APPAC
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Le RePOT dans le provisional stenting des bifurcations coronaires

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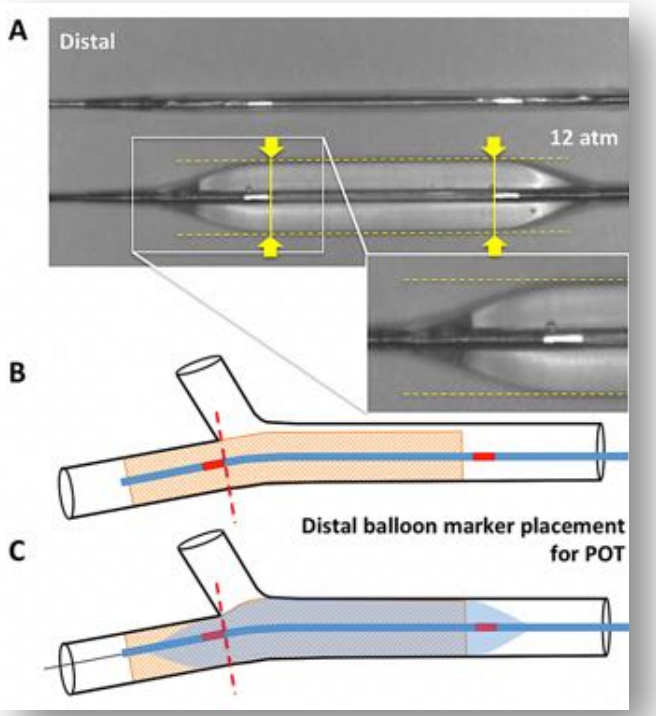
rePOT sequence



