Session: Complex lesion intervention:
What can we do? What should we do?

Bifurcations

15 min

Antonio Colombo

Centro Cuore Columbus  Milan, Italy
S. Raffaele Hospital    Milan, Italy
Bifurcations

1. Provisional

2. Two Stents

3. Keep It Open (KIO)
Bifurcations

Provisional

When the SB has minimal disease or only at the ostium AND when the SB is suitable for stenting

6 Fr guiding catheter

1. Wire both branches
2. Dilate MB and SB if needed
3. Stent MB leaving a wire in the SB
4. Re-wire SB and then remove jailed wire
5. Kissing balloon inflation
6. Stent SB only if suboptimal result (T and Protrusion or Reverse Crush)
Side branch protection

Lesion on LAD-Diag

Baseline Angiography

Stent on LAD

Xience 3.0x28mm
Lesion on LAD-Diag

After Stent

POBA on Diag

balloon 3.0x20mm
Bifurcations

Two Stents

When the SB has disease extending beyond its ostium AND when the SB is suitable for stenting

8 Fr guiding catheter

1. Wire both branches

2. Dilate MB and SB if needed

3. Perform crush or V-stent

4. If crush: rewire SB and perform high pressure SB dilatation

5. Kissing balloon inflation
Treatment of Bifurcation Lesion with two stents

Baseline

Treatment
Treatment of Bifurcation Lesion with two stents

Final Result
A Typical Case for 2 stents

Baseline

Following Crush

12472/05
Bifurcations

Keep It Open (KIO)

When the SB has ostial or diffuse disease AND when the SB is not suitable (too small) for stenting or clinically not relevant

6 Fr guiding catheter

1. Wire both branches

2. Dilate MB if needed

3. Stent MB and leave wire in the SB

4. Perform post-dilatation of the MB with jailed wire in the SB

Do not re-wire SB or postdilate or predilate SB
Example of Keep It Open (KIO)

Baseline
Example of Keep It Open (KIO)

Balloon inflated on SB
(Should not have been done)

Post Balloon inflation on SB
Example of Keep It Open (KIO)

Stenting of MB
Rewiring of SB with large dissection
Jailed wires for side-branch protection

side branches are selectively wired

Baseline

Side-Branch protection

Cypher 3.0x33mm
Jailed wires for side-branch protection

After stent

Jailed wires for side-branch protection

Cypher 2.5x18mm

Stent in Diagonal

12391/05
Jailed wires for side-branch protection
Thrombosis and restenosis in bifurcations

The final result
IVUS Images Post Rotablator

LAD Os

Cx Os
• Crush technique: 3.0x33 Cypher in Cx and 3.5x18 Cypher in LAD.
Final result after kissing

No restenosis at FU
IVUS in DES Era

Baseline Angiogram
Pre-Intervention IVUS Analysis

Vess Diam = 4.2 mm
Lumen Diam = 2.1 mm

Vess Diam = 2.6 mm
Lumen Diam = 1.9 mm

Vess Diam = 4.0 mm
Lumen Diam = 1.7 mm

Vess Diam = 3.4 mm
Lumen Diam = 2.1 mm

Vess Diam = 2.8 mm
Lumen Diam = 1.6 mm
Crush technique

LAD: Cypher 3.0 x 33mm, 2.75 x 33 mm
D2: Cypher 2.5 x 23 mm
Post-dilation with non-compliant balloons and FKB were performed
Final IVUS Analysis

Stent Area = 11.2 mm²

SA = 15.2 mm²
SA = 10.1 mm²
SA = 9.3 mm²
SA = 4.9 mm²

LAD

HSR 310806
The bifurcation is a True Bifurcation (significant stenosis on the MB and SB)

No

Provisional SB stenting or KIO

Yes

The SB is suitable for stenting

No

The disease on the SB extends for more than 3 mm from the ostium of the side branch:

No

Stent on MB and KIO

Yes

Elective implantation of two stents (MB and SB)