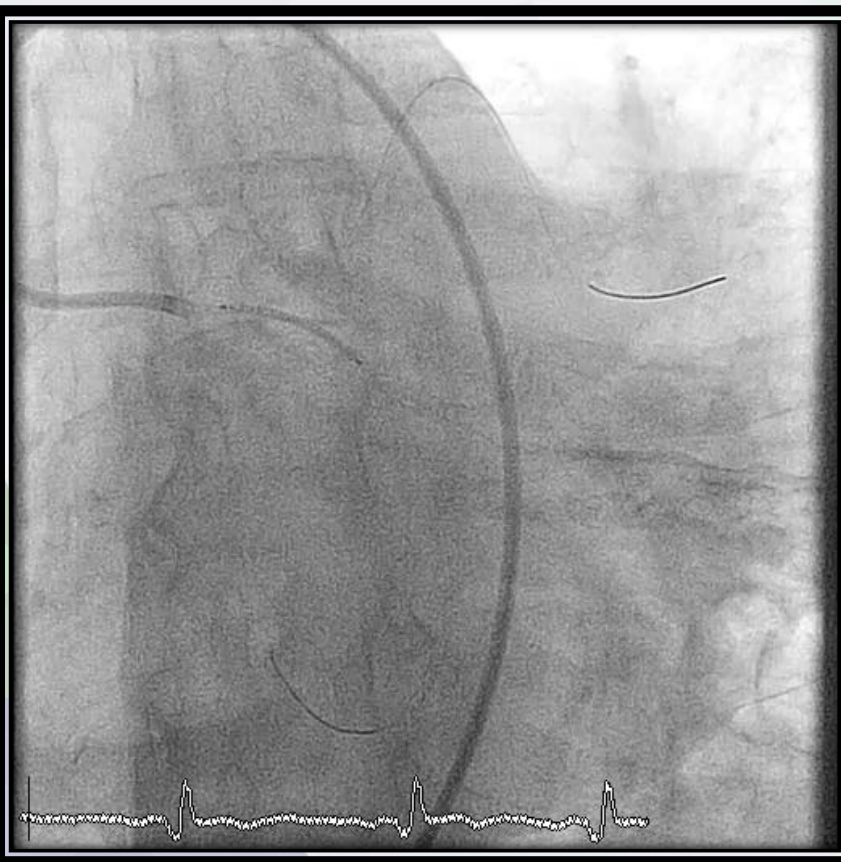




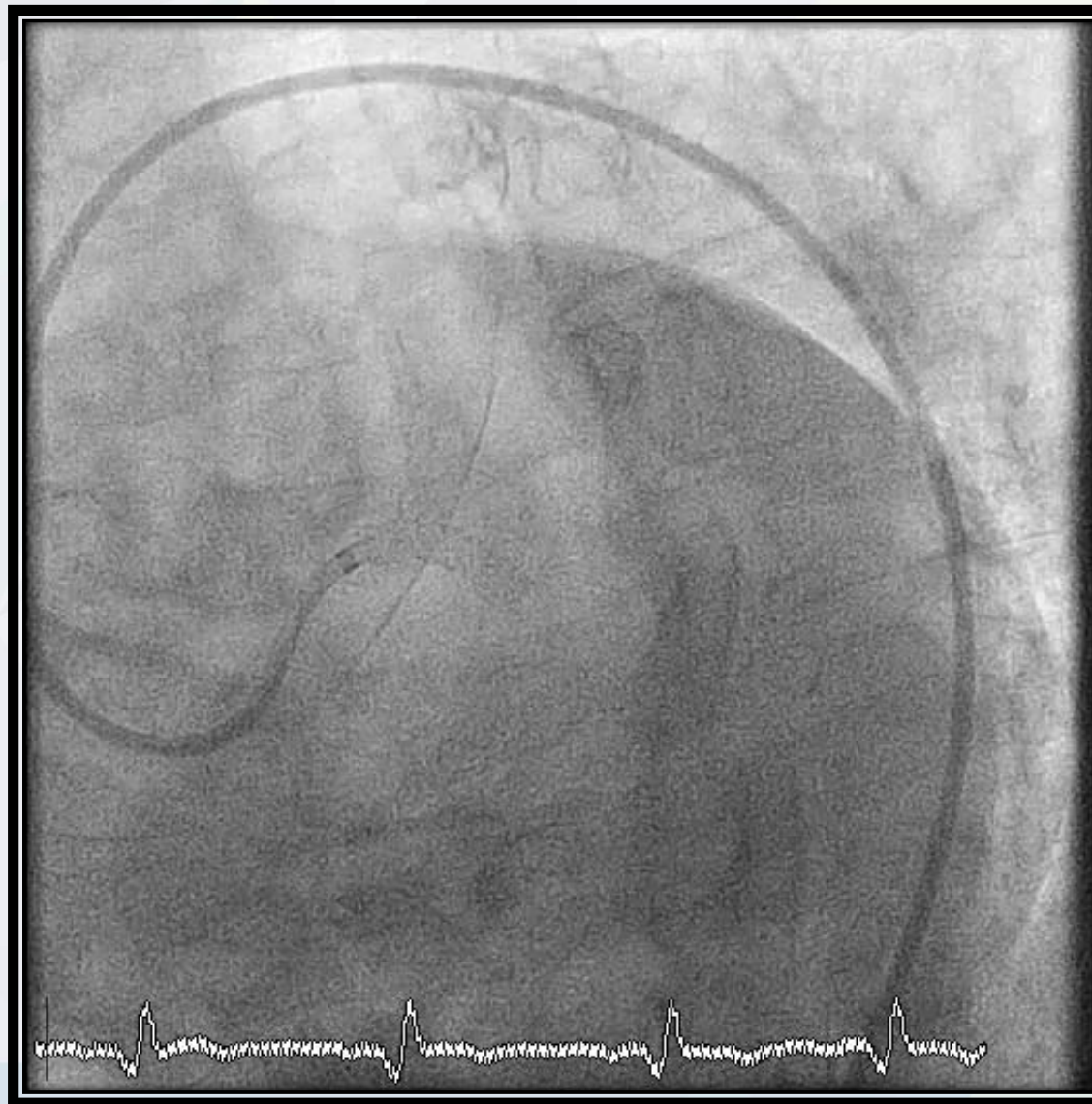
BIFURCACION 1-1-1 PS HACIA CX