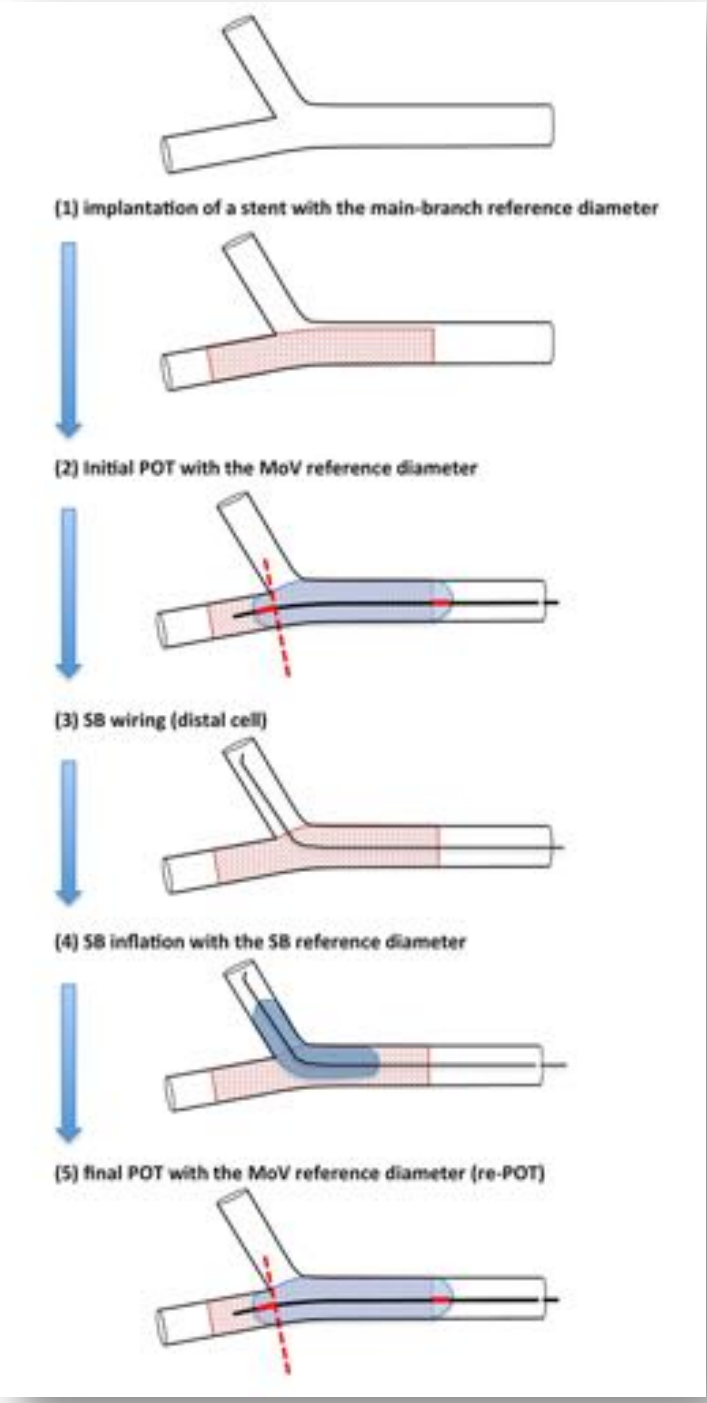
Balloon positioning
for the POT

initial
POT

SBI

final
POT

rePOT



The rePOT sequence

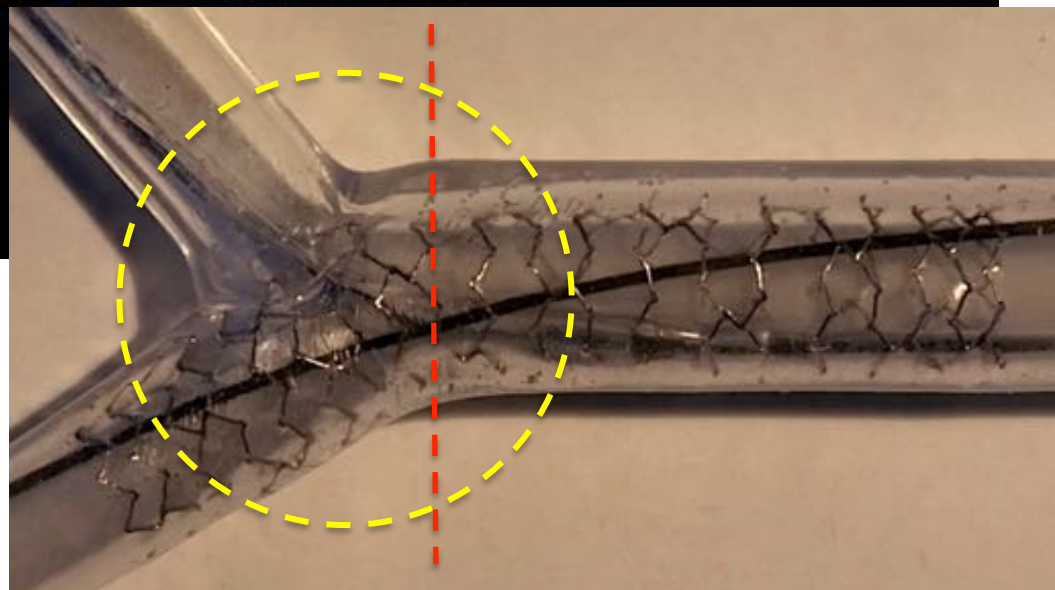
re-POT sequence

in fractal bifurcation bench model

G. Finet, F. Derimay, G. Rioufol

Hôpital Cardiologique - Lyon - France

RePOT sequence
in fractal bif bench model



Mandatory mechanical effect of the final POT in the POC

Significant benefits of Proximal Optimizing Technique (POT)

