Bifurcation Stenoses: Is There a Soluton in Sight ?

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Requirements of a Final Solution

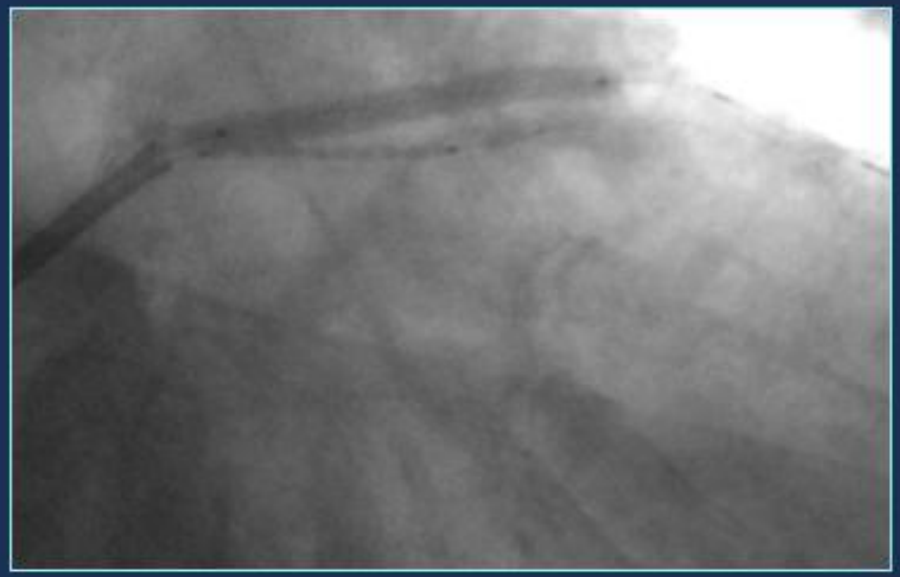
- Predictable steps
- Applicable to all lesions
- No loss of access to either branch
- Excellent acute results
- Comparable long term results to non-bifurcation

Proposed treatment if both branches are diseased and side branch 2.5 mm or more

- Predilate side branch and main branch if necessary
- **Predilate side branch with 6mm long Cutting Balloon or RTB if heavily calcified**
- Deploy stents according to Crushing
- Re-wire side branch
- **Post-dilate side branch at high pressure 14-16 atm**
- Kissing balloon 8-10 atm

Treatment of Bifurcation Lesion

Baseline



Treatment

11162/02

Treatment of Bifurcation Lesion

Final Result

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Patients, definitions and methods

164 patients with 175 bifurcational lesions

Bifurcational lesions: 1) >50% stenosis on at least one of the two branches
2) both brances treated with PCI

Vessel diameter: > 2.0 mm

Stent used: rapamycin drug eluting Cypher™Cordis, J&J, Miami, Fl

Antiplatelet therapy:
ASA at least 100 mg life time and
Ticlopidine 250 mg BID at least 3-months
(Clopidogrel 75 mg daily)