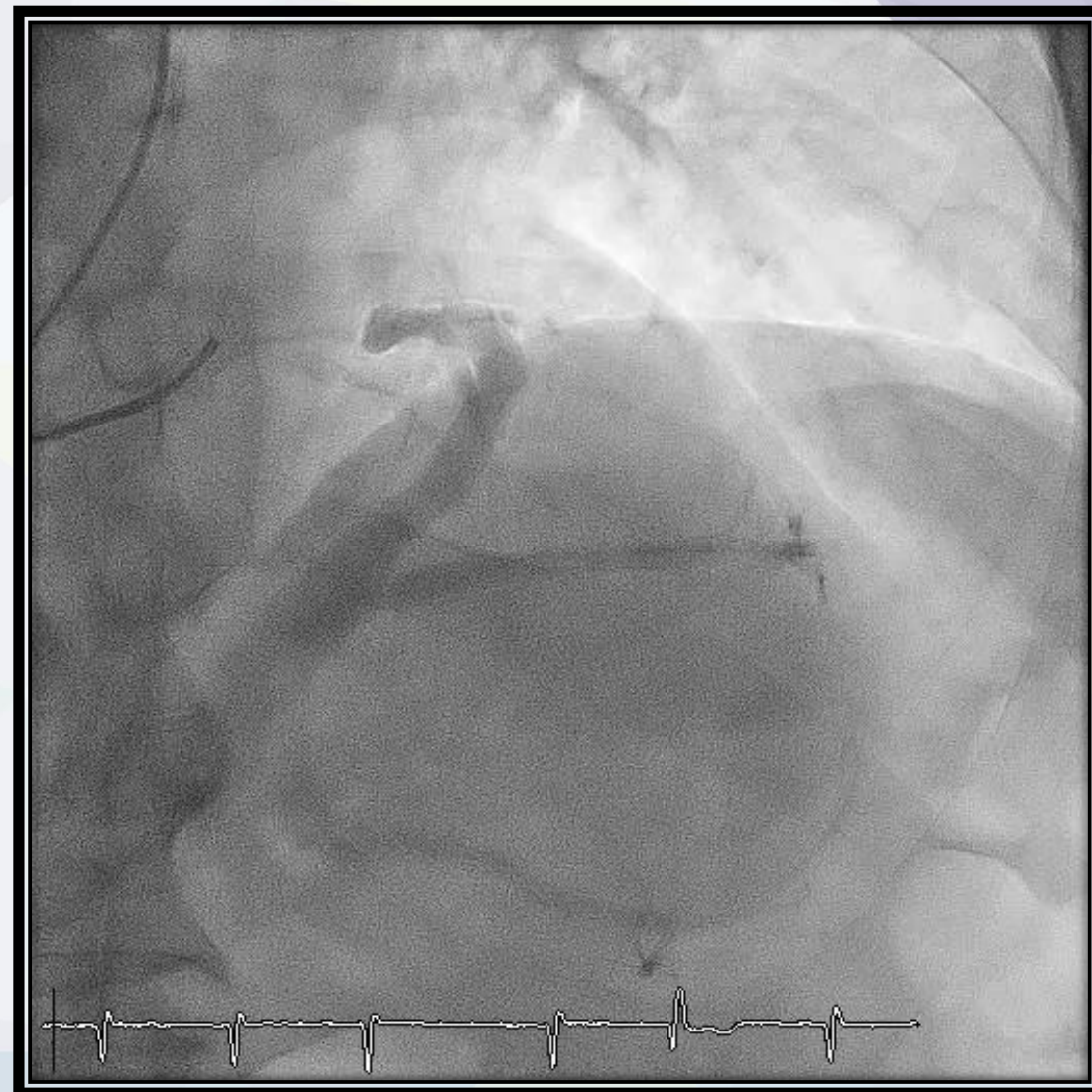
BIFURCACION 1-1-1 PS HACIA CX



BIFURCACION 1-1-1 PS HACIA CX



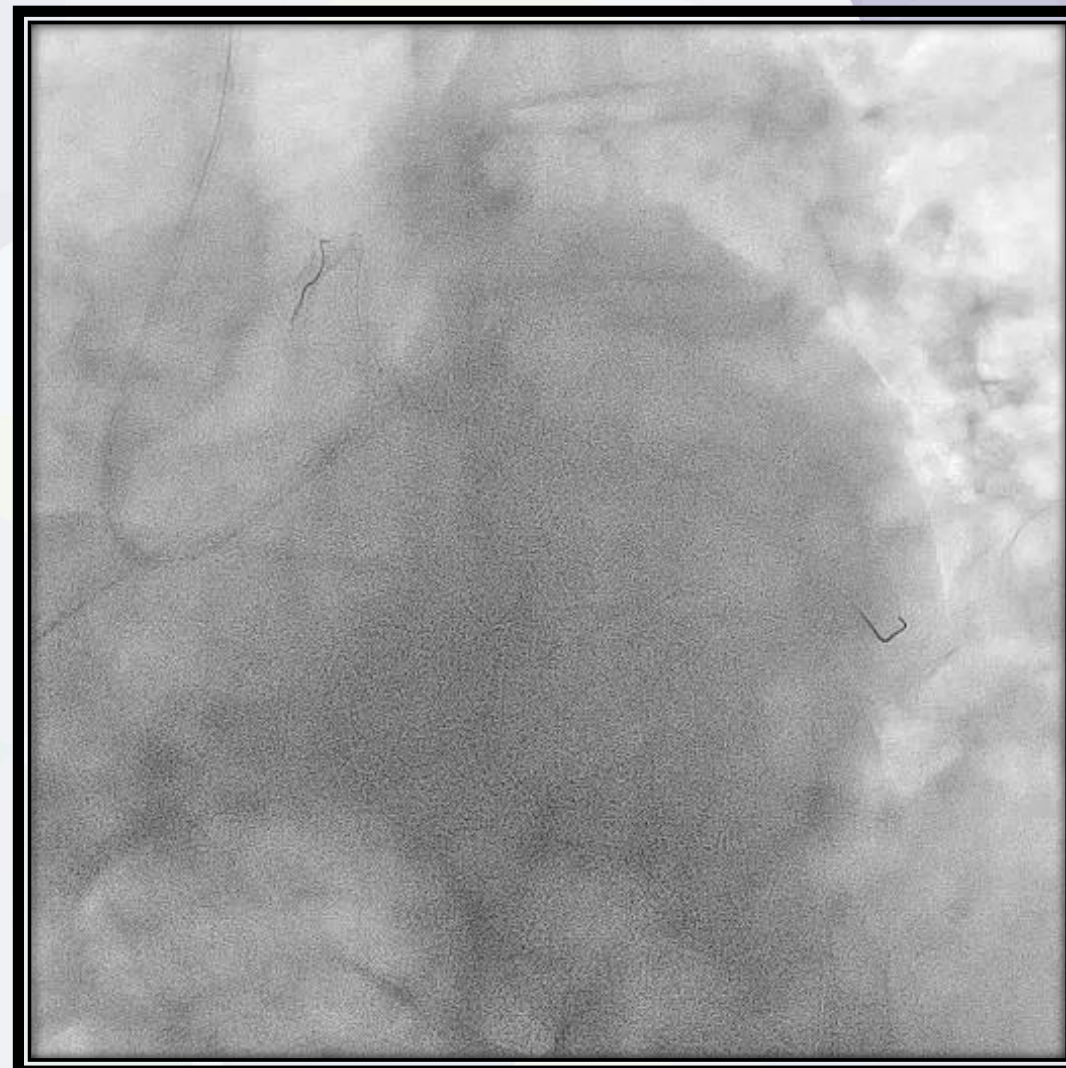
