45th Annual International Congress of the
EGYPTIAN SOCIETY OF CARDIOLOGY
CardioEgypt 2018

Left Main PCI – Rules of Engagement

Technical challenges in LM PCI: "Case Based"

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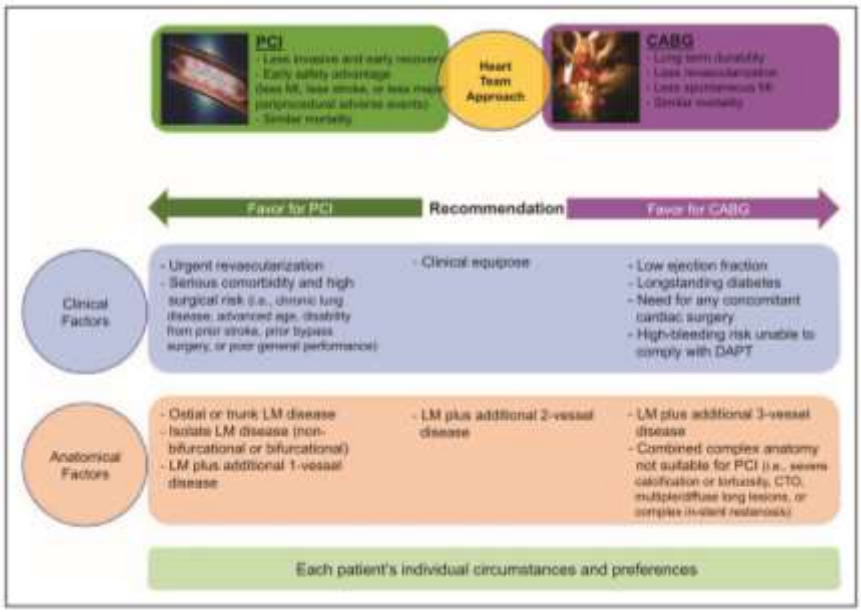
Disclosure Statement of Financial Interest

Within the past 12 months, I or my spouse/partner have had a financial interest/arrangement or affiliation with the organization(s) listed below.

Affiliation/Financial Relationship	Company
• Consulting Fees/Honoraria	• Philips Volcano • Abbott Vascular • Terumo • MSD • Astra Zeneca • Siemens • Bracco • Balton

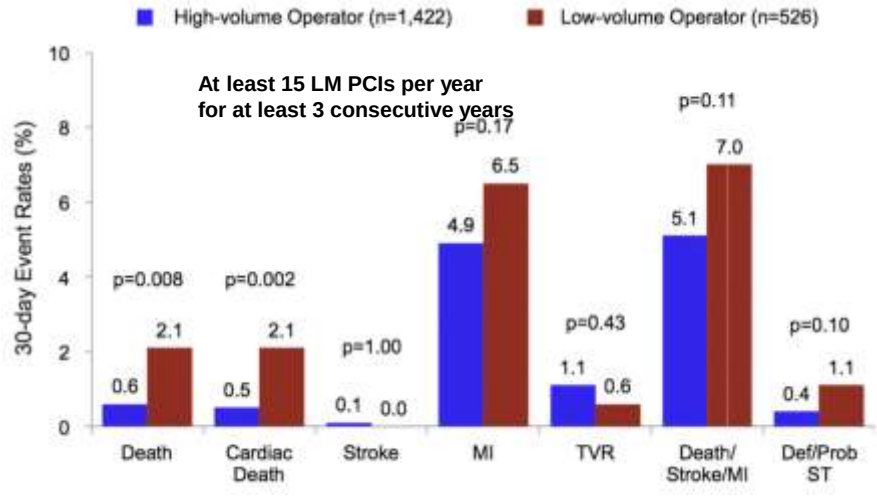
Left Main PCI remains a challenge



Park DW, Park SJ. Circ Cardiovasc Interv. 2017.