LEFT MAIN BIFURCATIONS ARE EXCLUDED **ONLY CYPHER**

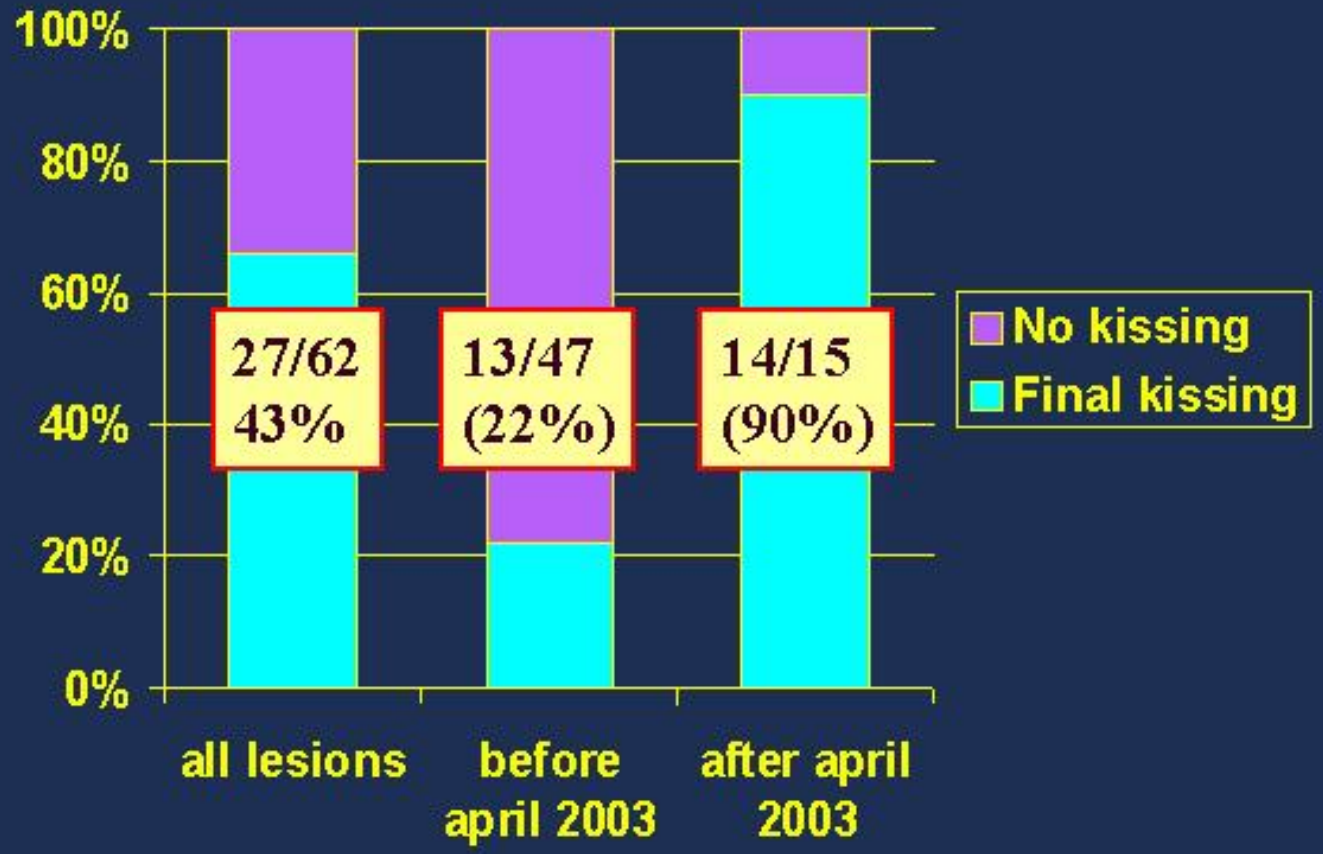
Technique of bifurcational stenting

Technique used	N=175 (%)
Only main branch stenting	74 (42)
Provisional stenting on the side branch (T stenting)	9 (5)
Modified T-stenting	33 (19)
Crushing	57 (33)
V-stenting	2 (1)