BIFURCACION 1-0-0



BIFURCACION 1-0-0



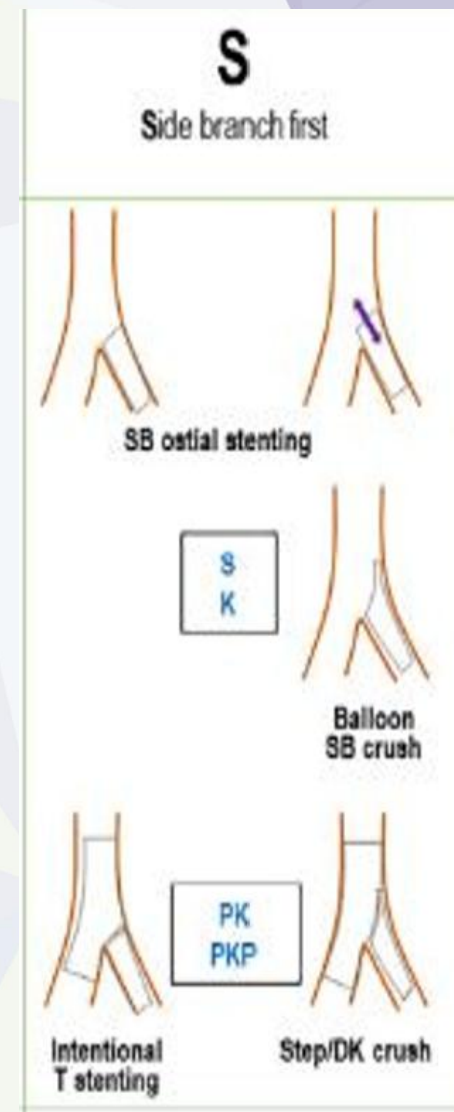
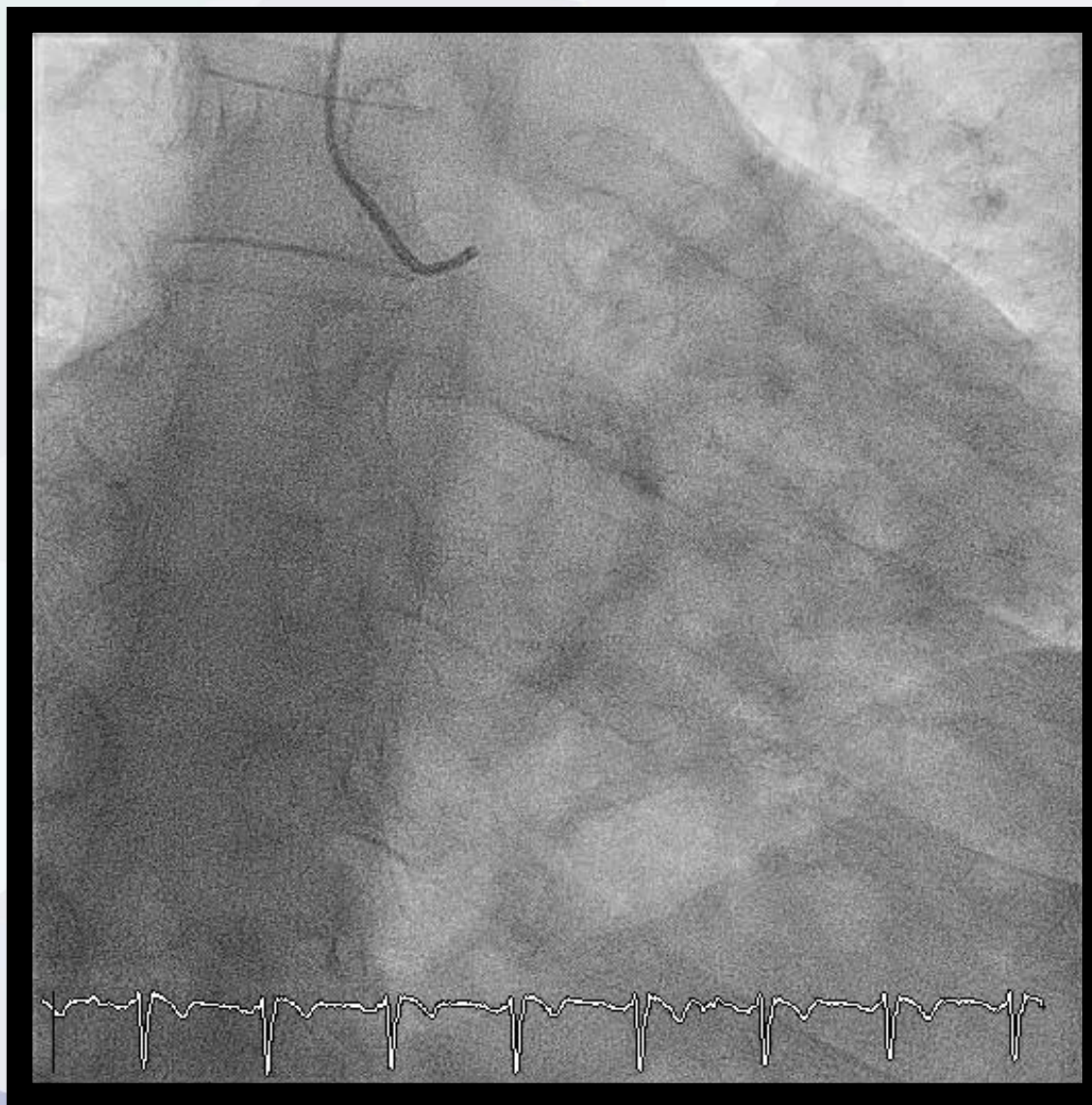
BIFURCACION 1-0-0



