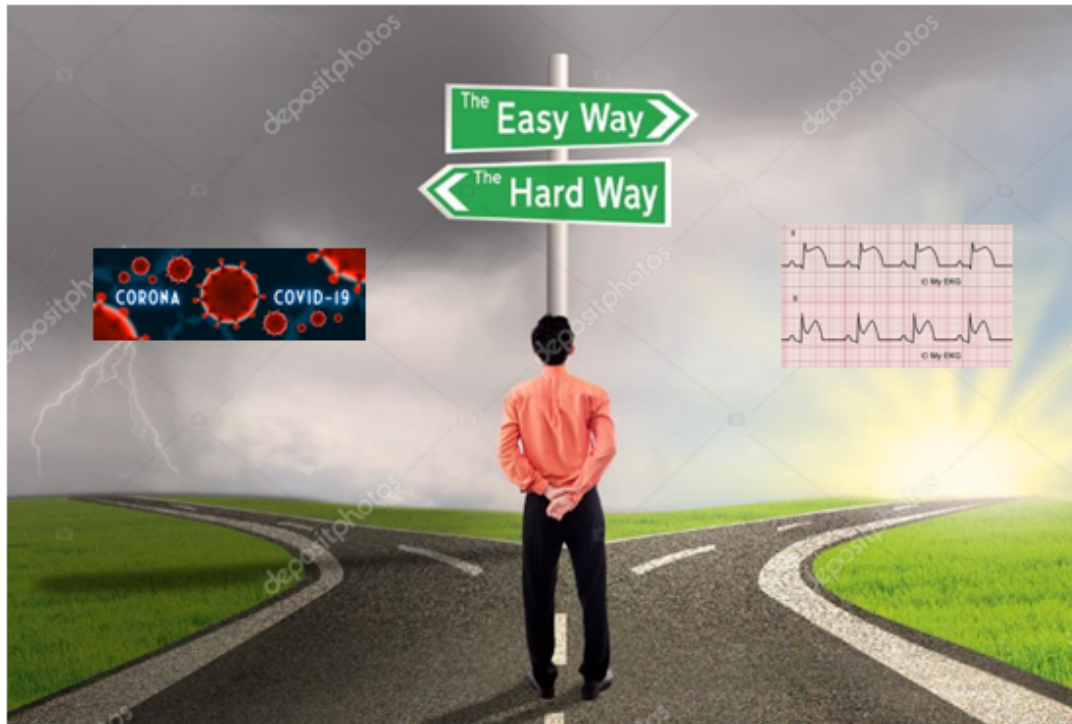


# Reunião HCI Dezembro 2020

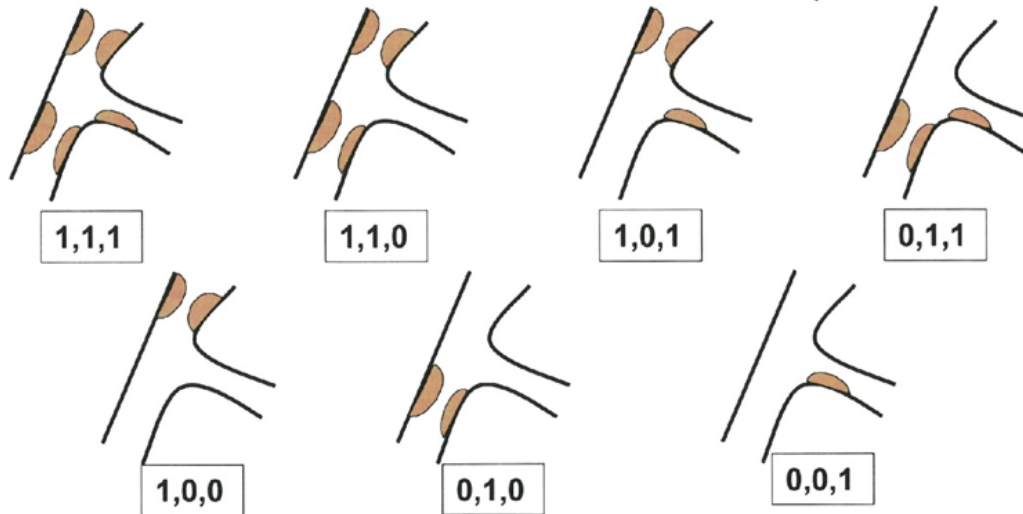
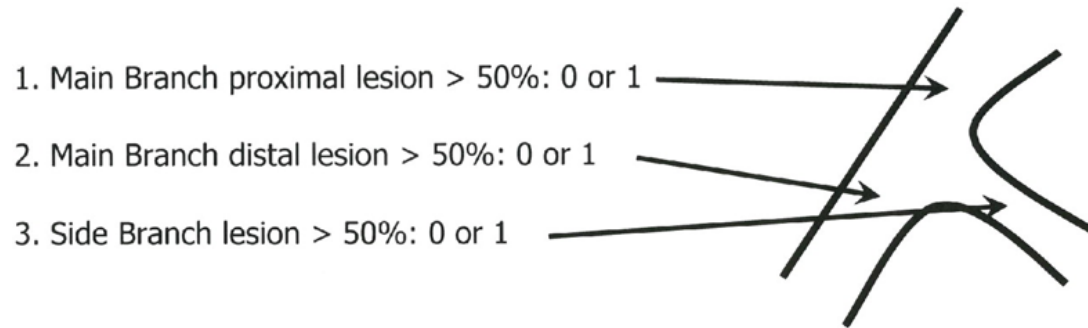
## BIFURCAÇÃO



Renato Sanchez Antonio, MD

VERDADEIRAS: envolvimento dos ramos principal e lateral de forma significativa

FALSAS: envolvimento significativo apenas do ramo principal ou lateral



POT -> SB -> rePOT



EuroIntervention

**Title:** Benefit of a new provisional stenting strategy: the re-Proximal Optimizing Technique. *The rePOT clinical study.*

**Authors:** François Dérimay, M.D; Gérard Finet, M.D, PhD; Géraud Souteyrand, M.D, PhD; Luc Maillard, M.D, PhD; Adel Aminian, M.D; Benoit Lattuca, M.D; Guillaume Cayla, M.D, PhD; Guillaume Cellier, M.D; Pascal Motreff, M.D, PhD; Gilles Rioufol, M.D, PhD

Renato Sanchez Antonio, MD

# Objetivos

- Técnica de stent provisional para bifurcação coronária sem kissing balloon (KB),
- Associação da técnica de otimização proximal (POT), insuflação lateral do ramo lateral e POT final (rePOT), mostraram excelentes resultados mecânicos em um teste de bancada.
- Estudo procurou utilizar a OCT para quantificar os resultados mecânicos da rePOT *in vivo* em uma grande amostra de pacientes com bifurcações coronárias complexas.

# Métodos e Resultados

- 106 pacientes com bifurcações coronarianas foram incluídos em um registro prospectivo multicêntrico (TCE, 40,6%; bifurcação verdadeira de Medina, 39,6%).
- Três séries de OCT:
- No início do estudo
- Logo após o implante do stent
- Após a sequência completa do rePOT
- > Quantificando a aposição global, a obstrução do ramo lateral (SBO) e vários critérios

**Table 1: Baseline patient characteristics.**

		n=106
Age (years)		65.2±11.0
Male gender		80(75.5)
→	Diabetes mellitus	30(28.3)
	Dyslipidemia	50(47.2)
	Hypertension	57(53.8)
	Current smoker	30(28.3)
	LVEF (%)	56±9
	Clearance (ml/min)	88±30
	NYHA Dyspnea Score >II	44(41.5)
	Angina Score CCS>II	75(70.8)
<b>Indication</b>		
	STEMI	10(9.4)
	NSTEMI	24(22.6)
	unstable angina	11(10.4)
	stable angina	30(28.3)
→	silent ischemia	31(29.2)
<b>Initial TIMI flow score</b>		
	0	11(10.4)
	I	3(2.8)
	II	3(2.8)
→	III	89(84.0)
<b>Status</b>		
	Single-vessel	50(47.2)
	2-vessel	43(40.6)
	3-vessel	13(12.3)
<b>Culprit bifurcation</b>		
	Left Main	43(40.6)
→	LAD/Diagonal	50(47.2)
	Circumflex/Marginal	10(9.4)
	RCA/PLA	3(2.8)

Table 2: Procedural, bifurcation and intervention characteristics.

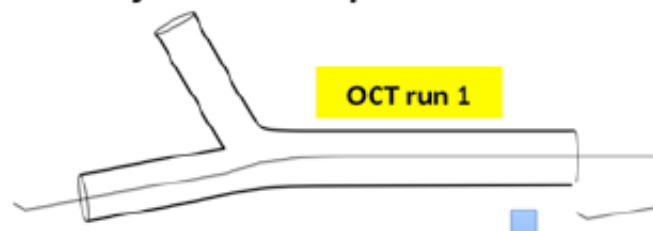
	All (n=106)	LM bifurcation (n=43)	Non-LM bifurcation (n=63)
<b>Medina Classification</b>			
True Bifurcation	42(39.6)	12(28.6)	30(47.6)
1-0-0	10(9.4)	7(16.3)	3(4.8)
1-1-0	22(20.8)	5(11.6)	17(27.0)
0-1-0	26(24.5)	15(34.9)	11(17.5)
0-0-1	6(5.7)	4(9.3)	2(3.2)
1-1-1	31(29.2)	9(20.9)	22(35.0)
0-1-1	8(7.5)	2(4.7)	6(9.5)
1-0-1	3(2.8)	1(2.3)	2(3.2)
Syntax Score	12.3±5.1	15.8±5.4*	10.2±3.4
<b>Bifurcation lesion</b>			
Max. stenosis (%)	80.6±11.9	75.6±13.5*	83.3±9.3
Bifurcation angle (°)	70.2±23.5	85.6±20.7*	60.1±19.6
Bifurcation angle < 70°	51(48.1)	7(16.3)*	44(69.8)
<b>Procedure</b>			
Radial artery	83(78.3)	26(60.5)*	57(90.5)
6F introducer	101(95.3)	39(90.7)	62(98.4)
Fluoroscopy time (min)	14.9±6.6	16.0±7.5	14.2±6.0
Irradiation (mGy/cm <sup>2</sup> )	97495±267960	129322±330415	78930±224793
Contrast without OCT acquisition(ml)	152±69	153±81	152±60
Stent length (mm)	22.8±6.9	22.0±5.7	23.5±7.1
Stent diameter (mm)	3.32±2.47	3.35±0.37 <sup>†</sup>	2.90±0.43
Drug eluting stent	105(99.1)	43(100)	62(98.4)
POT balloon diameter (mm)	3.79±0.59	4.27±0.48 <sup>†</sup>	3.46±0.40
Compliant or semi-compliant POT balloon	80(75.5)	28(65.1)*	52(82.5)
Non-compliant POT balloon	26(24.5)	15(34.9)	11(17.5)
<b>Final result</b>			
Complete rePOT sequence successful	106(100)	43(100)	63(100)
Slow flow (TIMI=II)	3(2.8)	1(2.3)	2(3.2)
Slow flow SB	1(1.0)	0(0)	1(1.6)
Slow flow off STEMI	1(1.0)	0(0)	1(1.6)
SB dissection	1(1.0)	0(0)	1(1.6)
SB stenting	4(3.7)	3(7.0)	1(1.6)
Residual SB stenosis	22.4±13.0	19.6±11.4	24.9±14.2

