PROVISIONAL STENTING IN BIFURCATION LESIONS

WHEN and HOW?

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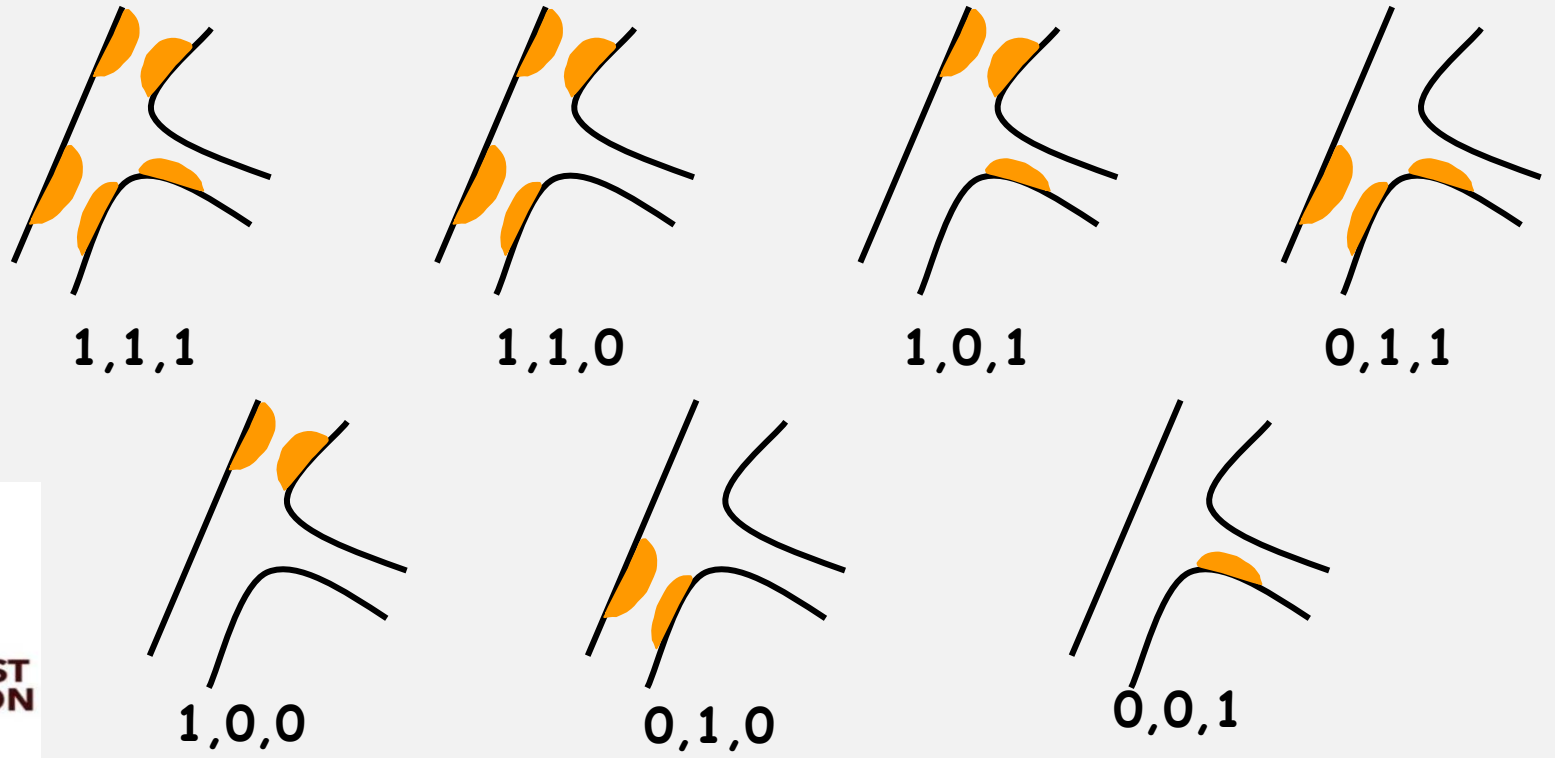
- *None of the bifurcation lesions are similar!!!*
- *Every case is unique and another challenge!!!*
- *Decision for the best stent strategy must be made accordingly!!!*



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Medina et al. Rev. Esp. Cardiol 2006; 59(2): 183-4.