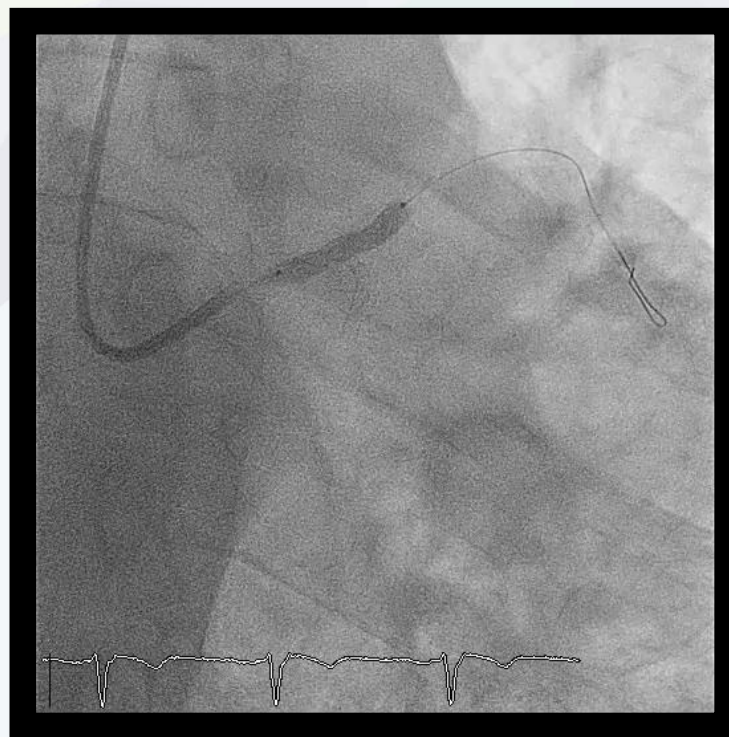
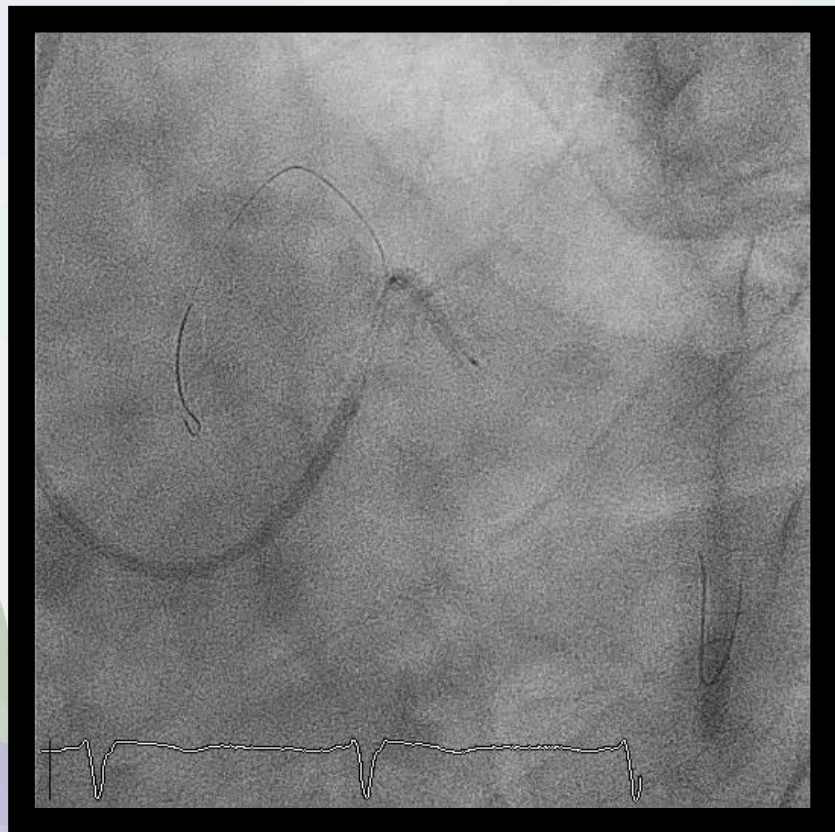
BIFURCACION 1-0-0