Left Main PCI remains a challenge

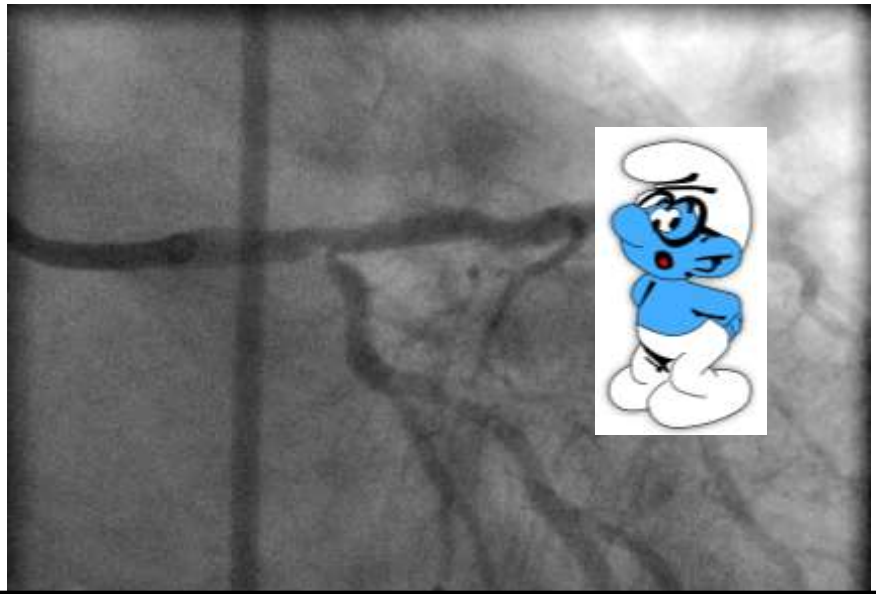
Operator and center experience



Xu B. et al. JACC Cardiovasc Interv. 2016; 9:

Complex Left Main PCI with DES

Femoral approach, Guiding catheter – 7FEBU3,5



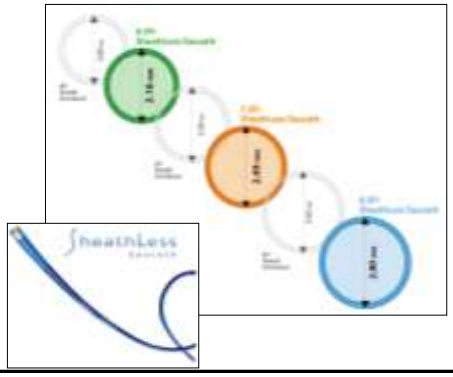
PCI Strategy for Complex Distal Left Main Disease

Vascular Access Site for Intervention

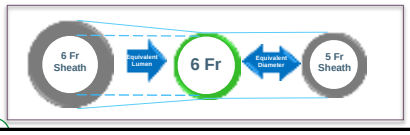
Vascular access site is not important unless does not influence one of the three important factors:

- Operator experience
- Optimal guiding catheter support
- <u>Enough internal size of the guiding catheter</u>

