# RePOT (POT-SBI -POT) should be the routine in provisional stenting ?

## PRO

**Gérard FINET MD PhD**

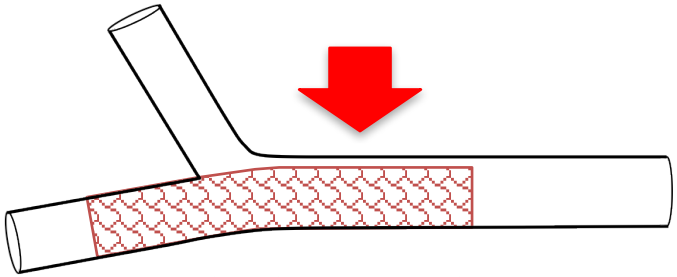
**Department of Cardiology and Interventional Cardiology**
Cardiovascular Hospital - Hospices Civils de Lyon
INSERM Research Unit 1060 CarMeN
Claude Bernard University Lyon 1
**Lyon - France**

Inserm
Institut national
de la santé et de la recherche médicale

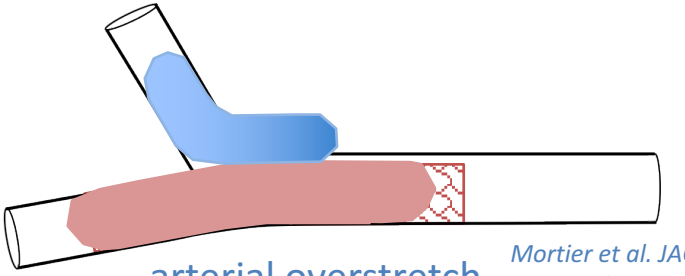
# Kissing balloon inflation fails to improve the rate of MACE compared with non-KBI treatment

*Niemela Met al. Circulation 2011;123(1):79-86.*
*Gwon HC et al. Heart 2012;98(3):225-31.*
*Yamawaki Y et al. Circ J 2014;78(1):110-2.*
*Korn HV et al. Circ Cardiovasc Interv 2009;2/535-42.*

## The detrimental effects of KB caused by the juxtaposition of the two balloons

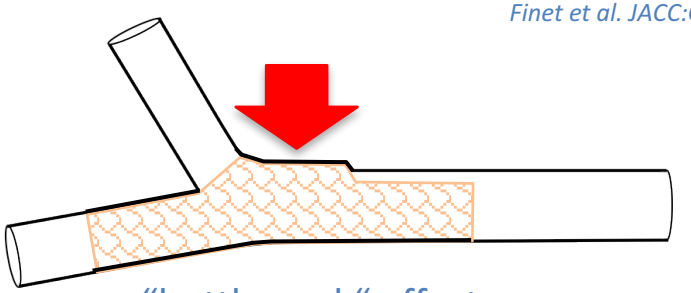


proximal unknown malapposition



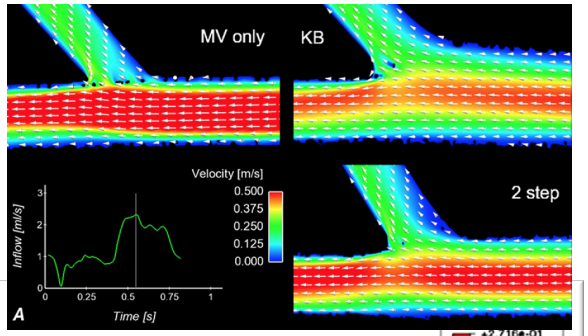
arterial overstretch

*Mortier et al. JACC:CI 2014*
*Foin et al. EuroIntervention 2011*
*Finet et al. JACC:CI 2015*