Table 3: Baseline, post-implantation and post-rePOT OCT data

	All (n=106)	LM bifurcation (n=43)	Non-LM bifurcation (n=63)
<b>Baseline bifurcation characteristics</b>			
D <sub>m</sub> MoV (mm)	3.76±0.69	4.25±0.57 <sup>*</sup>	3.44±0.46
D <sub>m</sub> MB (mm)	2.89±0.54	3.17±0.46 <sup>*</sup>	2.69±0.05
D <sub>m</sub> SB (mm)	2.26±0.62	2.69±0.60 <sup>*</sup>	1.97±0.44
Ellipticity ratio MoV	1.19±0.11	1.22±0.13 <sup>*</sup>	1.16±0.10
Ellipticity ratio MB	1.15±0.11	1.16±0.09	1.15±0.12
Fractal ratio	0.74±0.11	0.73±0.12	0.75±0.11
<b>Stent implantation @ MB reference diameter</b>			
D <sub>m</sub> MoV (mm)	3.75±0.66	4.31±0.43 <sup>*</sup>	3.39±0.51
D <sub>m</sub> stent (mm)	3.10±0.52	3.44±0.51 <sup>*</sup>	2.89±0.39
D <sub>m</sub> SB (mm)	2.20±0.62	2.58±0.60 <sup>*</sup>	1.96±0.5
Delta diameter MoV-stent (mm)	0.65±0.42	0.87±0.41 <sup>*</sup>	0.50±0.36
SAR MoV	0.84±0.09	0.80±0.09 <sup>*</sup>	0.86±0.09
SAR MB	1.08±0.16	1.09±0.17	1.08±0.15
SB Obstruction (%)	44.3±12.9	46.7±13.5	45.1±10.2
Global stent MAP (%)	18.9±13.4	25.0±13.9 <sup>*</sup>	15.1±11.5
SBR	1.03±0.04	1.03±0.07	1.03±0.08
<b>After complete rePOT sequence</b>			
D <sub>m</sub> MoV (mm)	3.90±0.66 <sup>†</sup>	4.42±0.46 <sup>†</sup>	3.54±0.53 <sup>†</sup>
D <sub>m</sub> MB (mm)	3.07±0.52 <sup>†</sup>	3.37±0.50 <sup>††</sup>	2.86±0.41 <sup>†</sup>
D <sub>m</sub> SB (mm)	2.41±0.70 <sup>†</sup>	2.83±0.73 <sup>††</sup>	2.11±0.05 <sup>†</sup>
D <sub>carina</sub> (mm)	3.14±0.57	3.63±0.69 <sup>*</sup>	2.90±0.42
Delta MoV-stent diameter (mm)	0.04±0.12 <sup>†</sup>	0.01±0.09 <sup>††</sup>	0.06±0.13 <sup>†</sup>
SAR MoV	1.04±0.09 <sup>†</sup>	1.05±0.10 <sup>†</sup>	1.04±0.08 <sup>†</sup>
Ellipticity ratio MoV	1.13±0.12 <sup>†</sup>	1.13±0.16	1.12±0.08
Ellipticity ratio MB	1.11±0.08 <sup>†</sup>	1.11±0.08 <sup>†</sup>	1.11±0.08 <sup>†</sup>
SB Obstruction (%)	17.0±14.3 <sup>†</sup>	14.9±10.7 <sup>†</sup>	18.9±18.7 <sup>†</sup>
Global stent MAP (%)	3.2±3.9 <sup>†</sup>	3.4±4.0 <sup>†</sup>	3.0±3.8 <sup>†</sup>
SBR	1.05±0.09 <sup>†</sup>	1.06±0.09 <sup>†</sup>	1.05±0.09 <sup>†</sup>
Carina ratio	1.04±0.15	1.09±0.17 <sup>*</sup>	1.02±0.14
Fractal ratio	0.72±0.10	0.73±0.11	0.72±0.09