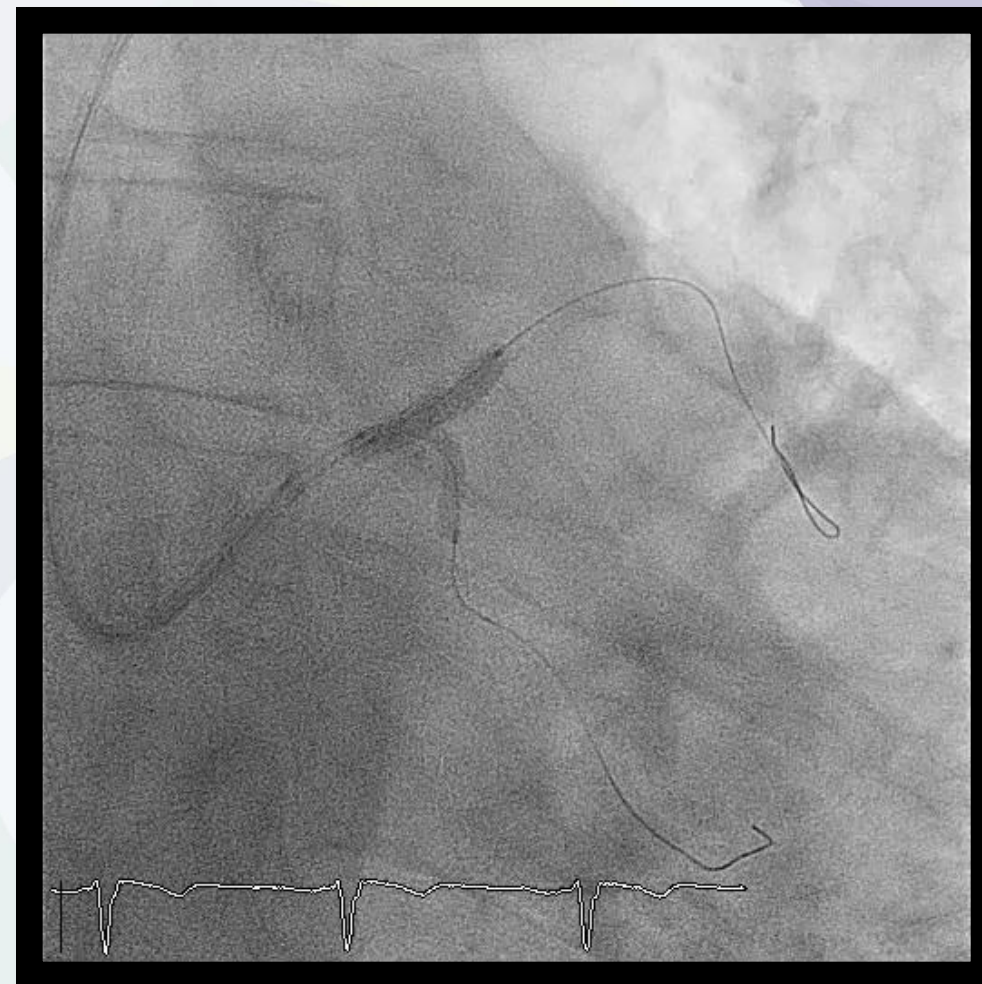
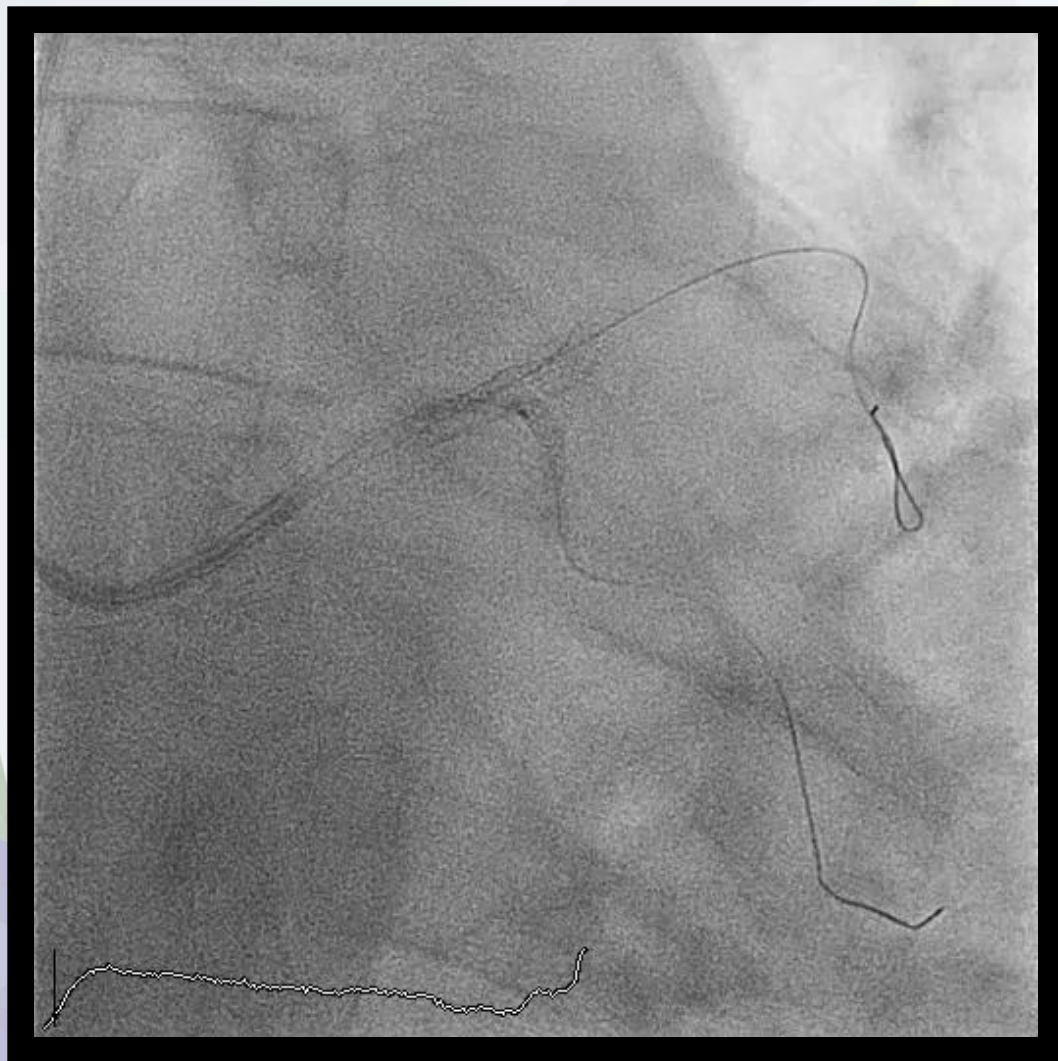
BIFURCACION 1-0-1 T “SIDE FIRST”