TABLE 1 Quantitative Analysis of the Mechanical Effects of POT

Pooled Results (Promus Premier and Ultimaster Stents)	Before POT (n = 40)	After POT (n = 40)
Mean MoV_{ref} D, mm	4.08 ± 0.03*	4.23 ± 0.08
2 Proximal mean stent D, mm	3.32 ± 0.08*	4.23 ± 0.08
Expected stepwise difference in diameter between MoV_{ref}-MB_{ref} according to fractal geometry	0.83 ± 0.03	NA
Measured diameter difference between MoV_{ref} and stent, mm	0.76 ± 0.06*	0
3 Ellipticity ratio of reference MoV	1.03 ± 0.02	1.03 ± 0.01
Ellipticity ratio of stent in MoV	1.04 ± 0.02	1.03 ± 0.02
1 Stent strut obstruction in SBO, %	34.0 ± 7.4*	26.0 ± 4.2
Distal cell area ratio in SBO, %	22.1 ± 15.9*	28.7 ± 19.6

Values are mean ± SD. *p < 0.05 versus after POT.

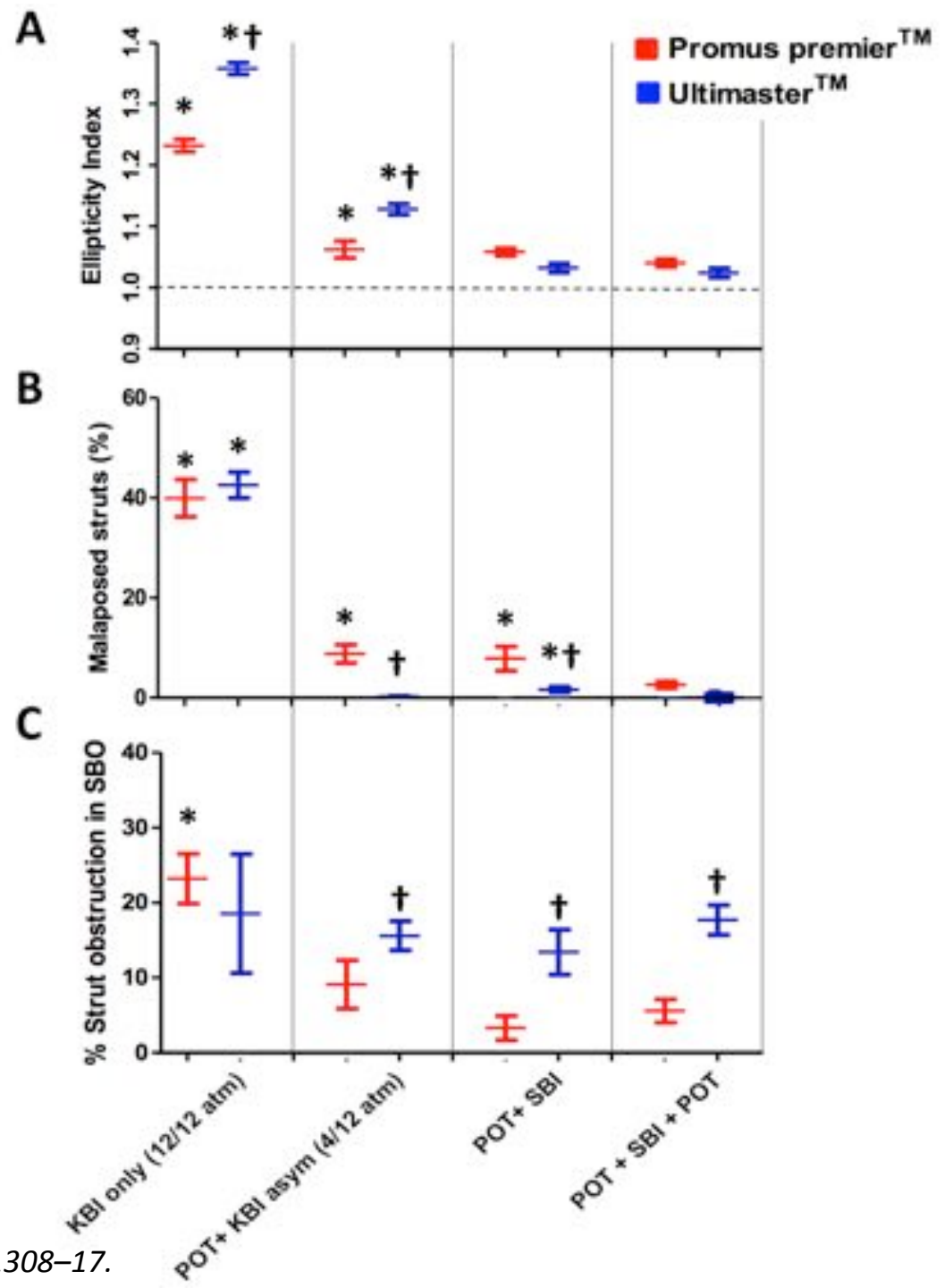
D = diameter; MB = main branch; MoV = mother vessel; NA = not applicable; POT = proximal optimizing technique; ref = reference; SBO = side-branch ostium.