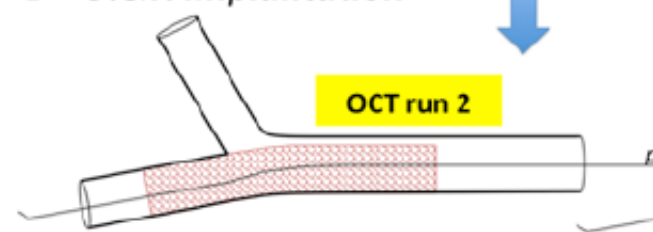
**A - Before stent implantation**



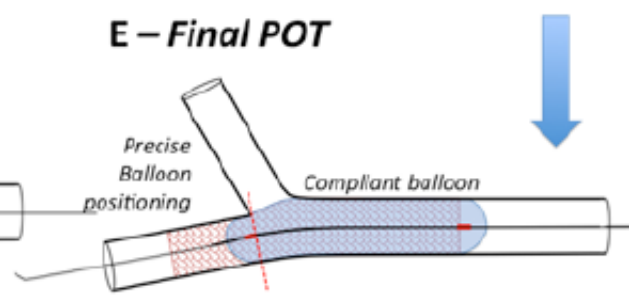
**D - SB inflation**



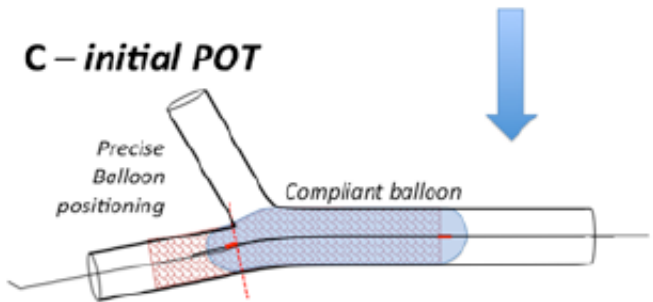
**B - Stent implantation**



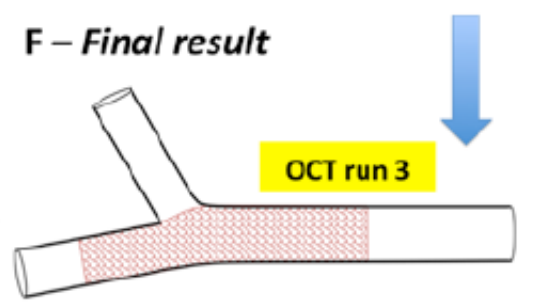
**E - Final POT**



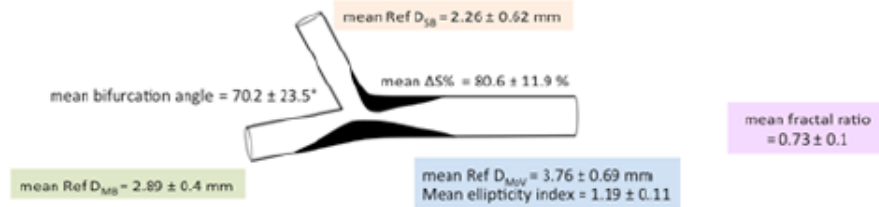
**C - initial POT**



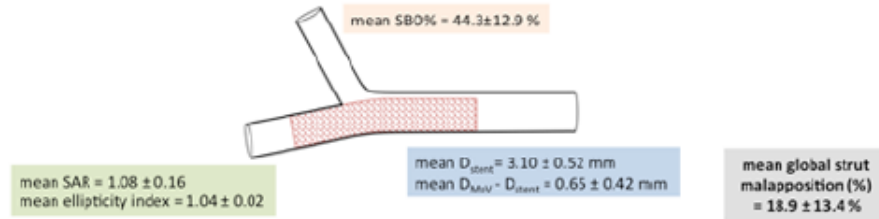
**F - Final result**



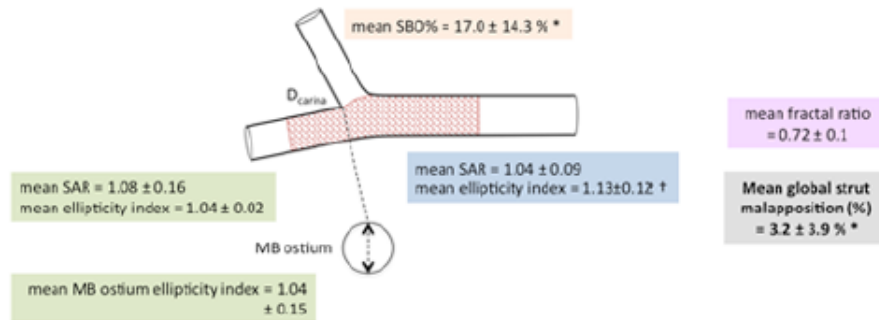
**A Coronary bifurcation at baseline**

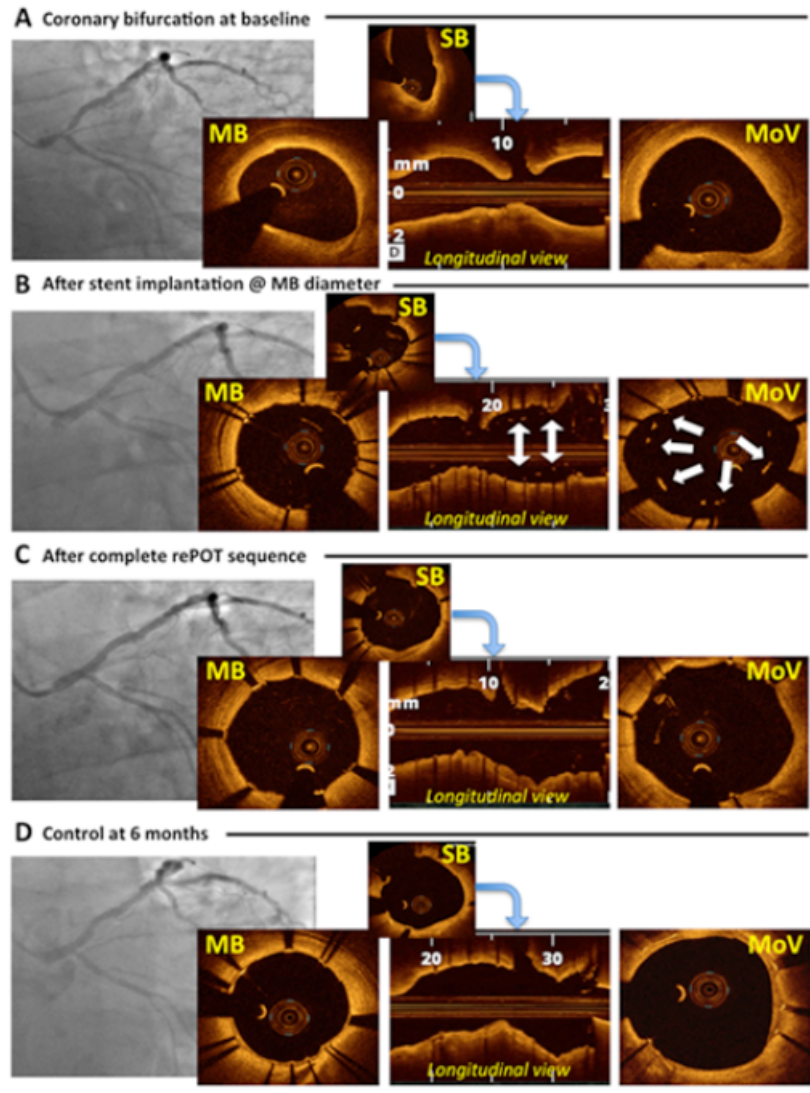


**B Stent implantation at main branch reference diameter**



**C After complete re-POT sequence : initial POT + SB inflation + final POT**





# Métodos e Resultados

- RePOT foi completado sistematicamente e **reduziu significativamente a má aposição global** da haste de  $18,9 \pm 13,4\%$  logo após o implante do stent para  $3,2 \pm 3,9\%$  ( $p < 0,05$ ), SBO residual de  $44,3 \pm 12,9\%$  para  $17,0 \pm 14,3\%$  ( $p < 0,05$ ) e índice de elipticidade de  $1,19 \pm 0,11$  a  $1,13 \pm 0,12$  ( $p < 0,05$ ).
- Seguimento exaustivo de 6 meses encontrou apenas 1 revascularização da lesão alvo do vaso-mãe.

# Percutaneous coronary intervention for the left main stem and other bifurcation lesions: 12<sup>th</sup> consensus document from the European Bifurcation Club



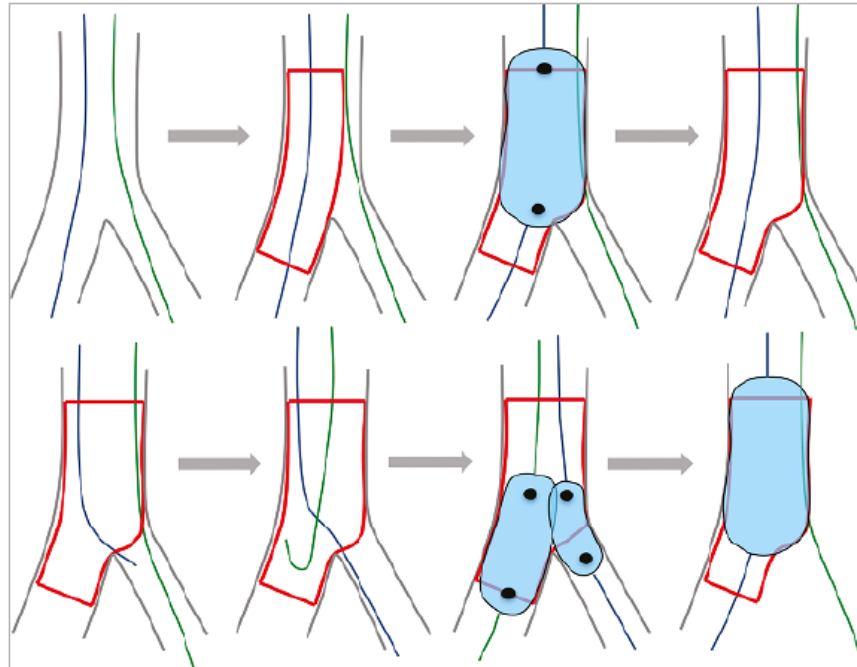
**Jens Flensted Lassen**<sup>1\*</sup>, MD, PhD; Francesco Burzotta<sup>2</sup>, MD; Adrian P. Banning<sup>3</sup>, MD, PhD; Thierry Lefèvre<sup>4</sup>, MD; Olivier Darremont<sup>5</sup>, MD; David Hildick-Smith<sup>6</sup>, MD; Alaide Chieffo<sup>7</sup>, MD; Manuel Pan<sup>8</sup>, MD; Niels Ramsing Holm<sup>9</sup>, MD; Yves Louvard<sup>4</sup>, MD; Goran Stankovic<sup>10</sup>, MD, PhD

*1. Department of Cardiology, The Heart Centre, Rigshospitalet, University of Copenhagen, Copenhagen, Denmark; 2. Institute of Cardiology, Catholic University of the Sacred Heart, Rome, Italy; 3. Cardiovascular Medicine Division, Radcliffe Department of Medicine, John Radcliffe Hospital, Oxford, United Kingdom; 4. Ramsay Générale de Santé - Institut Cardiovasculaire Paris Sud, Hôpital Privé Jacques Cartier, Massy, France; 5. Clinique St. Augustin, Bordeaux, France; 6. Sussex Cardiac Centre, Brighton and Sussex University Hospitals, Brighton, United Kingdom; 7. Interventional Cardiology Unit, San Raffaele Scientific Institute, Milan, Italy; 8. Department of Cardiology, Reina Sofia Hospital, University of Cordoba (IMIBIC), Cordoba, Spain; 9. Department of Cardiology, Aarhus University Hospital, Skejby, Aarhus, Denmark; 10. Department of Cardiology, Clinical Center of Serbia, and Medical Faculty, University of Belgrade, Belgrade, Serbia*

# ABORDAGEM INICIAL

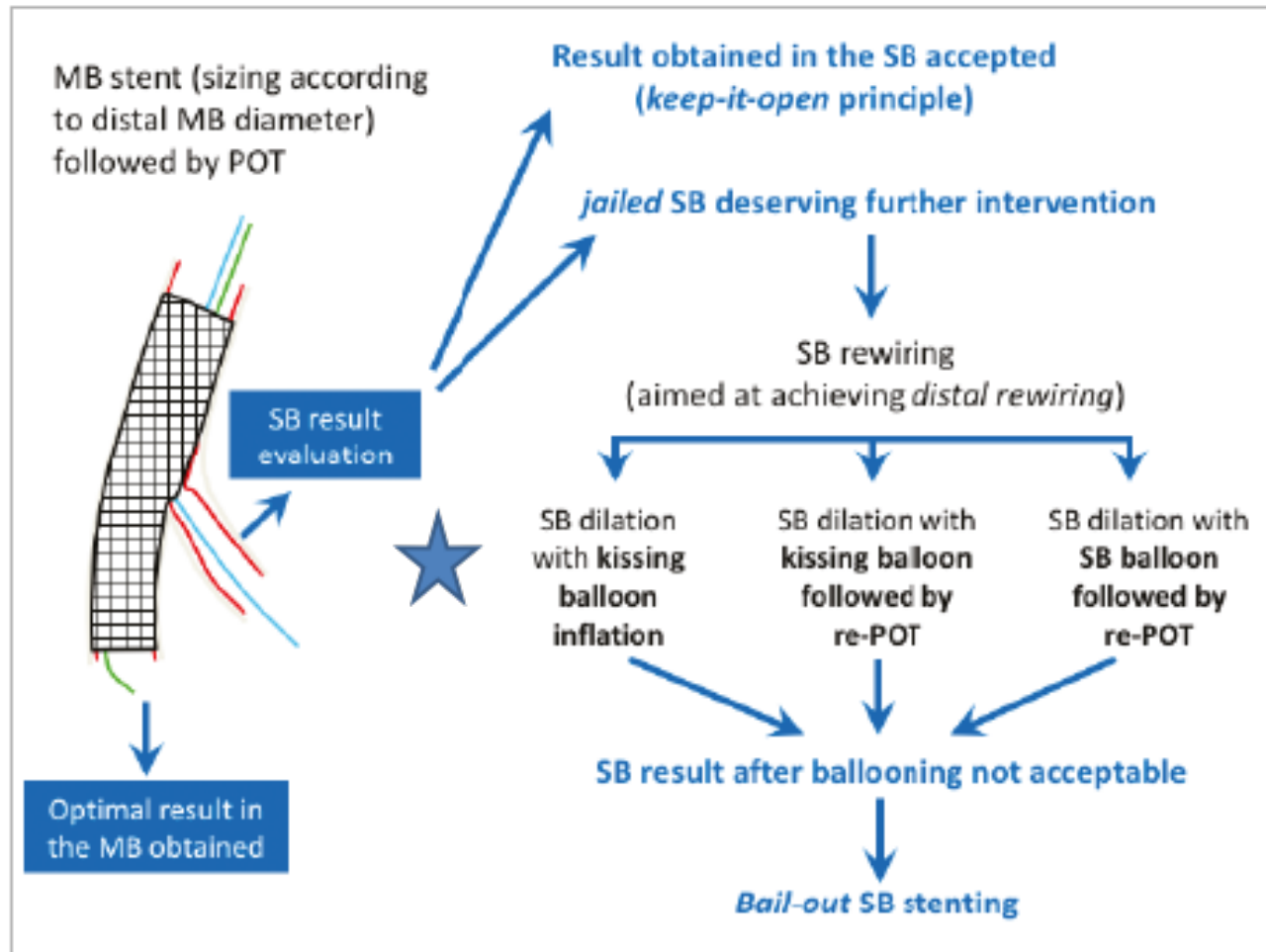
- **Quase todas** as lesões de bifurcação – incluindo TCE pode ser tratado com segurança pela artéria **radial** com cateter **6 Fr**.
- **7 Fr** pode ser necessário se a estratégia planejada envolver técnicas de **duplo stent** ou **três balões** para **trifurcações**.
- **7 Fr** quando **vasos muito calibrosos** e necessidade de **balões maiores que 3,5 mm** de diâmetro.

## TAMANHO DO STENT DE ACORDO COM A REFERÊNCIA DISTAL CUIDADO COM POLÍGONO DE CONFLUÊNCIA DURANTE POT CORDA-GUIA NO RAMO LATERAL



**Figure 2.** Summary of the provisional approach. Upper panel from left to right: two wires in place, main branch stent sized according to the distal reference, POT, keep it open. Lower panel: access towards the distal strut, guidewire exchange, kissing balloon inflation with short non-compliant balloons (not proximal to the polygon of confluence to avoid dilating the distal part of the stent too much towards the side branch). A final POT should be carried out if the two balloons are proximal to the polygon of confluence.