STRATEGIES FOR BIFURCATION LESIONS

- Strategies for bifurcation lesions are chosen according to the side branch (SB) properties;
- Relevant SB size (≥2.0 mm and supplying >%10 myocardium/ ≥73 mm length)
- Ostial or diffuse disease (>10 mm)
- Amount of the myocardial territory supplied by the SB (supplying >%10 of the myocardium, a SB ≥73 mm length is assumed to supply ≥10% myocardium)
- SB angle (if lost difficult to reintervene)

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STRATEGIES FOR BIFURCATION LESIONS

- Keep the SB open
- Provisional
- 2-stent approach

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KEEP THE SB OPEN

- When; SB is not suitable for stenting (small SB with ostial *or* diffuse disease)

HOW?

- Wire both branches
- Prepare the lesion in the main vessel (MV) optimally
- Stent the MV (do not oversize the stent; size the stent according to the distal MV, this prevents plaque/carina shift)
- Keep the jailed wire in the side branch and post-dilate the stent according to the vessel diameter.

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Predilatation or post-dilatation of the SB is not recommended!

PROVISIONAL STENTING

- Minimal SB disease or diseased SB ostium with suitable features for a second stent implantation (if needed)
- Wire both branches
- Optimal preparation of the lesion before stent implantation; predilatation of the main vessel and SB (if necessary)
- Implant the MV stent
- Post-dilatation of the MV adequately (keep the jailed wire in the SB)
- If SB is compromised; rewire the SB from distal MV stent strut, do the kissing balloon inflation (NC balloon size 1:1 according to the distal MV and SB)
- Finish with the re-pot.

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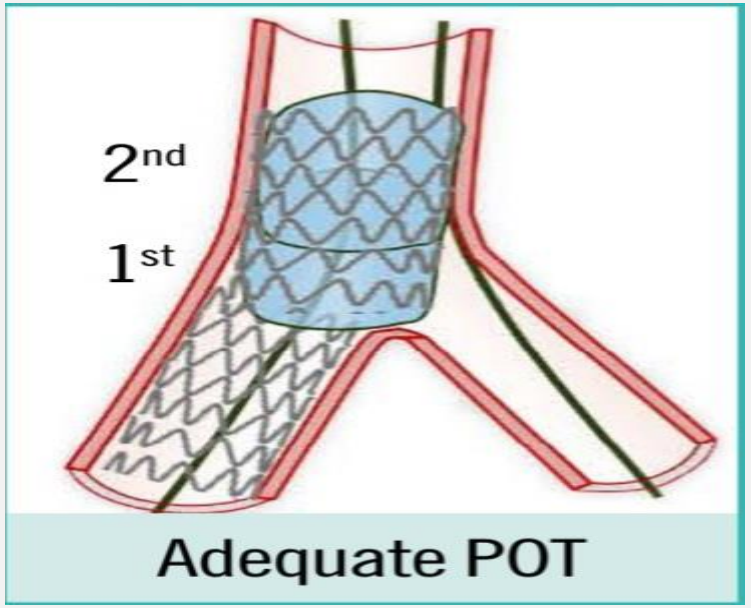
ADEQUATE POT

- POT balloon distal shoulder is positioned immediately proximal to the carina (sized 1:1 to the proximal MV).