G Finet, F Derimay, et al. J Am Coll Cardiol Intv 2015;8:1308–17.

RePOT (POT-SBI-POT) and the other sequences

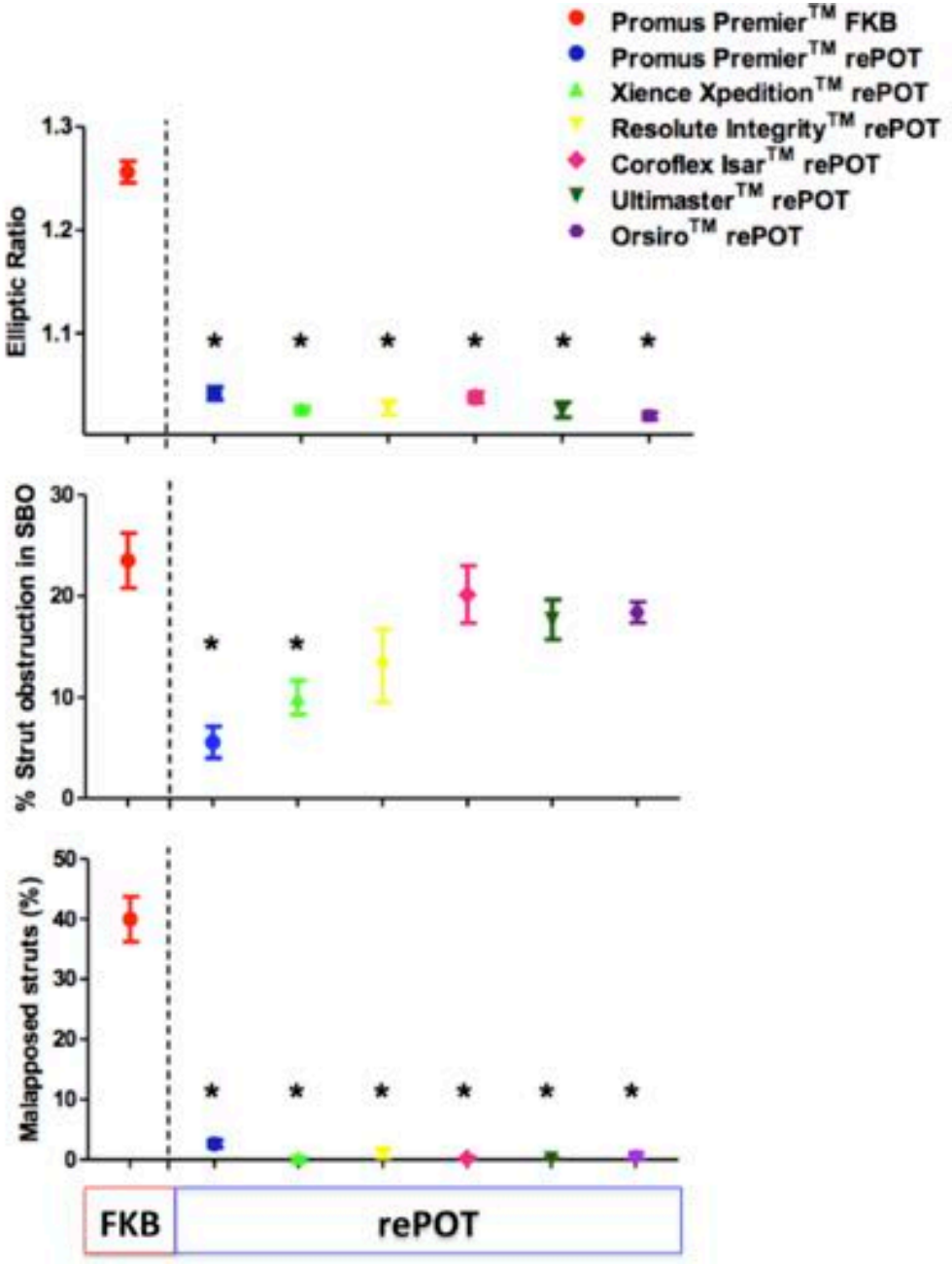
(head to head comparison)