1) Dilatação RL -> 2) KB ou 3) KB+re-POT ou 4) RL+re-POT

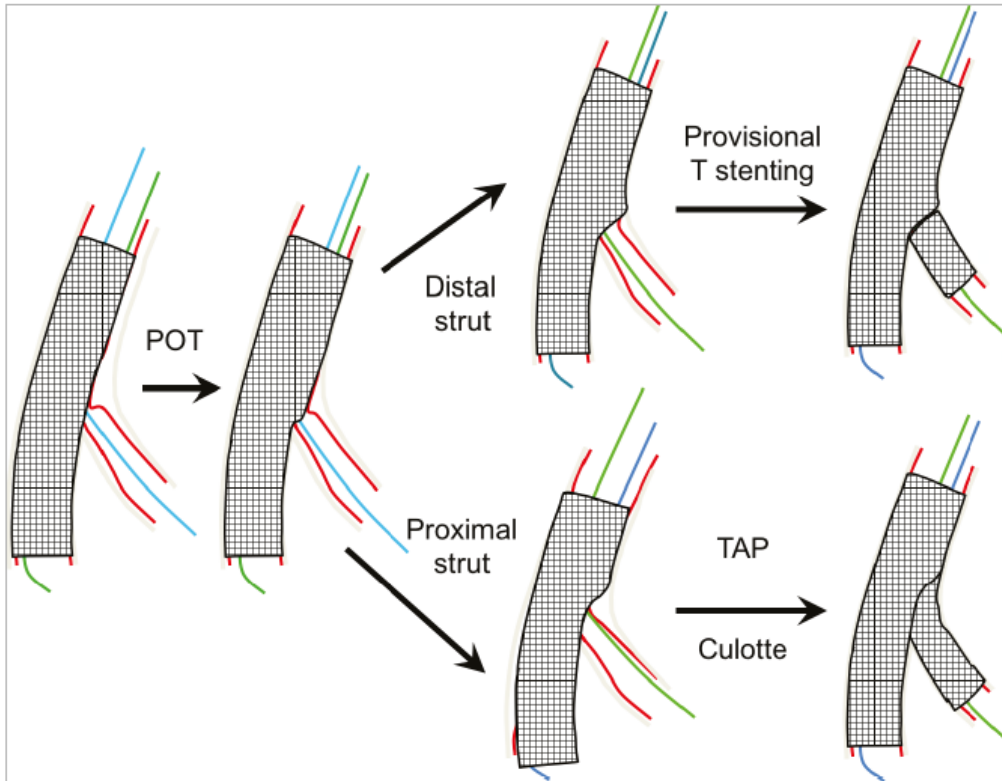




# Posição corda-guia

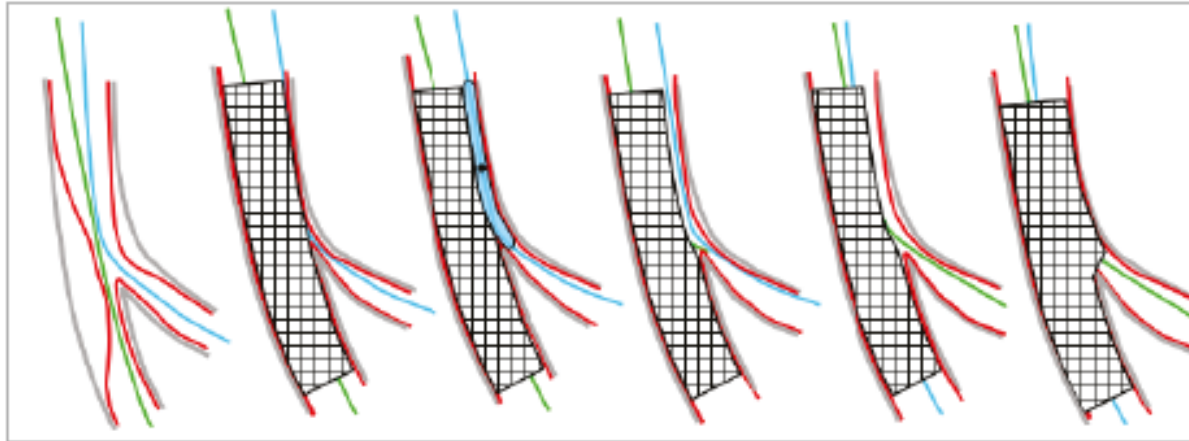
Distal -> T

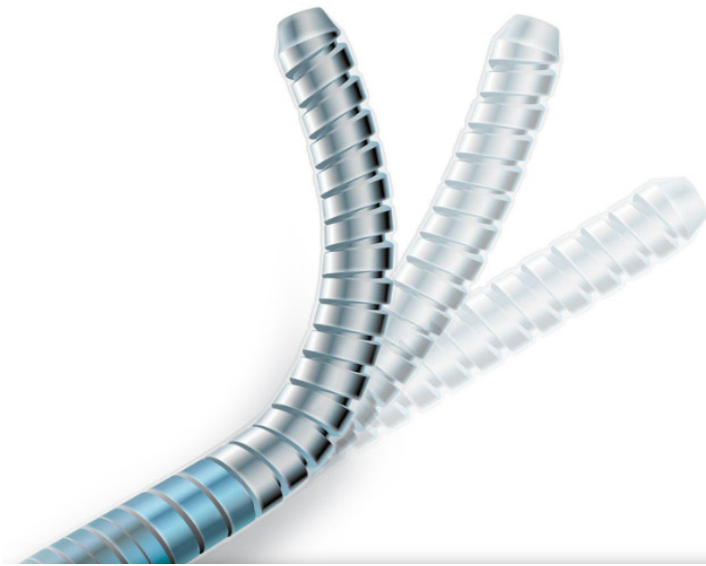
Proximal -> TAP ou culotte



# THE JAILING WIRE TECHNIQUE

Salvamento de ramo lateral usando a técnica de fio preso





 VENTURE  
CATHETER

Cateter de controle de fio guia  
com ponta deflectível

- Microcateteres, especialmente aqueles com lúmen duplo, bem como o cateter Venture (Vascular Solutions, Minneapolis, MN, EUA) com sua ponta flexível, pode ser útil para acessar o RL em casos difíceis.

# PREDILATAÇÃO

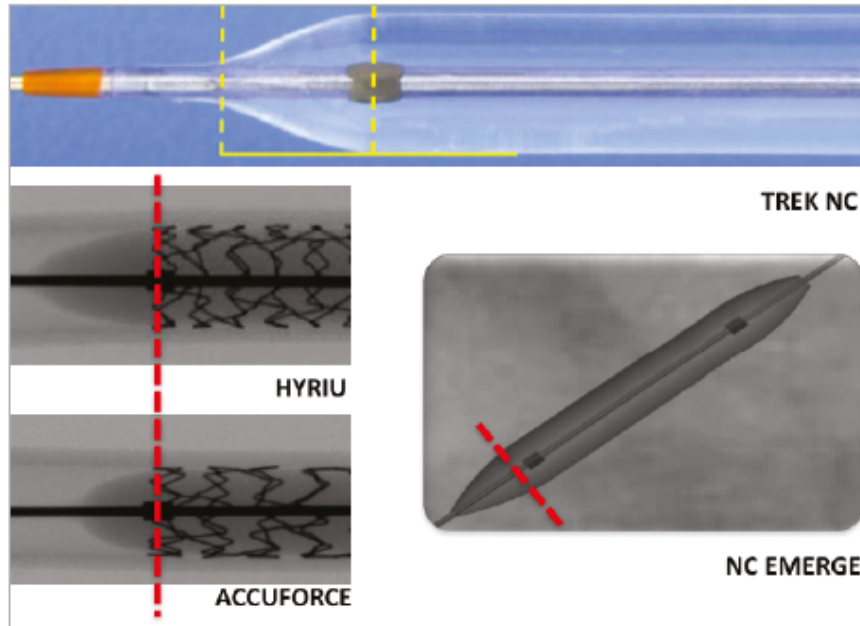
## Importante!

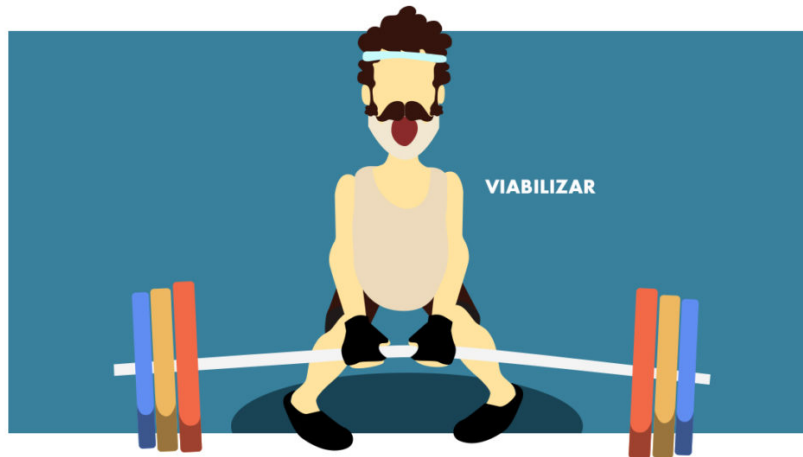


- A pré-dilatação do **VP é recomendada**.
- A pré-dilatação do RL só é recomendada quando o acesso é difícil, em casos de lesão severa difusa e / ou calcificação e/ou queda do fluxo do RL comprometido após passagem da corda-guia.
- CONSIDERE uma estratégia de implante de stent (*reverse provisional stenting strategy ou DK-crush*) permitindo o implante de stent do RL primeiro em caso de dissecação ou difícil acesso ao RL.

# PROXIMAL OPTIMISATION TECHNIQUE

posicionamento do balão para um PQT ideal pode ser diferente de acordo com a marca do





- POT é recomendado em stent de bifurcação.
- POT deve ser executado antes do recruzamento do RL para facilitar acesso e reduzir risco de complicações nas tentativas de re-abordagem.
- Assegurar a dilatação apenas da borda do stent proximal até à carina.