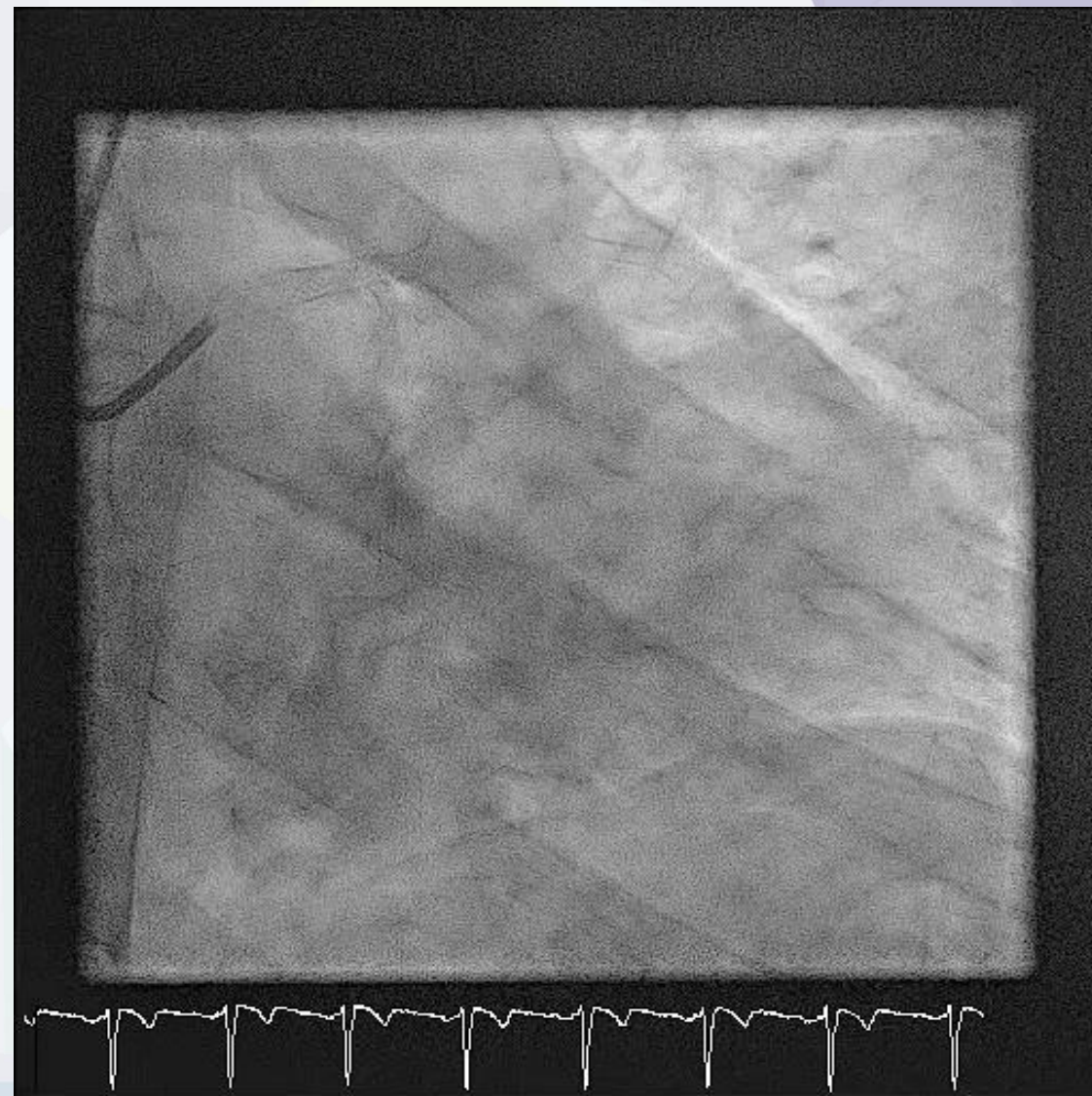
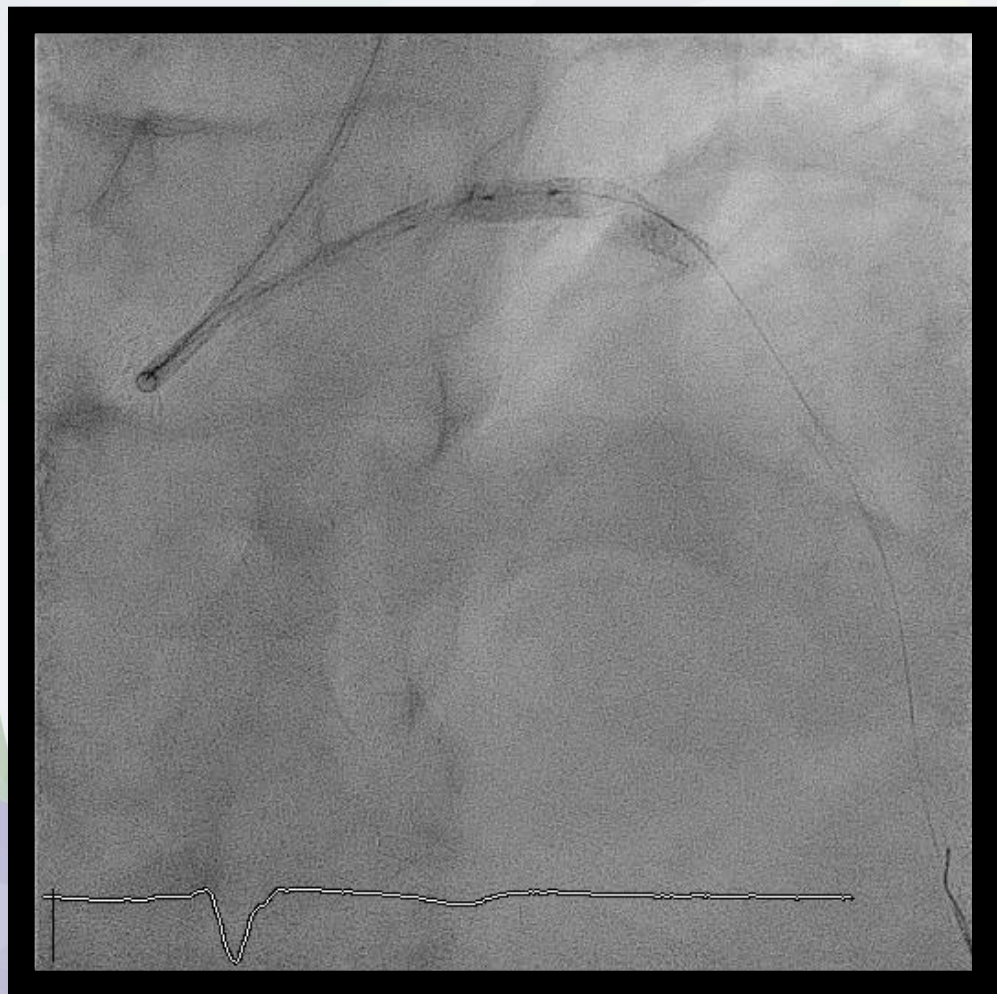
BIFURCACION 1-0-1 T “SIDE FIRST”



BIFURCACION 1-0-1 T “SIDE FIRST”



BIFURCACION 1-0-1 T “SIDE FIRST”



CULOTTE, DK CULOTTE, DK MINI CULOTTE

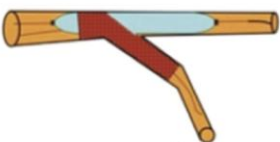
1. Wire both branches and predilate if needed



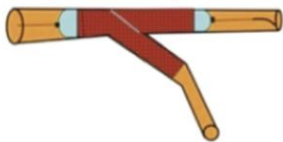
2. Leave the wire in the straighter branch (MB) and deploy a stent in the more angulated branch (SB)