Comparison of
1) ellipticity index,
2) global malapposed strut ratio (%),
3) strut obstruction ratio in SBO (%)



G Finet, F Derimay, et al. J Am Coll Cardiol Intv 2015;8:1308–17.

Influence of platform design of six different drug-eluting stents in provisional coronary bifurcation stenting by rePOT sequence: a comparative bench analysis.



Derimay F et al. EuroIntervention 2017

Immediate in vivo assessment of the rePOT sequence in coronary provisional stenting

Serial OCT analysis

Derimay F, Souteyrand G, Motreff P, Maillard L, Aminian A, Lattuca B, Cayla G, Rioufol G

Multicenter prospective registry (France-Belgium)

National ethics committees approved the study protocol
Identifier of french clinical trial registration: ***ANSM N° 2015-A00029-40***
All patients provided written informed consent

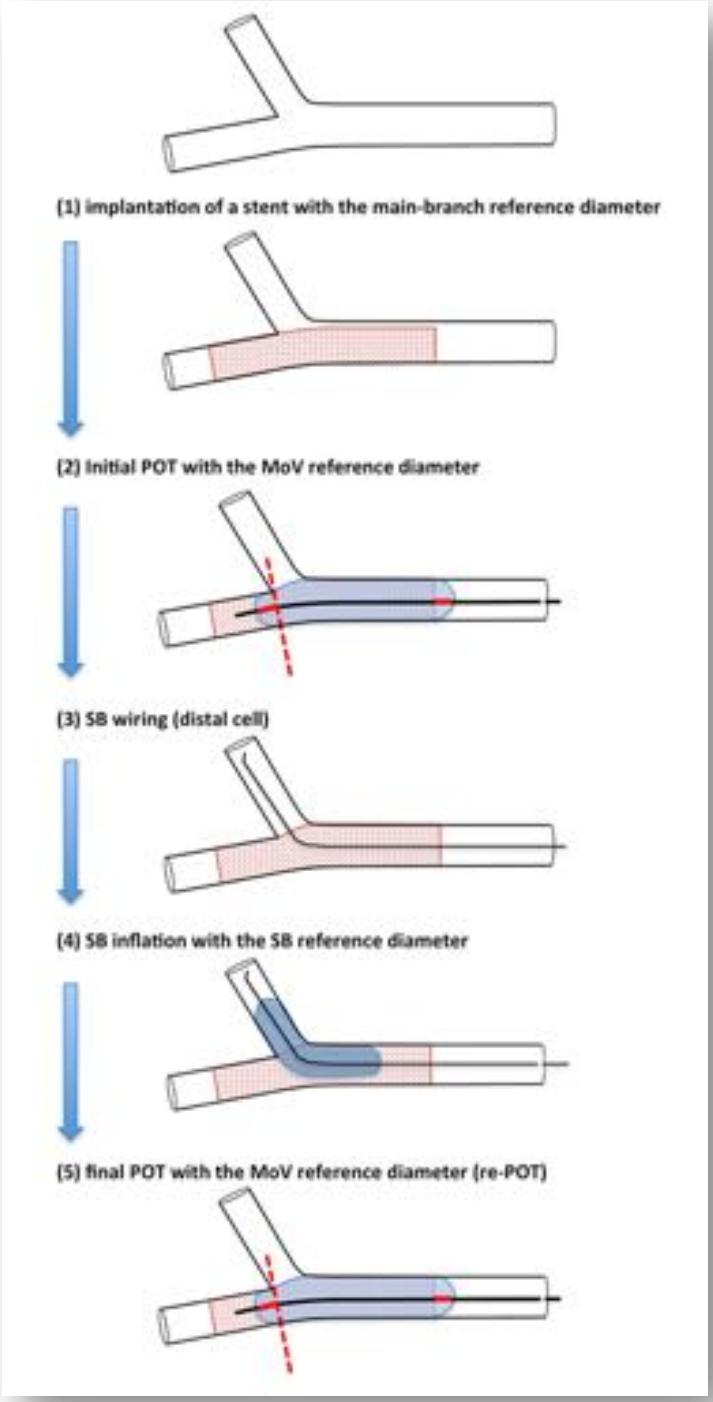
Clinical Study

Protocol flowchart

OCT run 1

OCT run 2

OCT run 3



Bifurcation LM/LAD-DIAG or others
with
MB≥2.5 mm
SB≥2.0 mm
stable lesion or ACS NSTEMI

POT with <u>compliant balloon</u>
adjusted to the $Dref_{MoV}$

RESULTS

Baseline patient characteristics

	n =106
Age (years)	65±14
Male gender	80 (75%)
Diabetes mellitus	30 (28%)
Hypertension	50 (50%)
hypercholesterolaemia	41 (41%)
Current smoker	28 (28%)
Previous MI	25 (25%)
LVEF (%)	54±13%
Radial approach	**86 (86%)**