# ABORDAGEM DO RAMO LATERAL

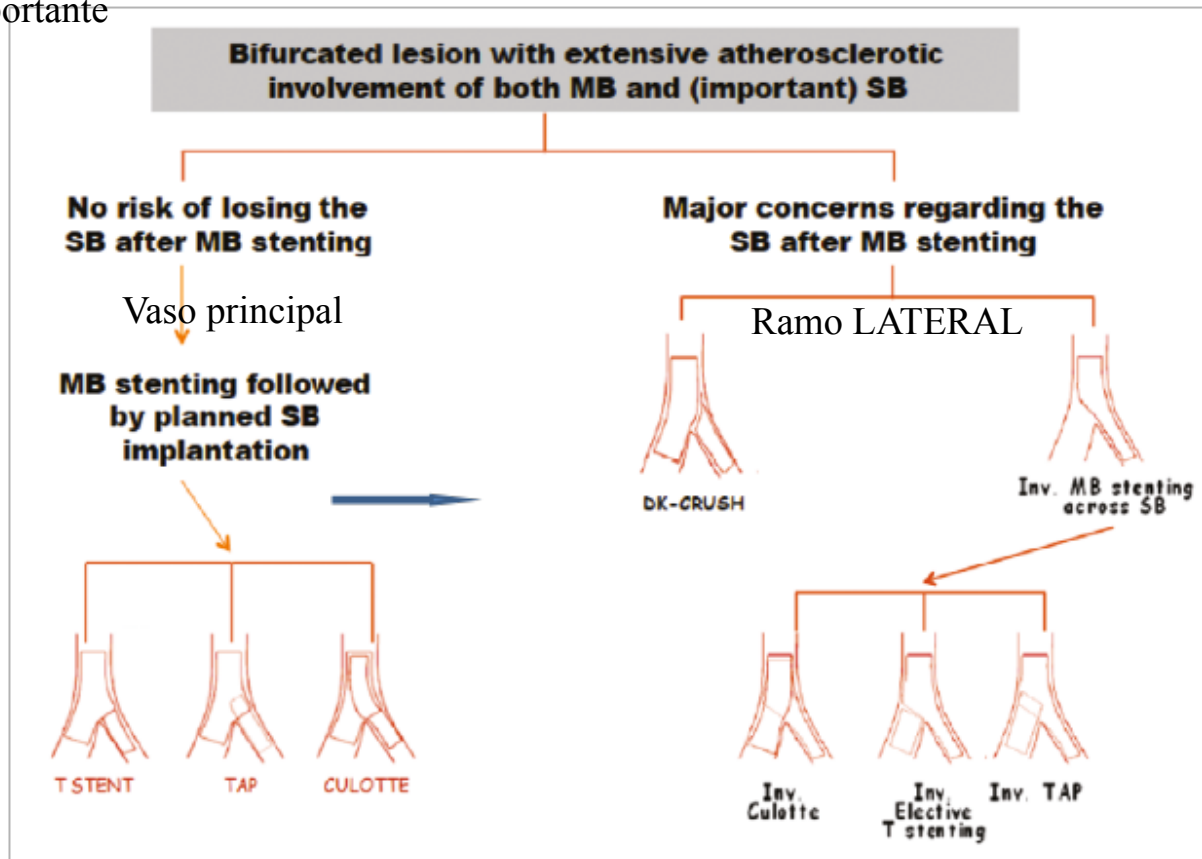
- O tratamento do RL é indicado se óstio com lesão significativa ou se fluxo limitado após POT.
- Se o tratamento RL for necessário, recruze e dilate o RL e finalize com KB e POT.
- O implante de stent RL é indicado se o RL estiver ocluído, dissecado ou fluxo limitado, apesar do KB.

# ELECTIVE TWO-STENT TREATMENT

- PLANEJAMENTO: 2 stents para bifurcações com lesões longas no RL, dificuldade de acesso ao RL ou alto risco de comprometimento do RL.
- A anatomia do vaso, o tamanho dos vasos, a necessidade de implantar o stent no RL primeiro e a proficiência do operador afetam a escolha da estratégia.
- As técnicas recomendadas incluem implante de **reverse provisional stenting, T-stenting, culotte e DK crush**

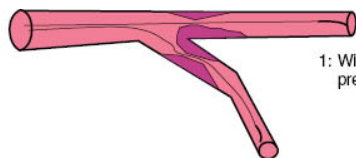


Bifurcação VERDADEIRA c/ aterosclerose significativa e Ramo LATERAL importante

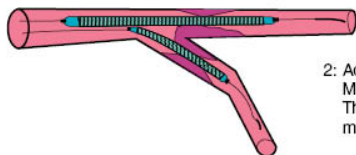


Invertido

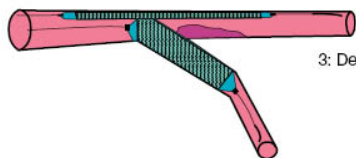
# Mini-crush Technique



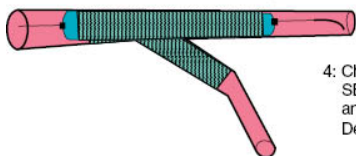
1: Wire both branches and predilate if needed.



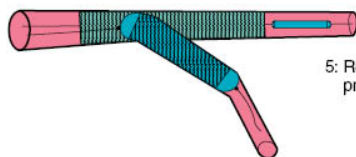
2: Advance the 2 stents. MB stent positioned proximally. The SB stent will protrude only minimally into MB.



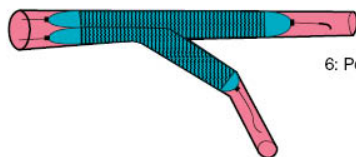
3: Deploy the SB stent.



4: Check for optimal result in the SB and then remove balloon and wire from SB. Deploy the MB stent.

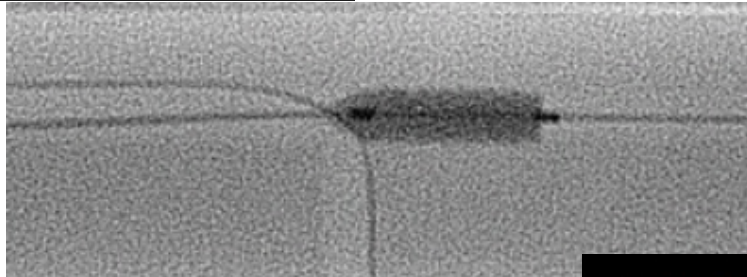
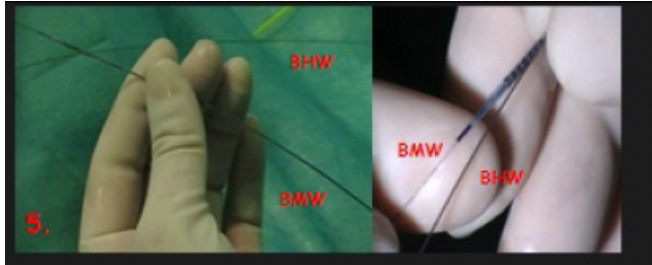


5: Rewire the SB and perform high pressure dilation.



6: Perform kissing balloon inflation.

# Szabo Technique





ELSEVIER

# Canadian Journal of Cardiology

Volume 36, Issue 6, June 2020, Pages 852-859

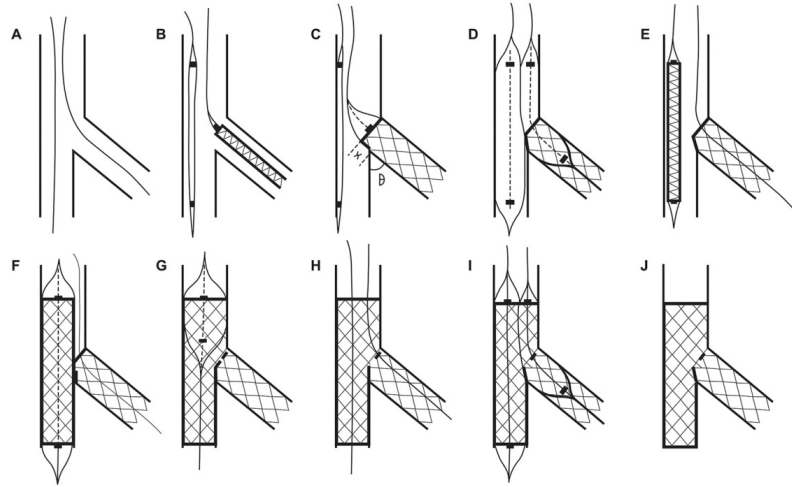


Clinical Research

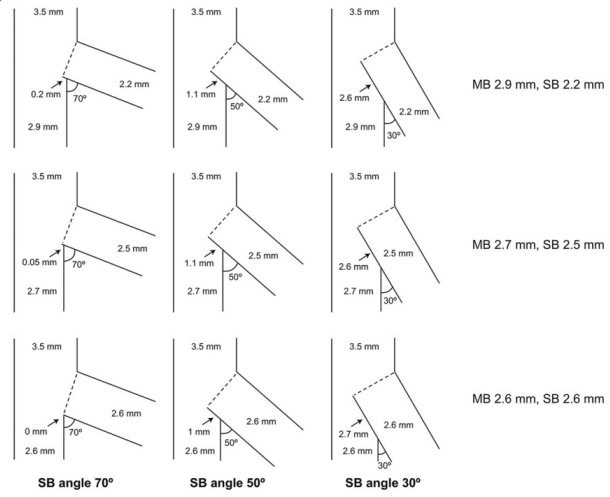
## Double-Kissing Nanocrush for Bifurcation Lesions: Development, Bioengineering, Fluid Dynamics, and Initial Clinical Testing

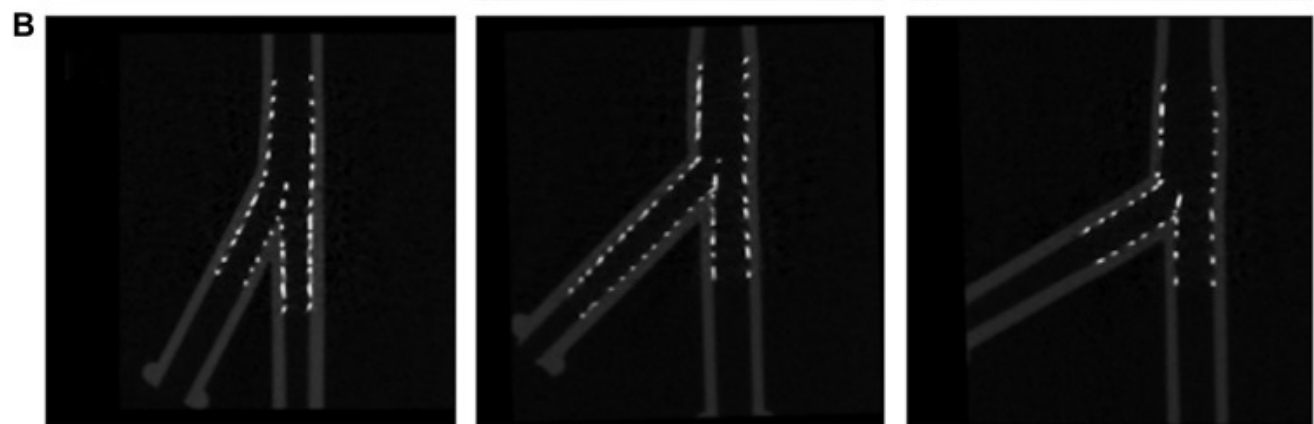
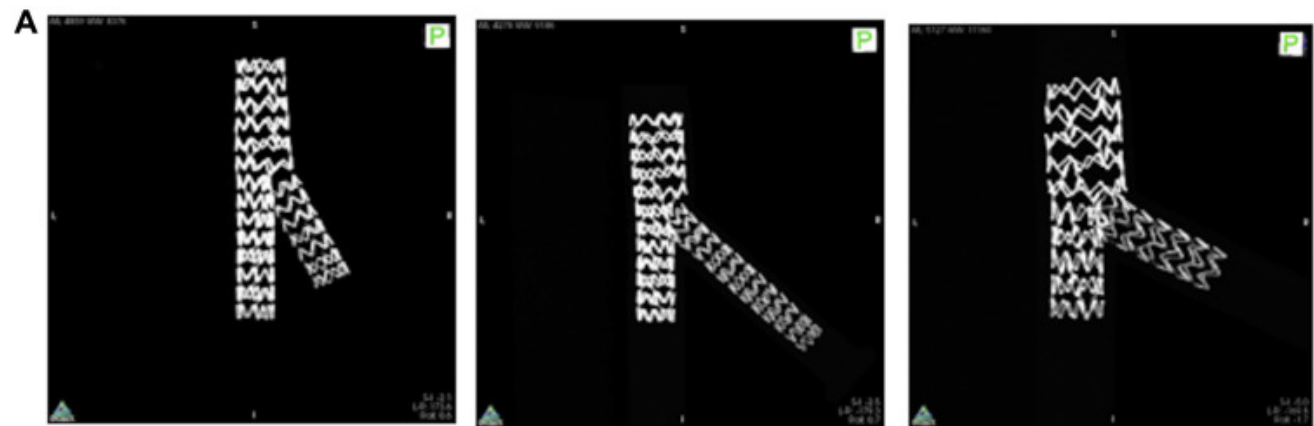
Paul D. Morris MRCP, PhD <sup>a, b, c, †</sup>, Rebecca Gosling BSc, MRCP <sup>a, b, c, †</sup>, Alex Rothman MRCP, PhD <sup>a, b</sup>, Javaid Iqbal MRCP, PhD, FESC <sup>b</sup>, Claudio Chiastra PhD <sup>d, e</sup>, Monika Colombo MSc <sup>d</sup>, Francesco Migliavacca PhD <sup>d</sup>, Amerjeet Banning MB, BS, MRCP <sup>f, g</sup>, Julian P. Gunn MD, MRCP <sup>a, b, c, g</sup> ✉