ONLY CYPHER

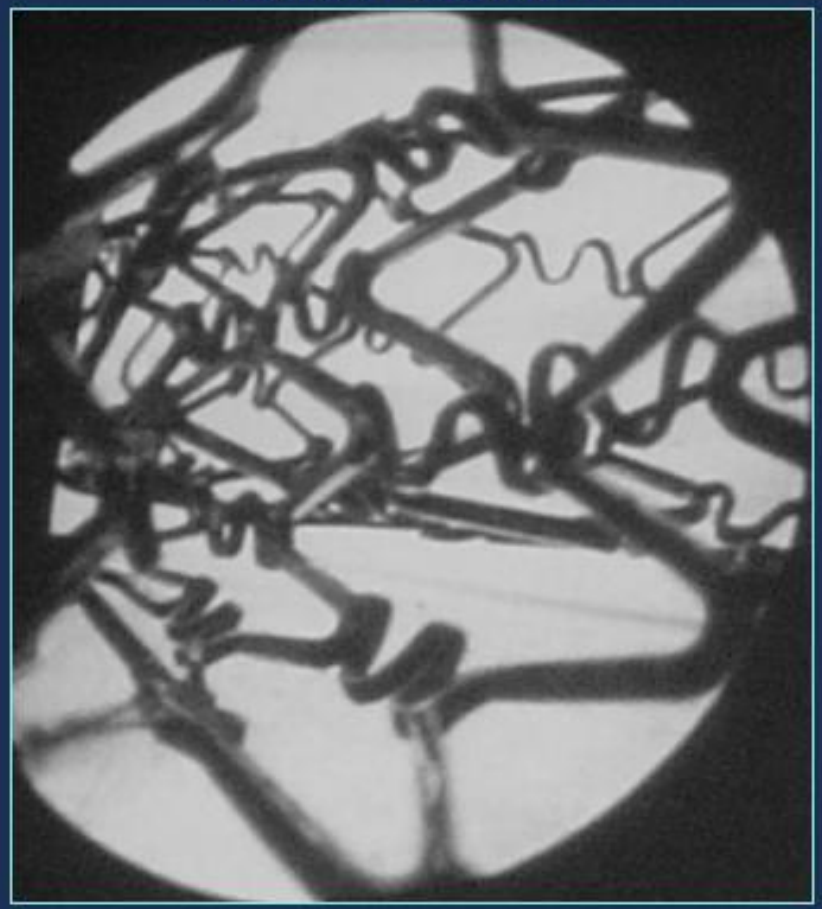
Crushing technique

(kissing inflation at the end of the procedure)