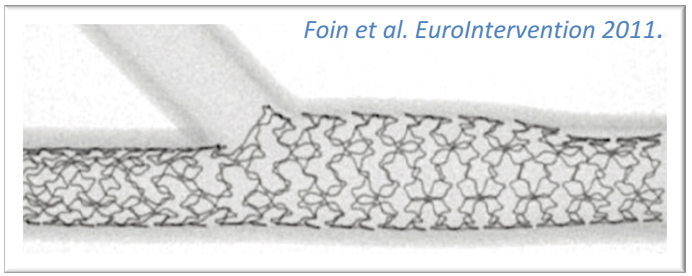


"bottle neck" effect

*Foin et al. JACC CI 2012.*




deleterious mechanobiological impacts



*Foin et al. EuroIntervention 2011.*

"bottle neck" effect

# 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.*

# The rePOT sequence

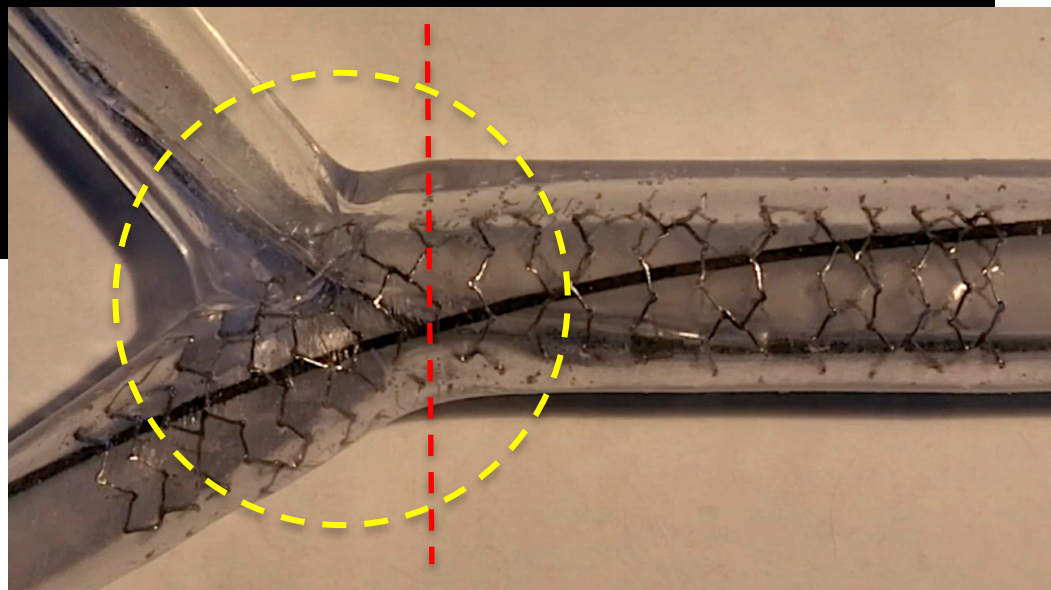
re-POT sequence

*in fractal bifurcation bench model*

G. Finet, F. Derimay, G. Rioufol

*Hôpital Cardiologique - Lyon - France*

**RePOT sequence**
**in fractal bi bench model)**

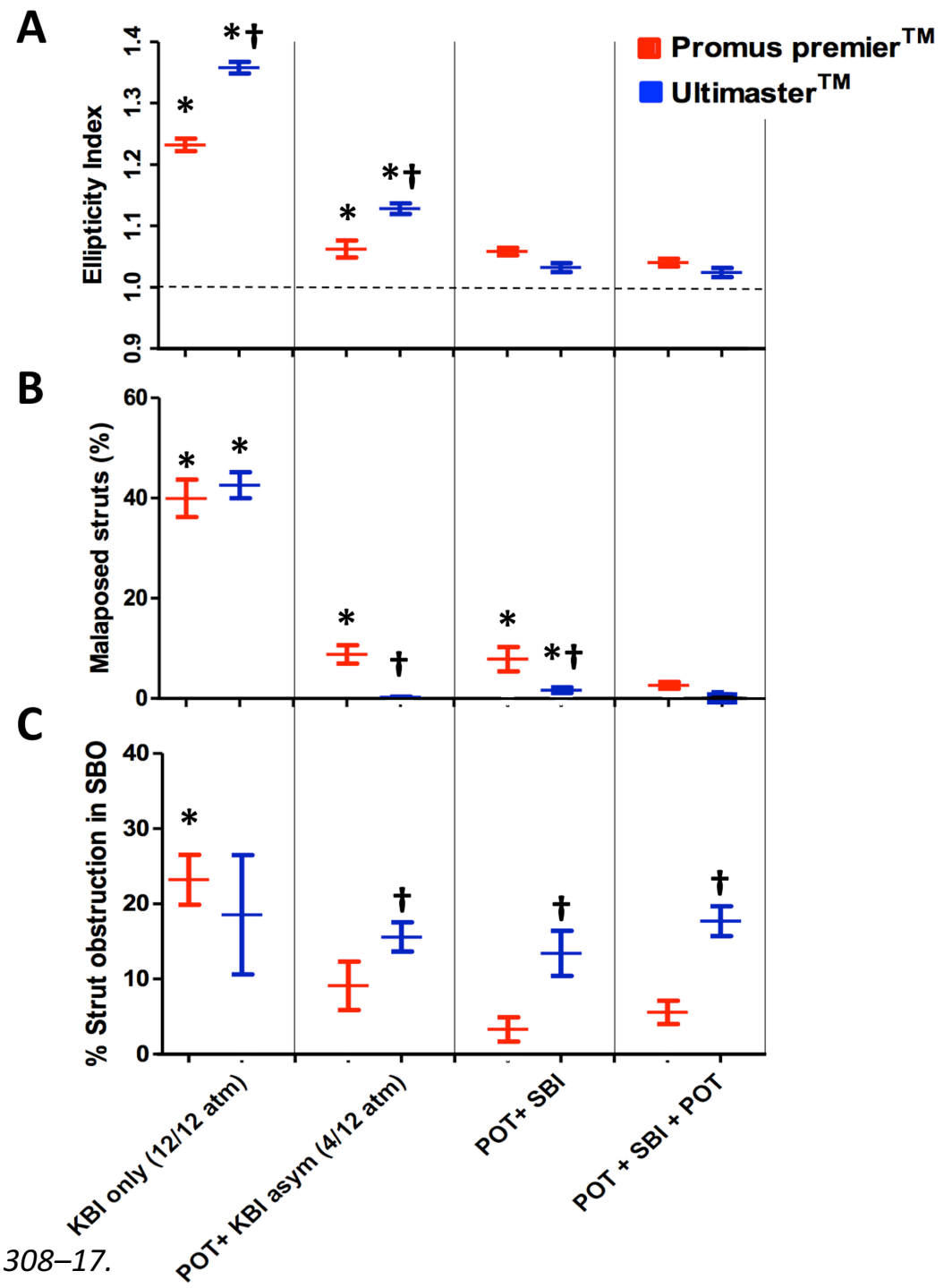


**Mandatory mechanical effect**
**of the final POT in the POC**

# 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 (%)**



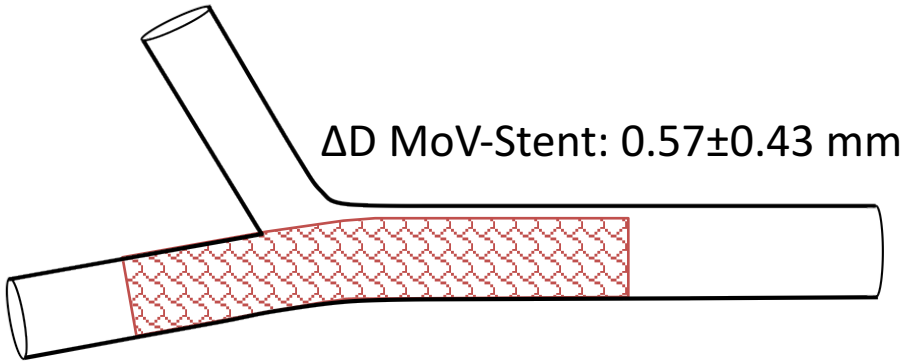