# A



# B





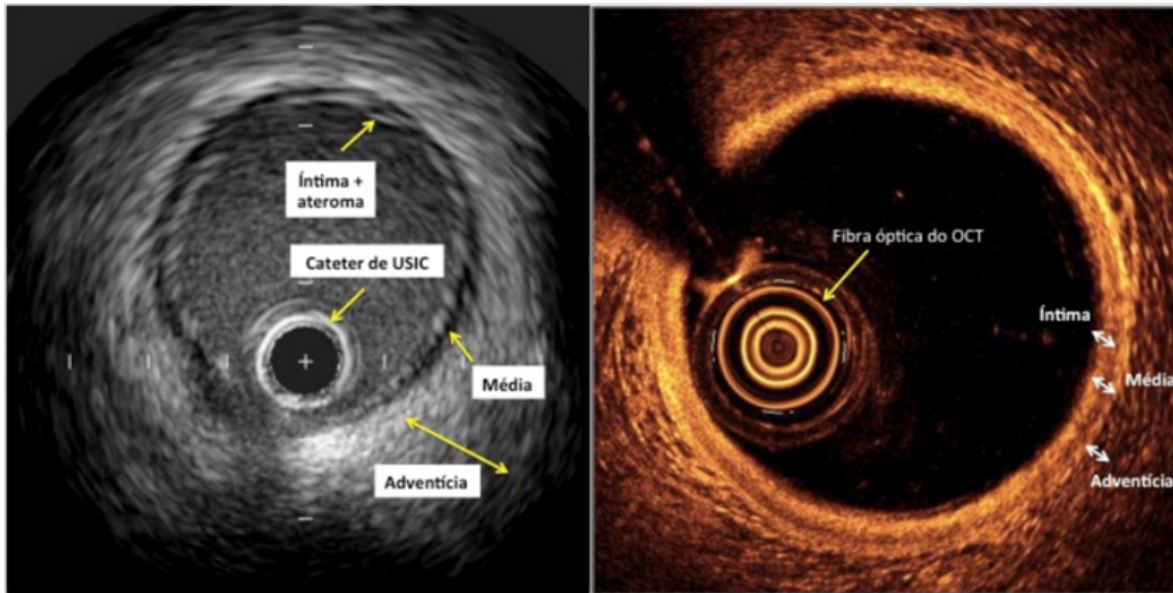
SB Angle 30°

SB Angle 50°

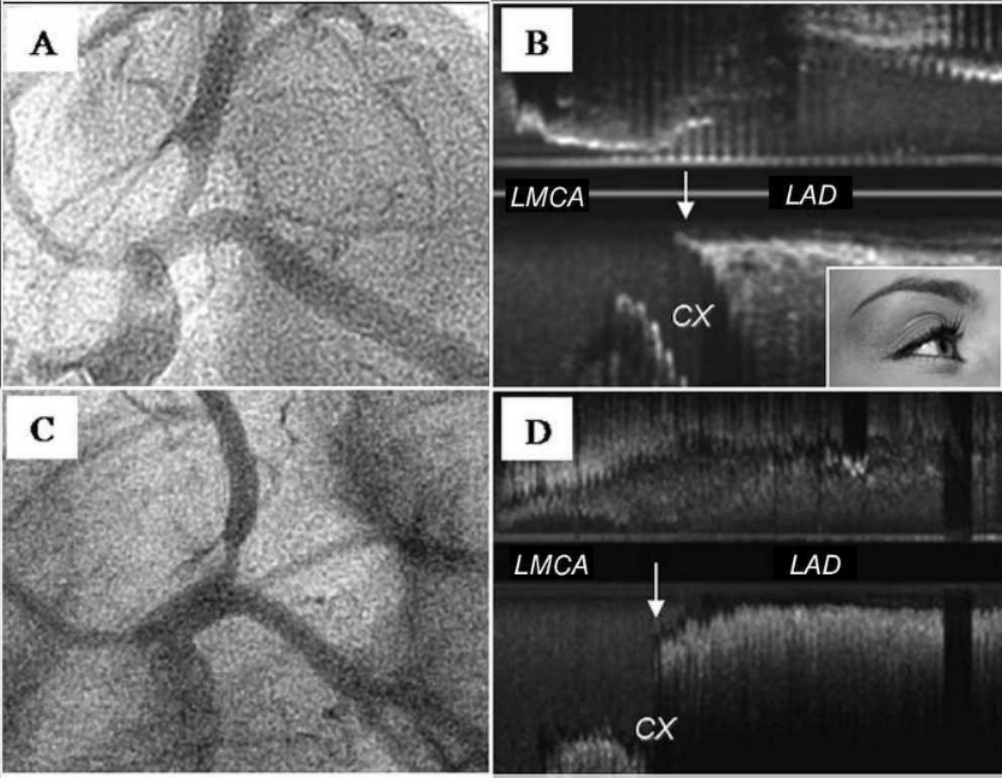
SB Angle 70°

# INTRACORONARY IMAGING

- Imagem intravascular adjunta com ultrassonografia intravascular (IVUS) ou OCT podem fornecer informações cruciais no planejamento e otimizar o tratamento.



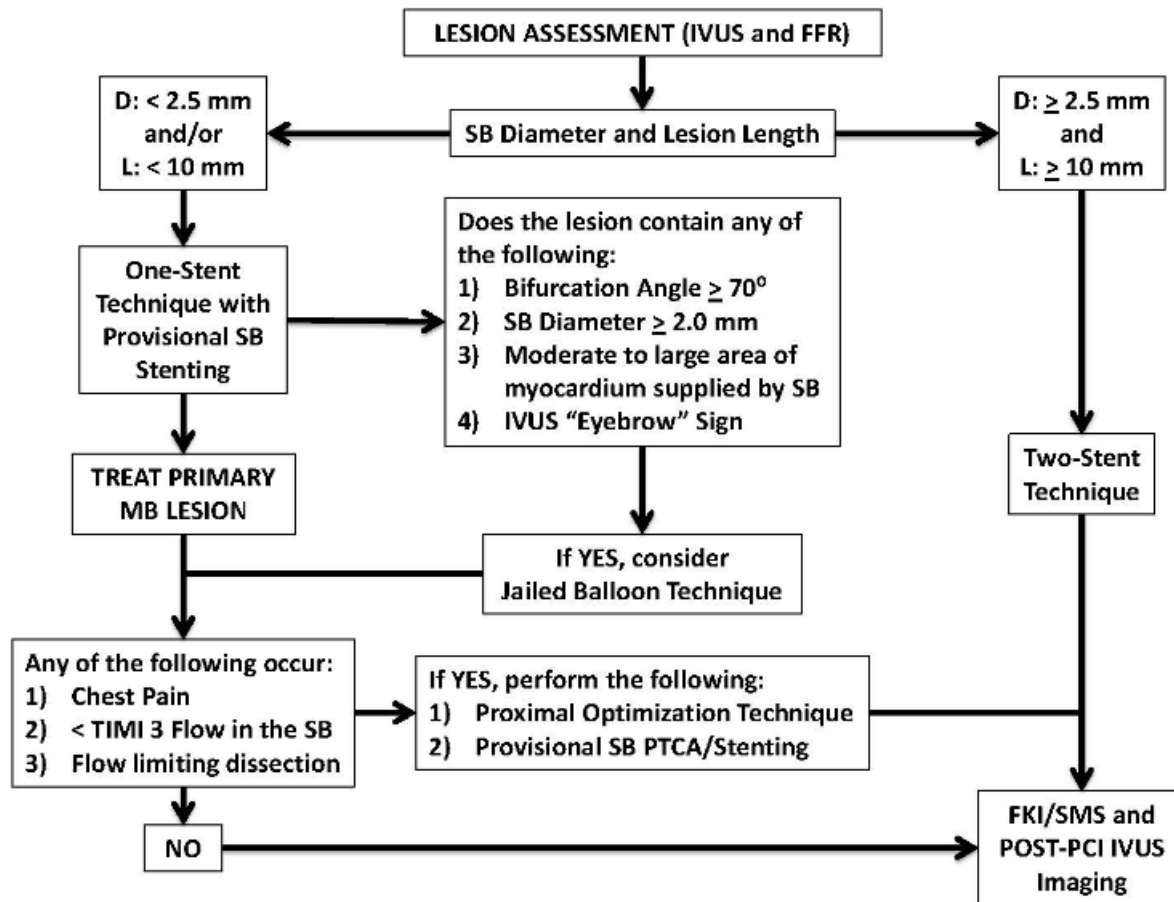
# Vulnerable Carina Anatomy and Ostial Lesions in the Left Anterior Descending Coronary Artery After Floating-Stent Treatment