SheathLess Guide

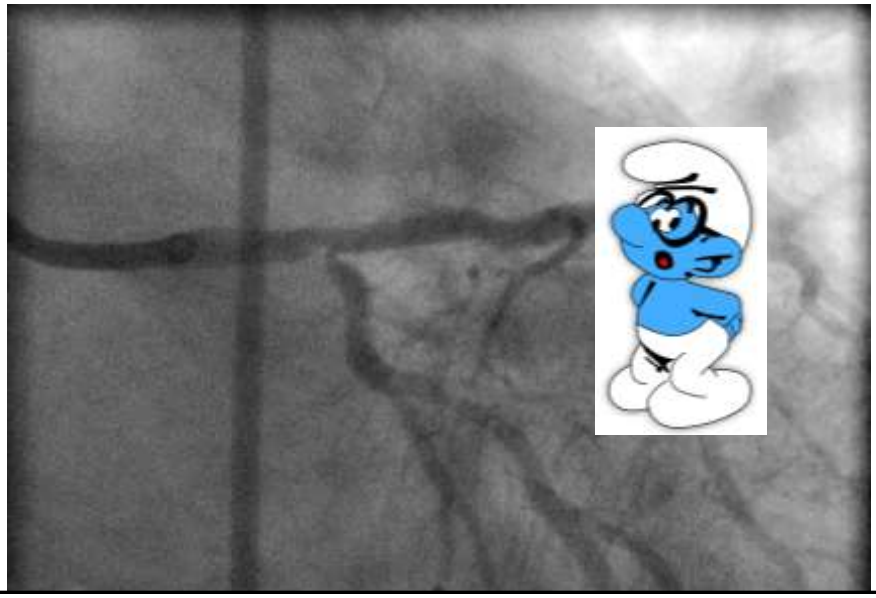


Glidesheath Slender



Complex Left Main PCI with DES

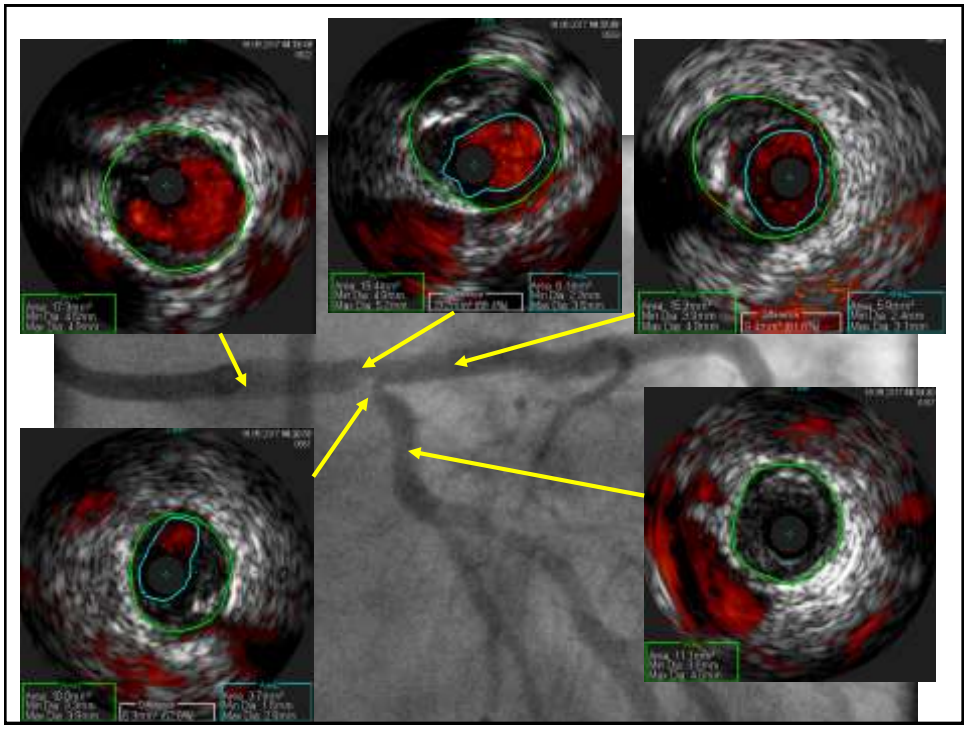
Provisional stenting vs. Two Stent Strategy



Elective two-stent strategy

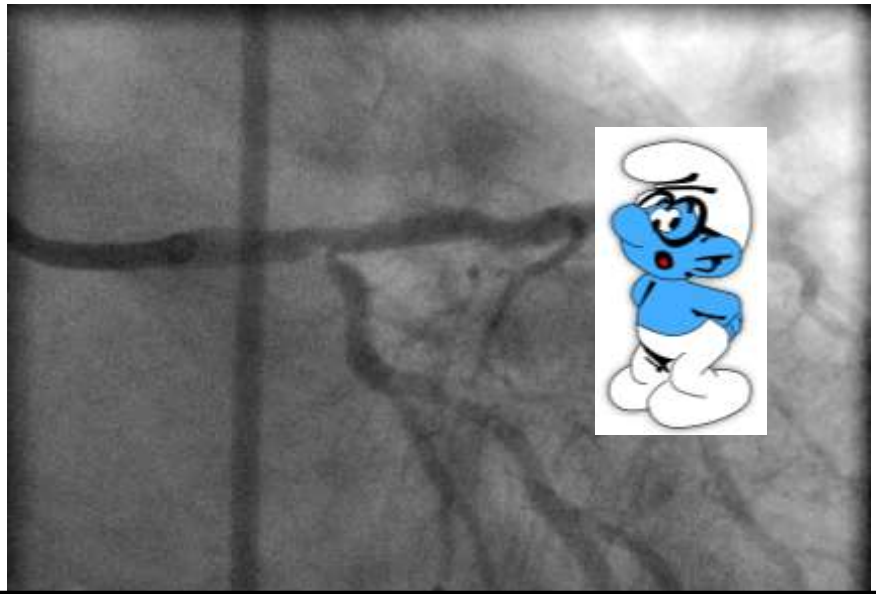
- A planned two-stent technique may be indicated for bifurcations with long SB lesions, difficult SB access or high risk of SB compromise.
- Vessel anatomy, vessel sizes, a need for stenting the SB first and operator proficiency affect the choice of strategy.
- Recommended techniques include reverse provisional stenting, T-stenting, culotte and DK-crush.
- POT is recommended and ensures optimal stent expansion in both the MB and SB.
- Always finalise a double stent procedure with KBI, followed by POT.