*G Finet, F Derimay, et al. J Am Coll Cardiol Intv 2015;8:1308–17.*

# Immediate in vivo OCT assessment of rePOT in Provisional Bifurcation Stenting: Serial OCT analysis

*100 patients (36% LM bif)*

## Summary

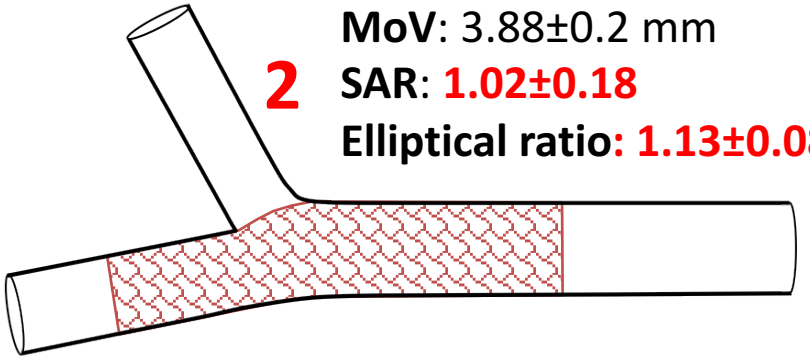
### After stent implantation




**1** **MB**: 3.06±0.5 mm
**SAR**: **1.06±0.2**

### After rePOT sequence

**3** **SBO obstruction %: 10.3±16.1%**



**2** **MoV**: 3.88±0.2 mm
**SAR**: **1.02±0.18**
**Elliptical ratio: 1.13±0.08**

**4** **Global strut MAP %: 3.16±16.1%**

**5** **Final linear fractal ratio: 0.71**

*Derimay F, Finet G, et al. Work in progress*

# 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<br>but fail to improve the rate of MACEs | not yet |

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