DOI: 10.1016/S1885-5857(09)73351-1

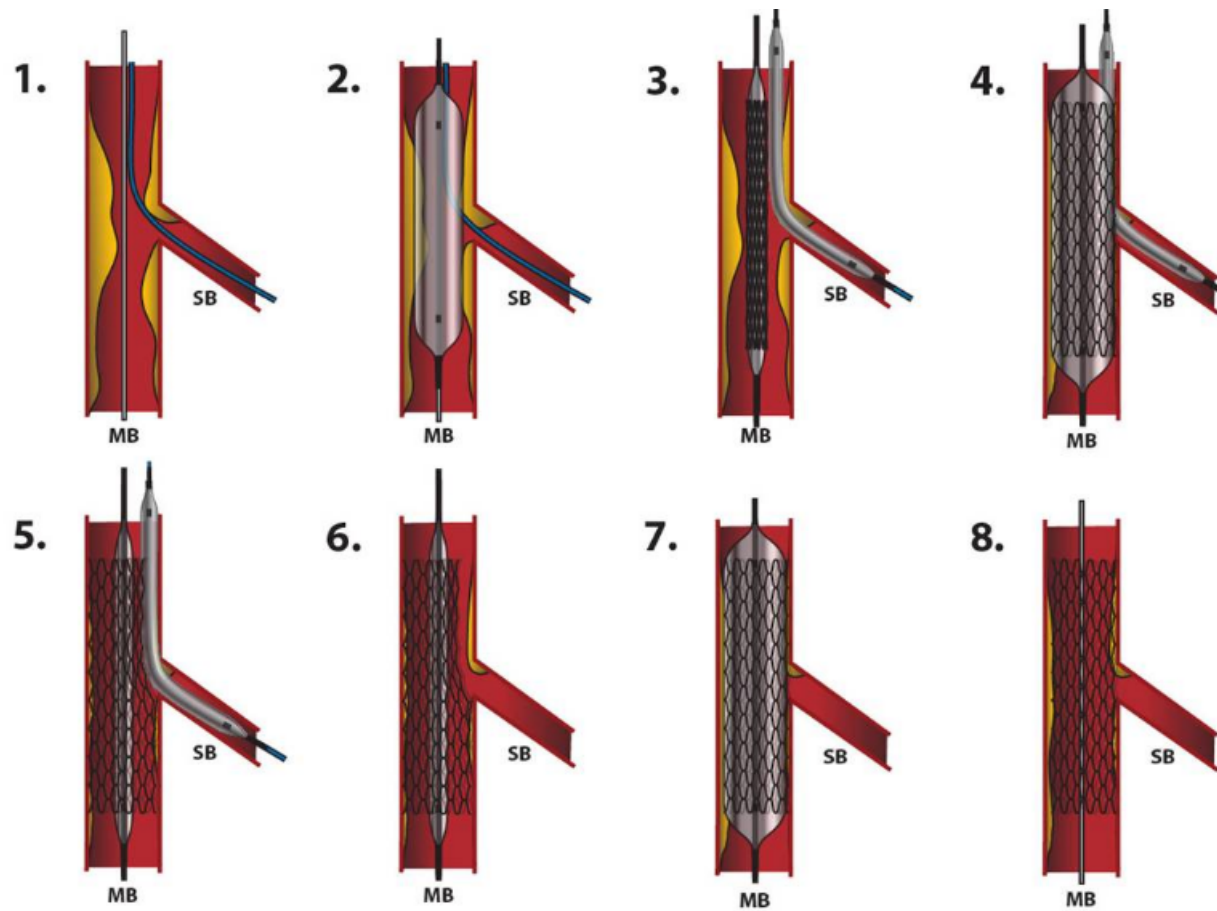


The IVUS "eyebrow" sign shown at the level of the carina (white arrow) between the left main and left circumflex coronary arteries. Reprinted from Stankovic et al. Eurointervention 2009;5:39-49, with permission from Europa Edition.



The information that IVUS provides when used prior to PCI allows for selection of stent size and length, type of stent, and the stenting technique.

# Jailed-Balloon Technique



# THE LEFT MAIN

- *Guidelines on myocardial revascularisation from the European Society of Cardiology/European Association for Cardio-Thoracic Surgery*
- Classe IB para ICP em pacientes com baixo escore SYNTAX e doença TCE significativa.
- SYNTAX de 22 a 33 é de classe IIa
- SYNTAX  $\geq 33$ , a recomendação é classe III

## EBC CONSENSUS ON LM TREATMENT AND TECHNIQUES

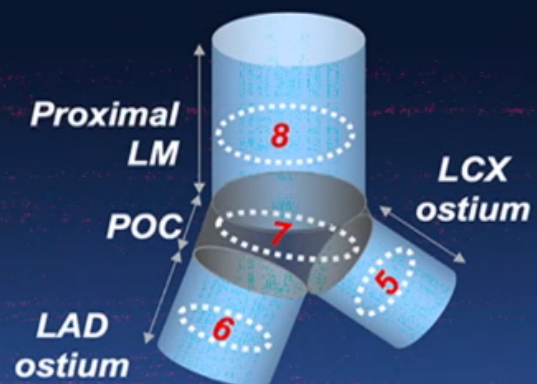
- Implante de stent envolve a bifurcação em 80-90% dos casos de TCE.
- *Provisional stenting* é a estratégia recomendada na maioria das lesões de bifurcação TCE distal.
- *Two-stent techniques* podem ser indicadas em casos com lesões longas de Cx, alto risco de comprometimento da Cx ou dificuldade de acesso.

# IVUS/OCT/FFR IN LM

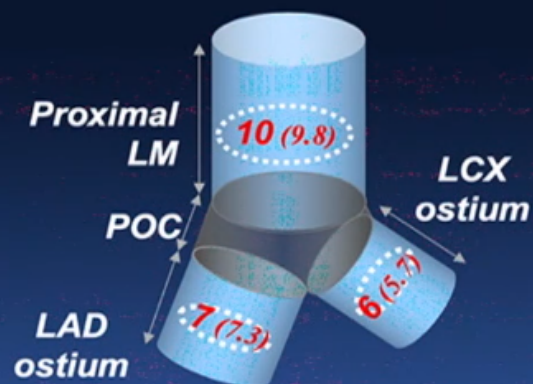
- IVUS ALM 6 mm<sup>2</sup> foi adotada como parâmetro para adiar a intervenção.
- FFR pode ser usado para determinar a indicação para o tratamento TCE.
- FFR pode ser usado para o adiamento seguro do tratamento da Cx se medido após o implante de stent que cruza óstio de Cx.

## Minimum Achievement Criteria of MSA

### Asian (Small person) Criteria



### Caucasian (Large person) Criteria



# Conclusions

- **Mantenha-o simples e seguro.**
- Limite o número de stents.
- Respeite a anatomia original da bifurcação e tente reproduzi-la.
- Visar stents bem apostos e expandidos com limitado *overlap*.

# Step-by-step manual for planning and performing bifurcation PCI: a resource-tailored approach



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*Algoritmo PCI de bifurcação  
adaptado aos recursos proposto*



 **Recommended approach.**

 **Minimum requirement for adequate result.**

 **Not recommended.**

 **Crucial point in the decision-making process of bifurcation PCI.**

### **Abbreviations**

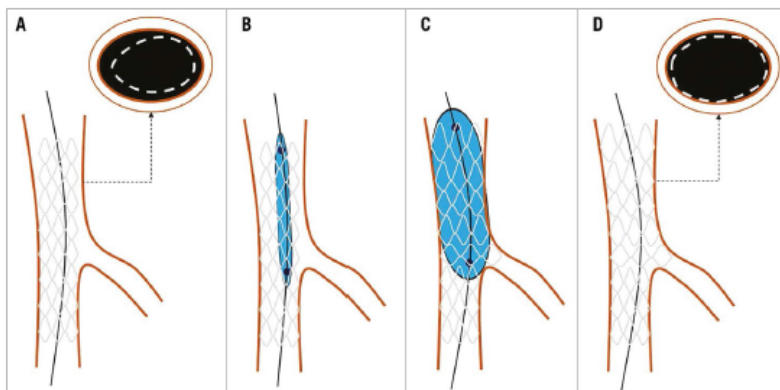
<b>DK-crush</b>	double kissing crush
<b>IVUS</b>	intravascular ultrasound
<b>KBI</b>	kissing balloon inflation
<b>MB</b>	main branch
<b>NC</b>	non-compliant
<b>OCT</b>	optical coherence tomography
<b>PCI</b>	percutaneous coronary intervention
<b>POT</b>	proximal optimisation technique
<b>SB</b>	side branch
<b>SC</b>	semi-compliant
<b>TAP</b>	T and small protrusion

**Table 1. Overview of the recommended and minimally required material for optimal bifurcation PCI with provisional SB stenting.**

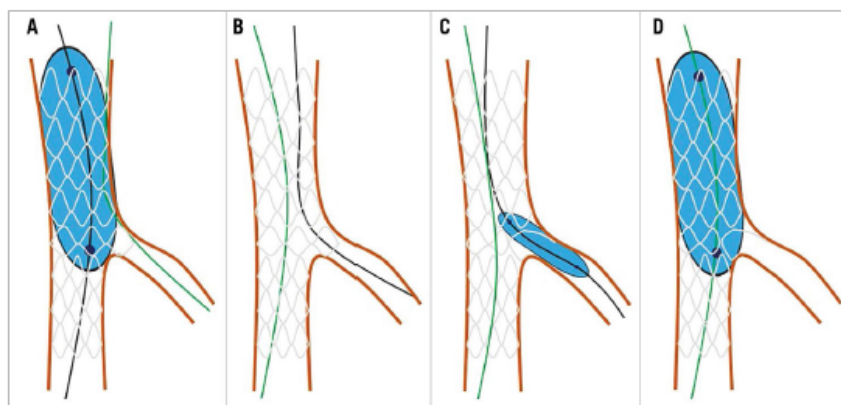
STEP		Recommended	Minimally required
Wiring (and rewiring)		2 or 3 wires	1 wire*
Predilatation		1 or 2 SC or NC balloons	0 balloons <sup>†</sup>
MB stenting		DES	BMS <sup>‡</sup>
Optimisation of MB stent	POT	1 short NC balloon	1 SC balloon <sup>§</sup>
	SB opening and KBI	1 SC or NC balloon for MB cell opening+ 2 NC balloons for KBI	POT-side-POT: 1 previously used balloon for POT+1 SC balloon <sup>§</sup>
Second stent in provisional single-stent strategy	T and TAP	For final KBI: SB stent delivery balloon+ 1 NC balloon in the MB	For final KBI: SB stent delivery balloon+ MB stent delivery balloon
	Culotte	For final KBI: 2 NC balloons	For final KBI: SB stent delivery balloon+ MB stent delivery balloon
	DK-crush	For final KBI: 2 NC balloons	For final KBI: SB stent delivery balloon+ MB stent delivery balloon

\*if no severe SB disease; <sup>†</sup>if no angiographic signs of fibrotic/calcified tissue are present in the MB and/or SB; <sup>‡</sup>if SB <2 mm, per expert consensus; <sup>§</sup>it is important always to take into account the need for POT and available SC balloon lengths, when deciding on the MB stent length; <sup>¶</sup>POT-side-POT can be used instead of KBI.