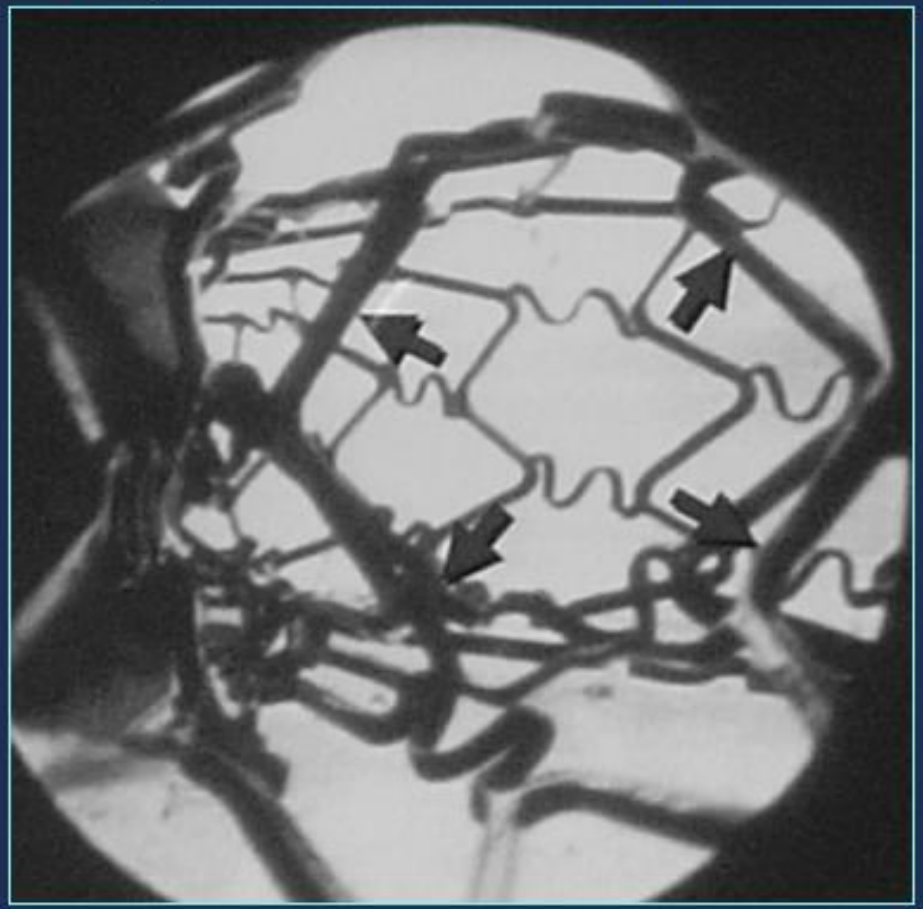


ONLY CYPHER

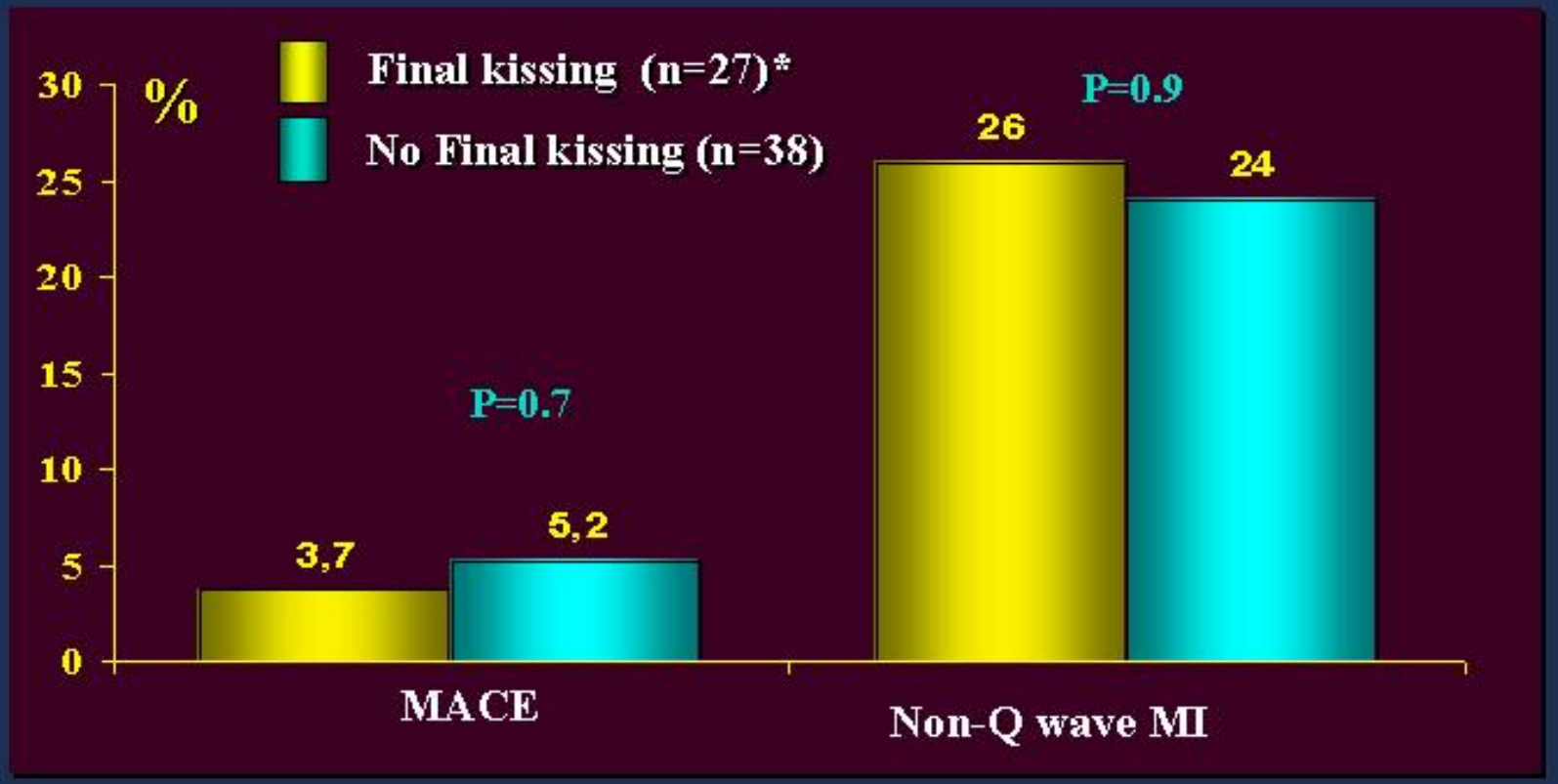
After Crush



After Kissing



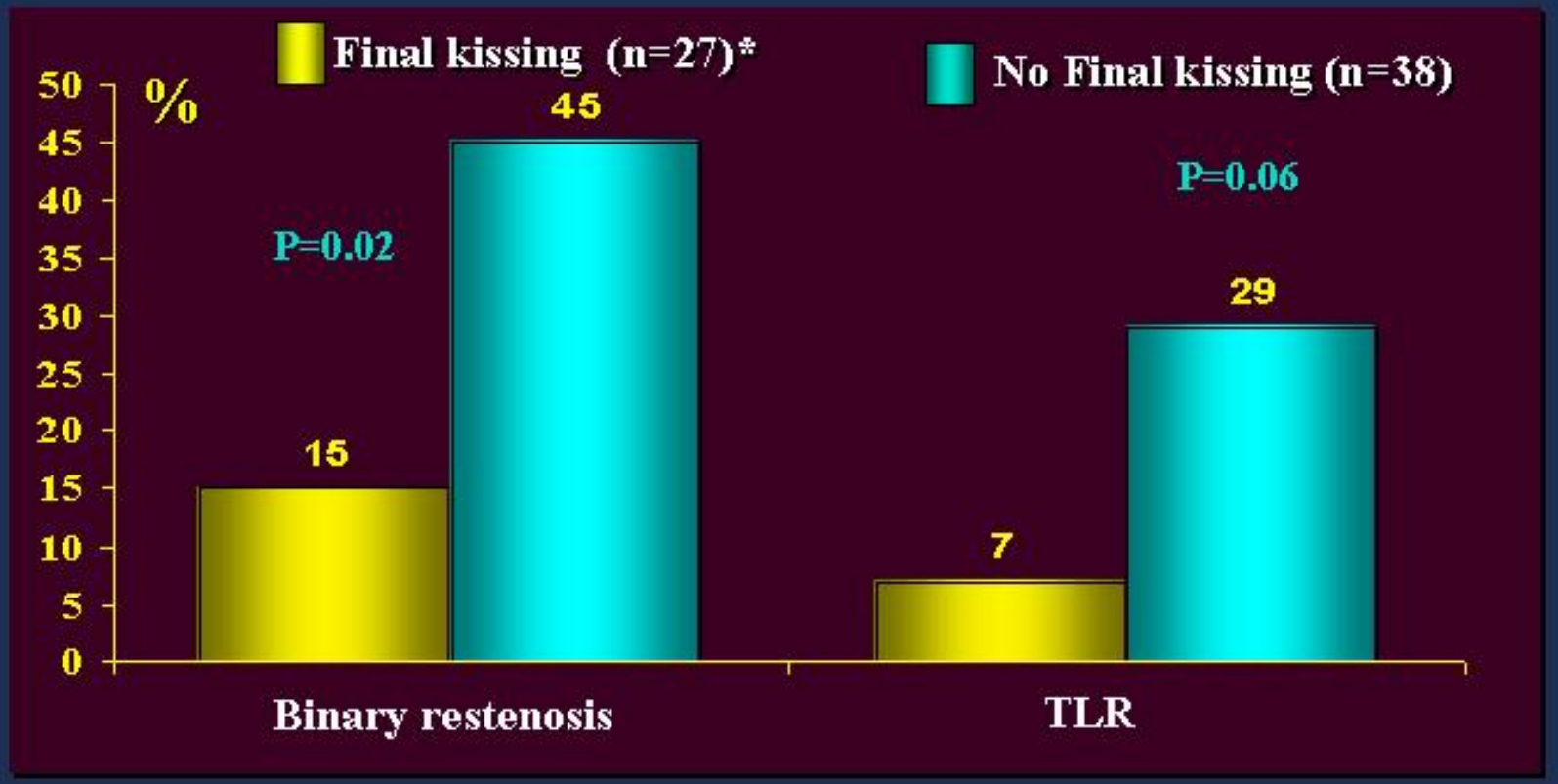
In-hospital Clinical Outcome with *"Crushing Technique" with Cypher* (65 patients) in EMO, Columbus



*3 trifurcation lesions

Non-Q wave MI: CKMB>3 x upper nl
MACE: death, Q-wave MI, reintervention

Intermediate clinical follow-up (mean:12±5 months) with *"Crushing Technique" with Cypher* (65 patients) in EMO, Columbus



Angiographic follow-up was available in 50 (79% in no final Kissing vs 60% with final kissing)

Angiographic follow-up with *"Crushing Technique"* with Cypher (65 bifurcations) in EMO, Columbus

Main branch

	FK	No FK	P
Acute gain (mm)	2.05±0.57	1.78±0.55	<0.001
Late Loss (mm)	0.49±0.67	0.62±0.73	0.01

Side branch

	FK	No FK	P
Acute gain (mm)	2.03 ± 0.72	1.27 ± 0.50	<0.001
Late Loss (mm)	0.66 ± 0.76	1.10 ± 0.75	<0.001

Angiographic follow-up was available in 50 (77%) patients

Lesion characteristics

Bifurcation characteristics

Techniques

1 stent

Provisional branch stenting

37.5%

2 stents

"Culotte"	10%
"T" stent	2.5%
"V" stent	10%
"Crush"	40%
total	62.5%

62 bifurcations

In-Hospital and 30-day Outcome with *"Crushing Technique"* (25 patients)

Events	In-Hospital	30-day
Death	0	0
MI		
Q-wave	0	1
non Q-wave	2 (8%)*	0
rePTCA	0	0
Urgent CABG	0	0
Total MACE	2 (8%)*	**1 (4%)**

*of the *crushing* population - kissing balloon in all

Conclusions

- Almost eliminated restenosis on Main Branch
- Much better c/w historicl controls on side branch but further improvement needed
- Problems in diabetics

Solutions ?

-higher drug dosage

-special stent

-better lesions preparation