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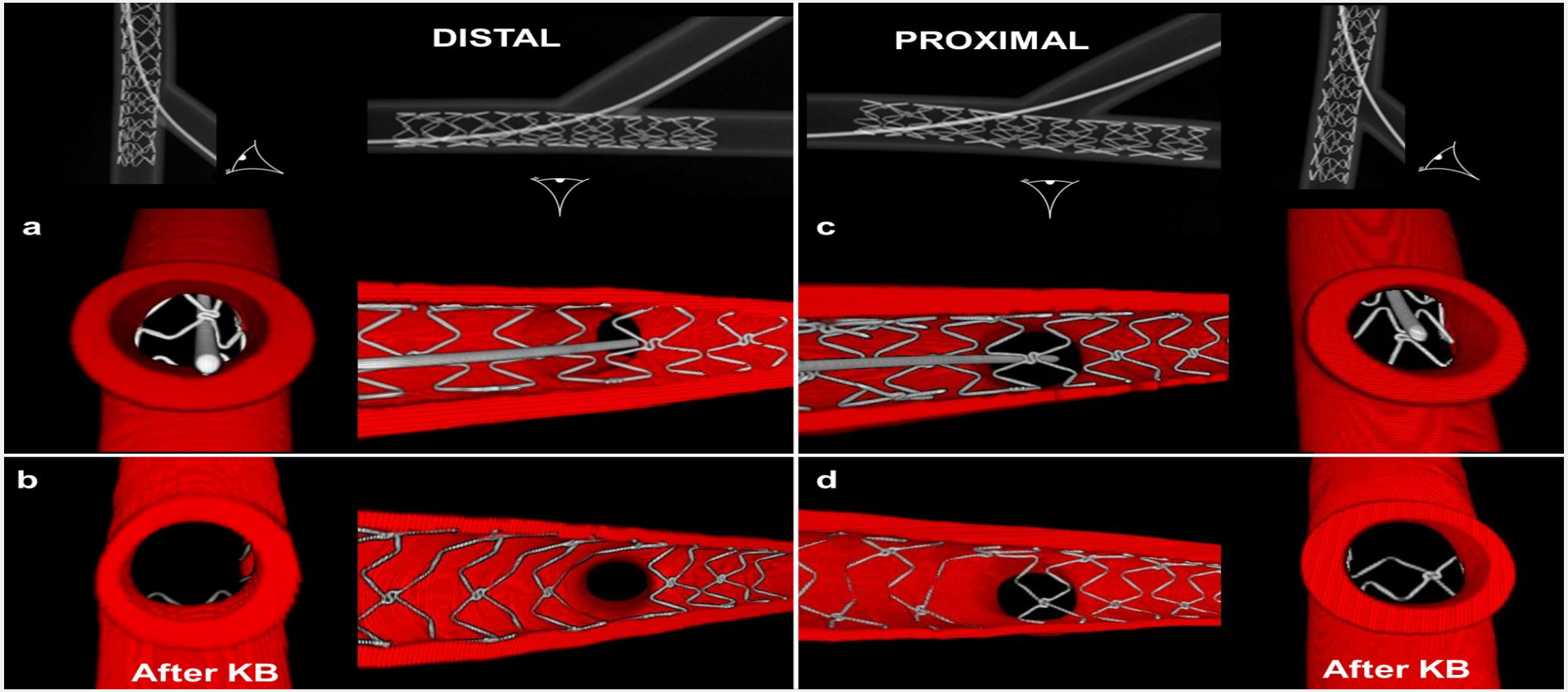
16th expert consensus document of the EBC EuroIntervention. 2022;18(5):e362-e376.

FOR BETTER SB SCAFFOLDING MUST RE-WIRE FROM THE DISTAL STRUT!



Foin et al., Int J. Card. 2013; 168(4):3623-8

HOW THE SB WIRING HELPS?

- SB wiring;

  Prevents SB occlusion after the MV stenting,

  Widens the angle between MV and SB,

  If SB disappears as a result of any plaque shift, it acts as a marker for re-wiring,

  Modifies the angle of the SB take-off

  Not wiring the SB is related to the increased re-intervention at follow-up (Catheter Cardiovasc Interv. 2006 Jul;68(1):67-73)