3. Rewire the unstented branch and dilate the stent struts to unjail the branch (MB)



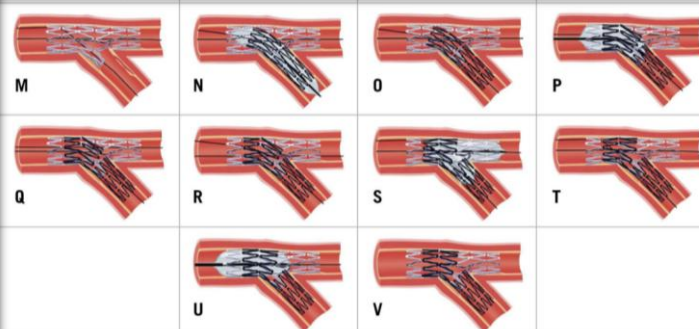
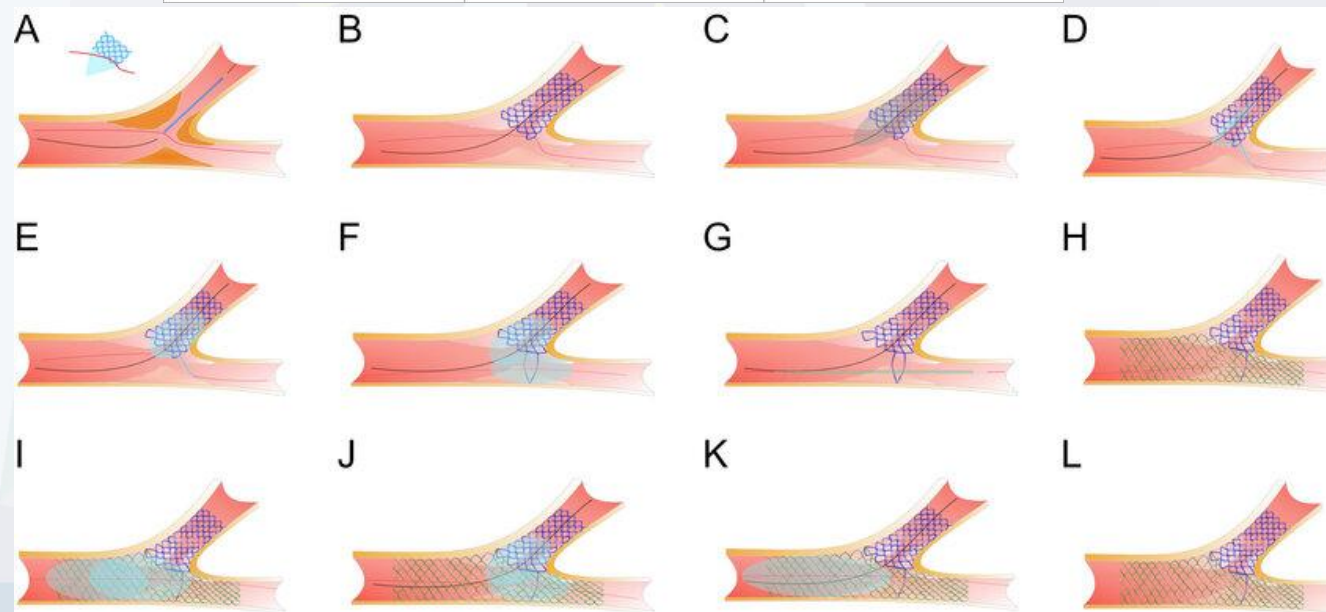
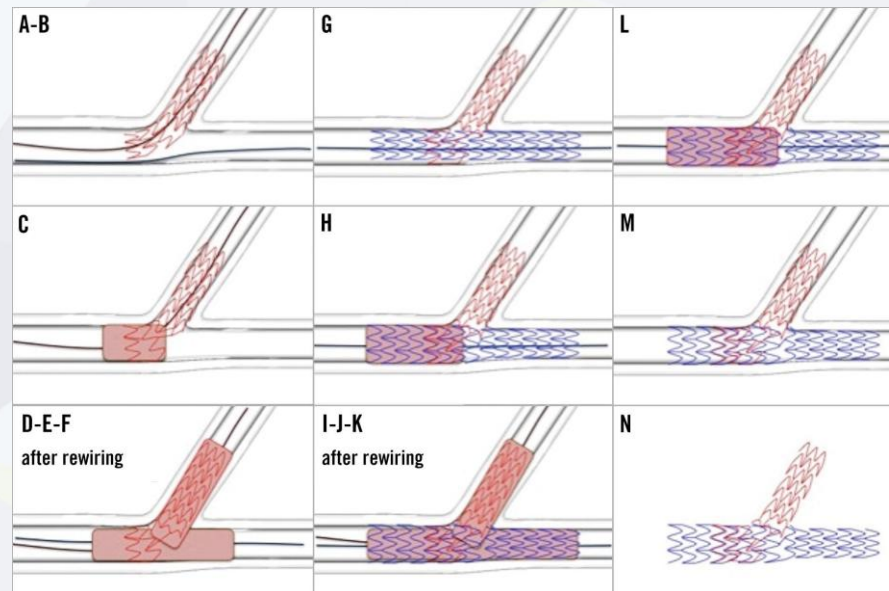
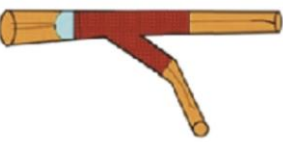
4. Place a second stent into the unstented branch (MB) and expand the stent leaving some proximal overlap



5. Recross the 2nd stent's (MB) struts into the 1st stent (SB) with a wire and perform kissing balloon inflation



6. Perform the final non-compliant proximal balloon dilation to ensure proper stent apposition and alignment of the two proximal stent layers



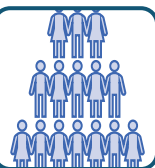


CLINICAL RESEARCH

Interventional Cardiology

Comparison of Double Kissing Crush Versus Culotte Stenting for Unprotected Distal Left Main Bifurcation Lesions

Results From a Multicenter, Randomized, Prospective DKCRUSH-III Study



419 pacientes
7 CENTROS ASIATICOS
2007-2009



LESIONES TCI DISTAL NO PROTEGIDO



1° MACE A 12 MESES:
Muerte cardiaca, IAM, TVR
2° REESTENOSIS
ANGIOGRAFICA 8 MESES
END POINT DE SEGURIDAD
TROMBOSIS STENT

EVENTO	CULOTTE	DK CRUSH	
	n=209	n=210	P
OBJETIVO 1°	16.3%	6.2%	<0.05
TVR	11.0%	4.3%	<0.05
TROMBOSIS STENT	1.0%	0.0%	0.248

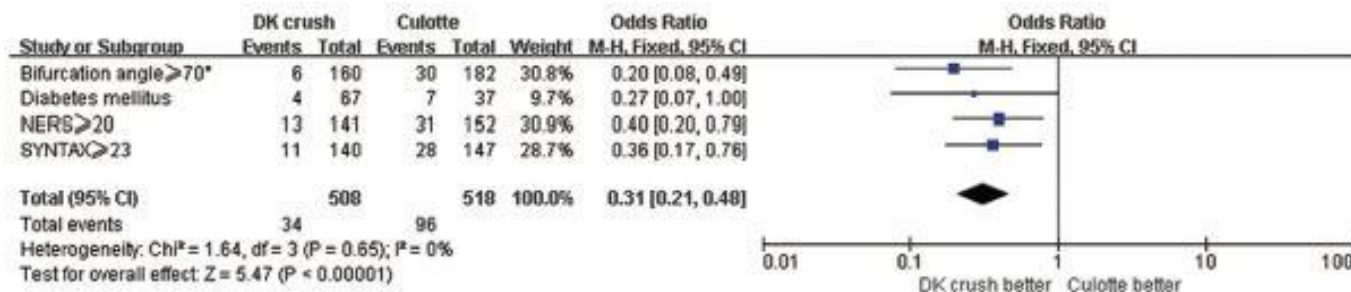


Figure 6 Forest Plots of 1-Year MACE Rate in Pre-Specified Subgroups

Among patients with distal bifurcation angle $\geq 70^\circ$, NERS (New Risk Stratification) score ≥ 20 , and SYNTAX (Synergy between Percutaneous Coronary Intervention with Taxus and Cardiac Surgery) ≥ 23 , the incidence of the composite major adverse cardiac events (MACE) (3.8%, 9.2%, and 7.1%) in the double kissing (DK) group was significantly different to 16.5% ($p < 0.001$), 20.4% ($p = 0.014$), and 18.9% ($p = 0.006$) in the Culotte group, respectively. CI = confidence interval; MH = Mantel-Haenszel.