6F	**100 (100%)**
Total contrast medium	205±81 ml
Contrast medium w/o OCT	**102±90 ml**
X-ray	73264±19420 mG.cm^2

RESULTS

Baseline bifurcation lesion characteristics

	n =106
LM	**43 (40%)**
LAD/DIAG	51 (51%)
Others	12 (12%)
%DS	77.5 ± 18.4%
“True bifurcation lesion“	**48 (37.7%)**
Medina 111	27 (27%)
Medina 100	13 (13%)
Medina others	15 (15%)
SB/MB bif angle	68 ± 26°
MoV/MB bif angle	153 ± 54 °

In vivo demonstration of POT's benefits

Clinical rePOT study	Before (re)POT (n=106)	After (re)POT (n=106)
Mean proximal ref D_{MoV}, mm	3.75±0.66	3.90±0.66*
Mean proximal D_{stent}, mm	3.10±0.52	3.84±0.66*
Difference in diameter between MoV and stent, mm	**0.65±0.42**	0.04±0.12*
Ellipticity ratio MoV	1.19±0.11	**1.13±0.12***
Stent/artery ratio MoV	**0.84±0.09**	**1.04±0.09***
	After stent implantation @ MB_D	
Global stent MAP (%)	18.9±13.4%	**3.2±3.9%***
SB Obstruction (%)	36.1±16.2%	**12.1±14.5%***

* $p<0.05$ vs before rePOT

Clinical rePOT study, submitted

Final summary on the significant advantages of rePOT

	The four methodological steps	KB	rePOT
1	Technical concept	Yes	Yes
2	Fractal bench tests	No	Yes
3	Clinical replication of bench tests	No	Yes
4	RCT or Registry	Yes but fail to improve the rate of MACEs	not yet

Long KISSS(S) principle: **"Keep it Simple, Swift, Safe, and Superior"**


Touche
au
rePOT