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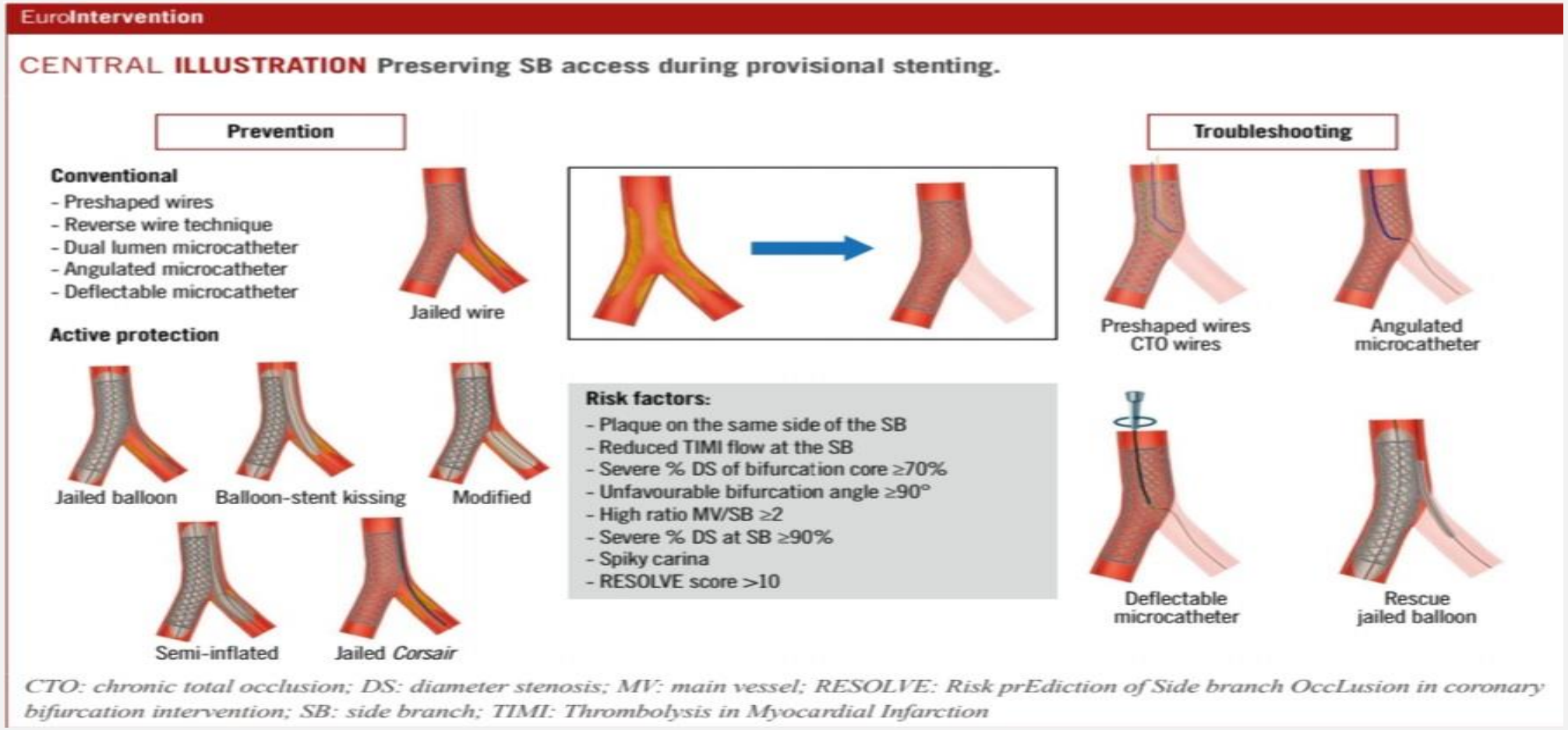
SB WIRING IS ESSENTIAL IN HIGH RISK ANATOMIES!



Predictors for Side Branch Failure During Provisional Strategy of Coronary Intervention for Bifurcation Lesions (from the Korean Bifurcation Registry). *Am J Cardiol.* 2016;118:797-803.

WHEN BAILOUT STENTING?

- If SB flow is compromised (<TIMI 3) due to the dissection/plaque shift and not solved with a kissing balloon inflation, a second stent implantation should be considered.

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BAIL-OUT STENTING TECHNIQUES

- TAP stenting
- Reverse crush stenting
- Culotte stenting

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TAKE HOME MESSAGES

- SB wiring is essential almost in all cases.
- To avoid plaque shift to the SB, respect to the distal vessel size while sizing the stent.
- Adequate POT is essential.
- Always ready for the worst (set up your cath lab accordingly).
- Know the bail-out stenting techniques (TAP, reverse crush, Culotte)
- While dealing with high risk anatomies think about starting with the 2-stent strategy at the first place (Zhang JJ et al; the Definition II Trial. Eur Heart J. 2020 Jul 14;41(27):2523-2536)

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ARTICLES TO READ

- Pan M, et al. The 17th expert consensus document of the European Bifurcation Club - techniques to preserve access to the side branch during stepwise provisional stenting. EuroIntervention. 2023;19:26-36.
- Zhang JJ, et al; the Definition II Trial. Eur Heart J. 2020;4:2523-2536.