European Bifurcation Club white paper on stenting techniques for patients with bifurcated coronary artery lesions

	Favorable settings	Specific issues
One-stent techniques		
Provisional	Any non-complex bifurcation lesion Complex bifurcation lesions provided that risk of SB occlusion or difficulty in its bail-out management have been ruled out	SB occlusion risk
Inverted provisional	Medina 0,0,1 lesion of a bifurcation with very large SB like ostial left circumflex lesion or ostial diagonal lesion	Distal MV occlusion risk Distal MV patency is dependent on the stent's side-cell Distal MV integrity (absence of dissections) should be carefully ascertained
Two-stent techniques		
T/TAP stenting	Bail-out management of any SB in the course of provisional Complex bifurcations without very acute angle Complex bifurcations with large and diseased SB (in that case, inverted technique advised)	Meticulous attention to SB stent implantation is critical to avoid long protrusion or SB ostium uncoverage
Culotte stenting	Bail-out management of large-sized SB in the course of provisional Complex bifurcations with SB size comparable with distal MV size	Multiple steps required Double stent layers in the proximal MV
DK-crush	Complex bifurcations, with extensive side-branch disease and/or anticipated difficulty in re-accessing an important SB	Multiple steps required So far, efficacy proven only when practiced by operators with high experience with the technique Triple stent layers in the lateral wall of proximal MV

Abbreviations: MV, main vessel; SB, side branch.

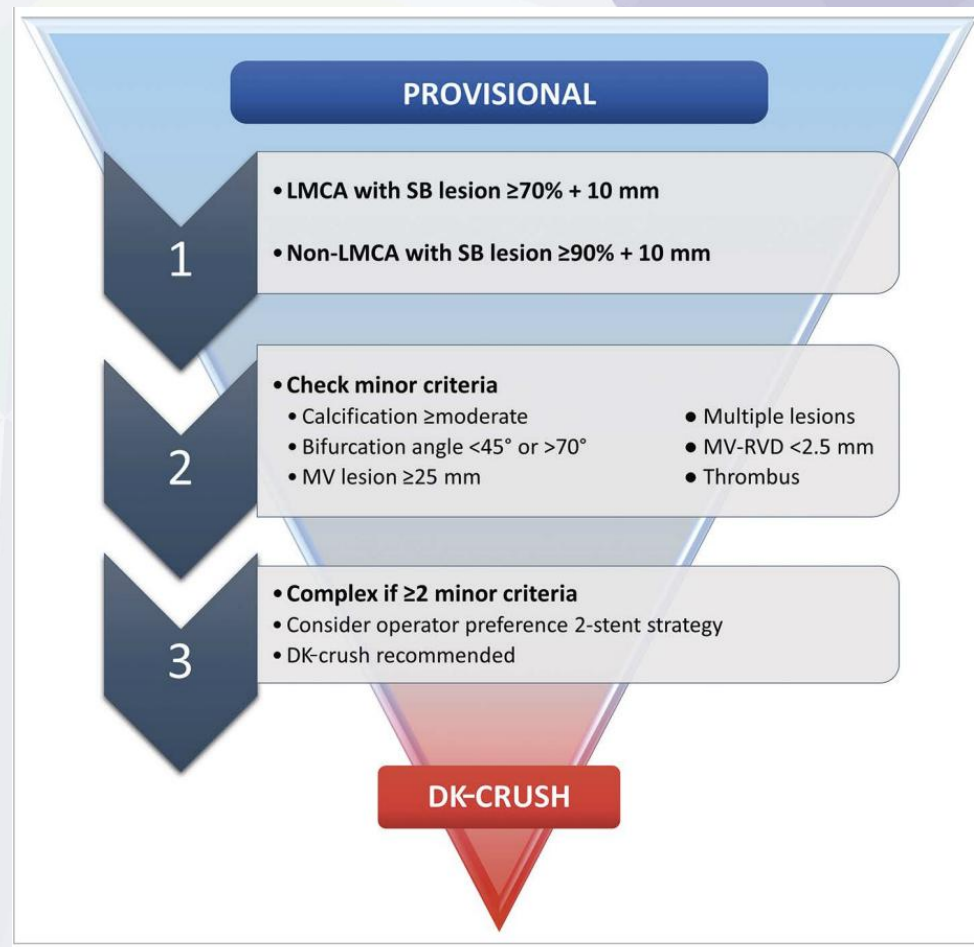
¿ENTONCES...2 MEJOR QUE 1?

BIFURCACIONES VERDADERAS (1-1-1,0-1-1)
BIFURCACIONES COMPLEJAS
BIFURCACION TCI DISTAL
LESION RAMA >10 MM

**MEJOR
ESTRATEGIA
INICIAL DE
DOS STENTS**

**REDUCE TLR, E
IAM
RELACIONADO
CON EL VASO
TRATADO**

**EVIDENCIA
ACTUAL
SUGIERE EN
TCI MEJOR
DKCRUSH QUE
CULOTTE**



EXPERT REVIEW

DOI: 10.4244/EIJ-D-18-00357

Percutaneous coronary intervention in left main coronary artery disease: the 13th consensus document from the European Bifurcation Club

Francesco Burzotta^{1*}, MD, PhD; Jens Flensted Lassen², MD, PhD; Adrian P. Banning³, MD, PhD; Thierry Lefèvre⁴, MD; David Hildick-Smith⁵, MD; Alaide Chieffo⁶, MD; Olivier Darremont⁷, MD; Manuel Pan⁸, MD; Yiannis S. Chatzizisis⁹, MD, PhD; Remo Albiero¹⁰, MD; Yves Louvard⁴, MD; Goran Stankovic¹¹, MD, PhD

REVIEW ARTICLE | Originally Published 19 November 2024 | 

 Check for updates

Contemporary State-of-the-Art PCI of Left Main Coronary Artery Disease

Seong-Bong Wee, MD, Jung-Min Ahn, MD , Do-Yoon Kang, MD , Seung-Jung Park, MD , and Duk-Woo Park, MD  | [AUTHOR](#)

[INFO & AFFILIATIONS](#)

Circulation: Cardiovascular Interventions • Volume 17, Number 11 • <https://doi.org/10.1161/CIRCINTERVENTIONS.124.014026>

As a final remark, the optimal treatment of patients with LM trifurcations is as yet undefined. However, as a general approach, the EBC suggests conducting PCI procedures with the aim of limiting the amount of stent metal implanted.

NO HAY UN ABORDAJE UNICO Y
UNIFORME EN TODAS LAS LESIONES
DEL TRONCO COMUN IZQUIERDO

¿UN STENT?
¿DOS STENTS SISTEMÁTICAMENTE?

...DEPENDE

[illegible]