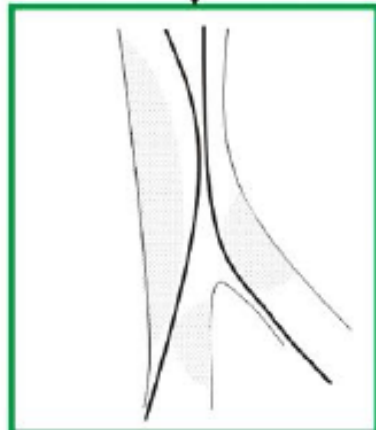


**Figure 2.** Proximal optimisation technique (POT). A) Stent implantation in the MB sized according to the distal reference (and therefore undersized in the proximal MB, as depicted in the cross-sectional image). B) Positioning of the short NC or SC balloon with the distal marker in front of the carina and the proximal marker inside the proximal stent edge. C) Inflation of the balloon for POT. D) Stent contour in the MB after POT. Note the correction of strut malapposition in the proximal MB segment (cross-sectional images A and D).

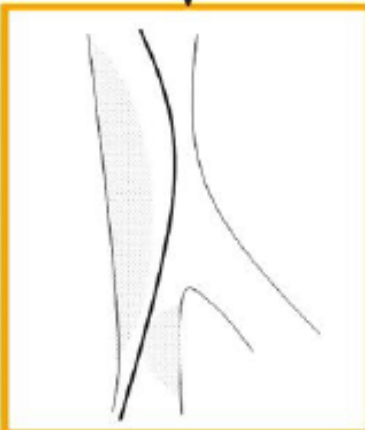


**Figure 3.** POT-side-POT technique for optimisation in the proximal main branch and the side branch. A) First POT after stenting of the MB, with the jailed guidewire (green) remaining in the SB. B) Exchange of guidewires. First, the guidewire from the MB (black) is placed through the distal stent strut into the SB, and, second, the initially jailed guidewire from the SB (green) is completely retracted outside the stent and, with a loop, placed into the distal MB. C) Dilatation at SB ostium with NC or SC balloon. D) Second or final POT.

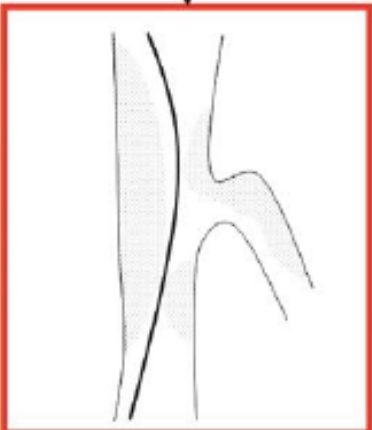
Wiring



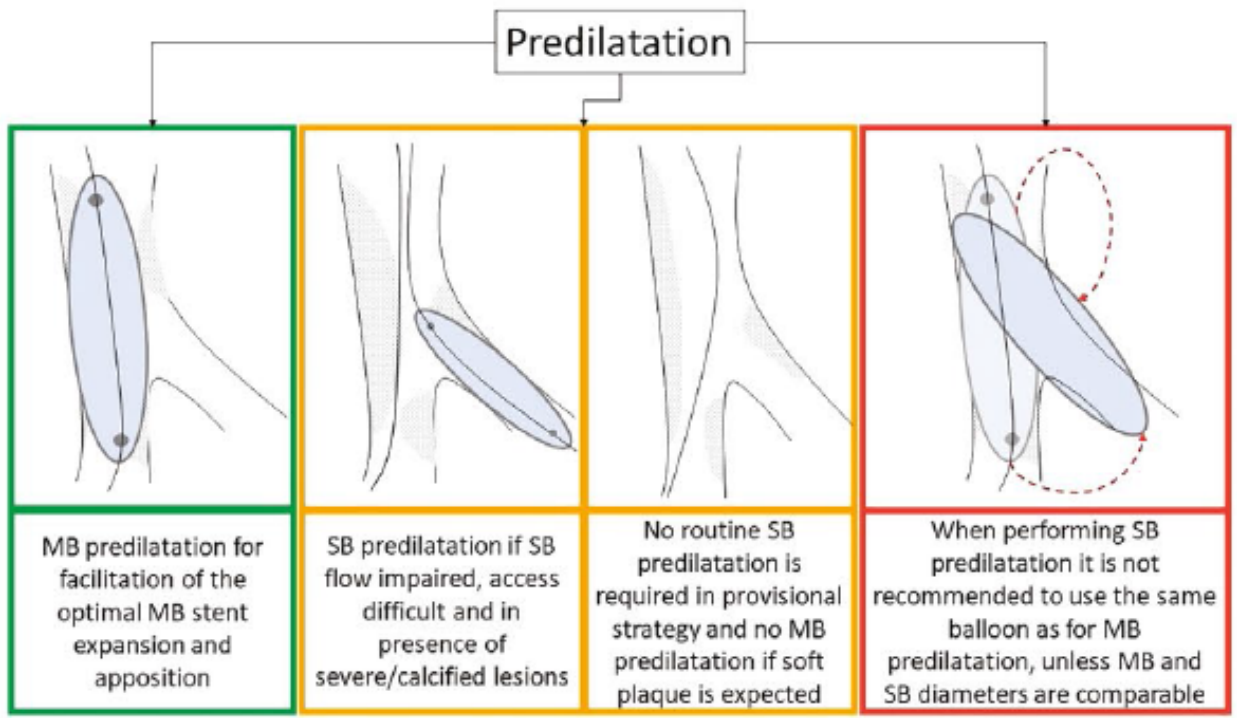
Upfront SB wire is recommended in true bifurcations or if difficult rewiring is anticipated



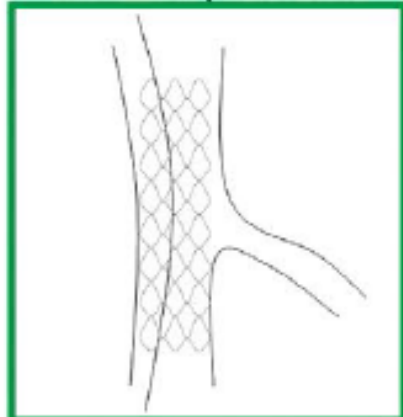
Only MB wire may be used if SB angle is favourable and no severe SB disease is present



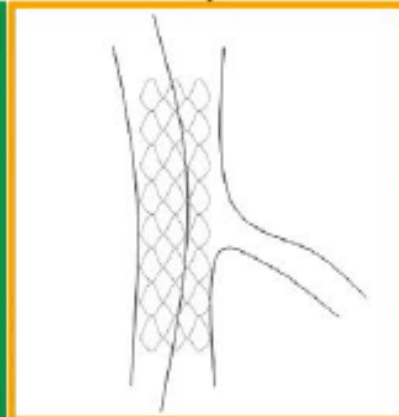
Only MB wire is not recommended if SB severely diseased or unfavourably angulated



## MB stenting



DES is the recommended approach for bifurcation PCI, sized according to the distal vessel reference diameter



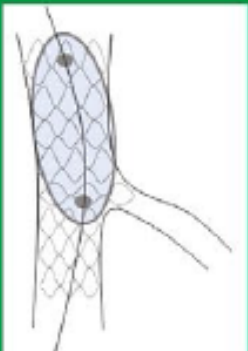
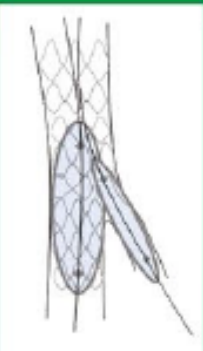
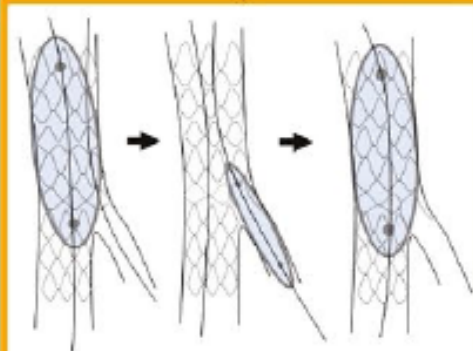
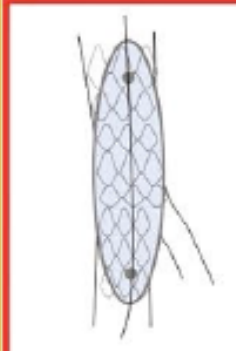
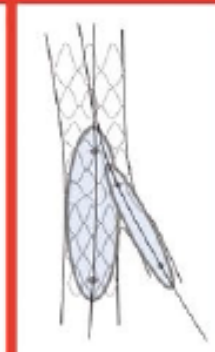
If only BMS is available, it may be used for MB stenting in provisional strategy, with meticulous post-stenting optimisation



BMS is not recommended if two-stent approach is planned

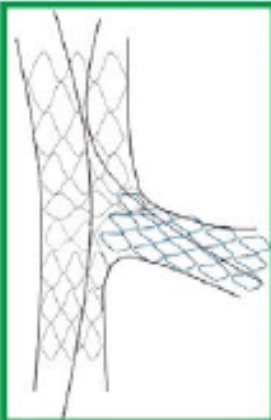

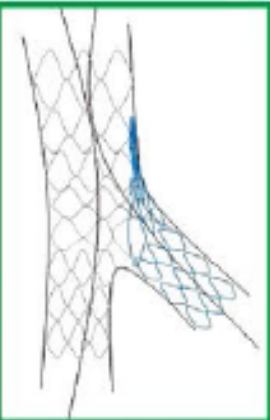
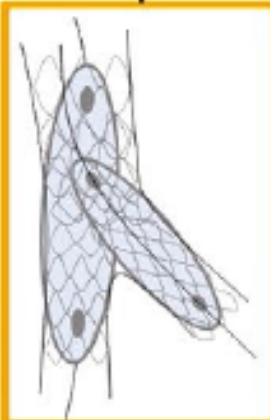



### MB stent optimisation

				
<p>POT should be routinely performed with short NC balloon to correct for stent undersizing in the proximal MB</p>	<p>For KBI, two NC balloons are recommended, sized according to SB and distal MB, with short proximal overlap</p>	<p>POT-side-POT could be considered as an alternative to KBI and SC balloons may be used for POT instead of the NC balloon, taking into account the length of the stented MB segment and maximum inflation size of the available SC vs. NC balloons</p>	<p>It is not recommended to post-dilate the MB stent distally to the carina with the balloon sized according to the proximal MB</p>	<p>Routine KBI is not recommended in a single-stent strategy</p>



SB stenting (if deemed necessary)

				
T- and TAP stenting is recommended in bifurcations with wide angles ( $>70^\circ$ )	If bifurcation angle is smaller ( $<70^\circ$ ), either culotte (left) or DK-crush (right) technique can be used, while considering SB stenting first in case of SB dissection or difficult access		With two-stent techniques, stent delivery balloons may be used for final KBI	When performing two-stent bifurcation PCI, final KBI should not be omitted

"Você nunca sabe o que é suficiente, a menos que você saiba o que é mais do que suficiente".

William Blake (1757-1827)

# CASO CLÍNICO

**OBRIGADO!**