Lassen JF, et al. *EuroIntervention. 2018;13:1540-*

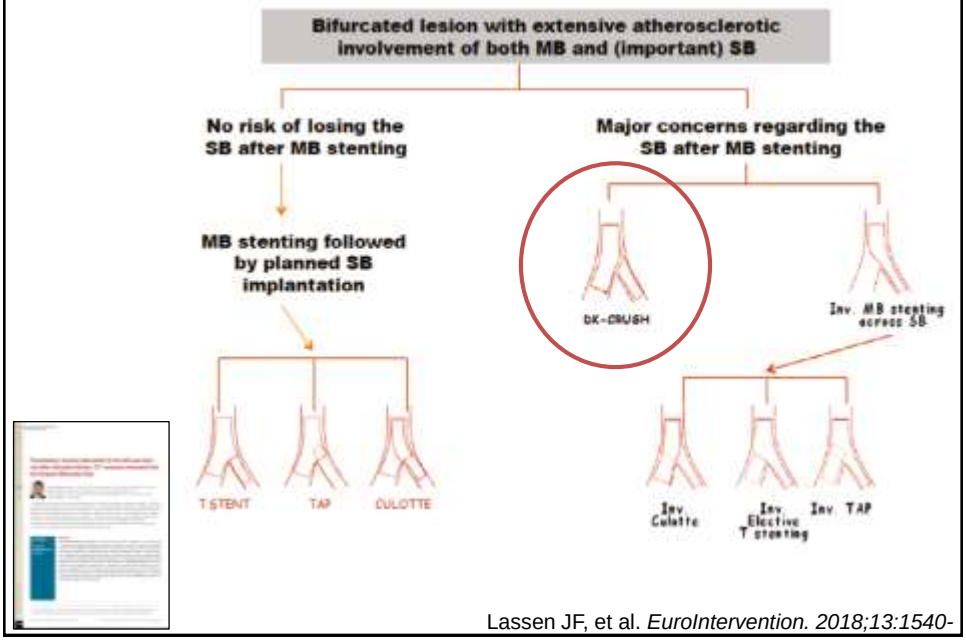


Complex Left Main PCI with DES

Two Stent Strategy – technique selection



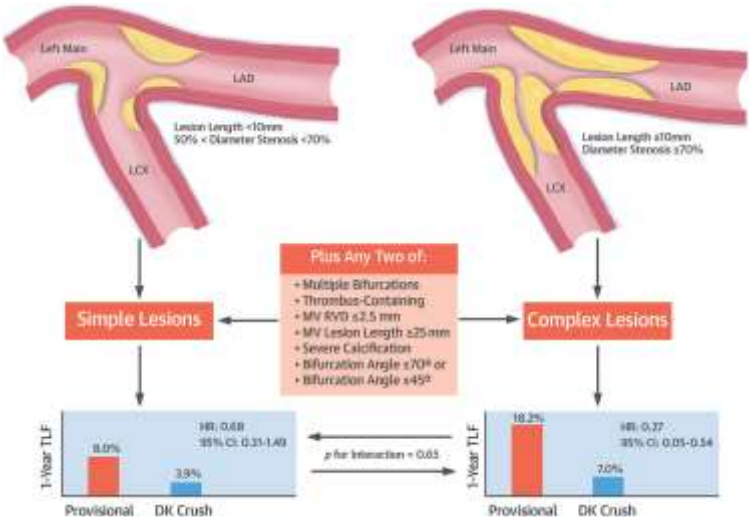
Elective two-stent strategy – which technique?



Lassen JF, et al. *EuroIntervention. 2018;13:1540-*

Double Kissing Crush Versus Provisional Stenting for Left Main Distal Bifurcation Lesions

DKCRUSH-V Randomized Trial

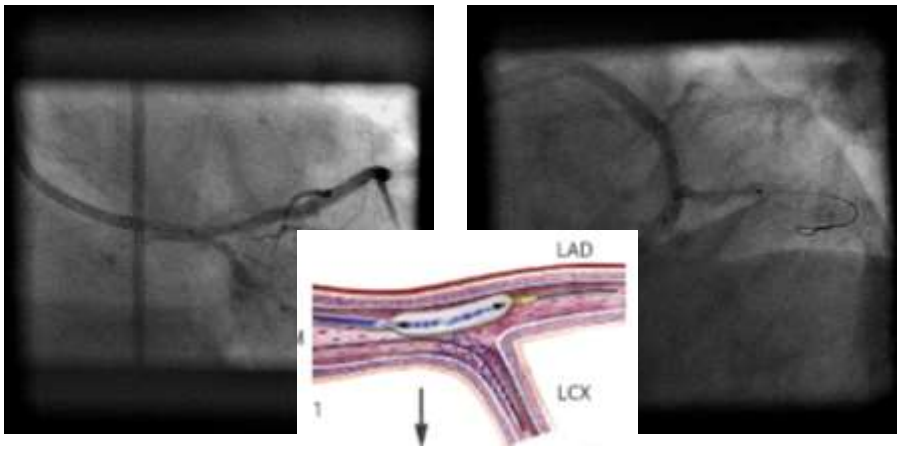


Chen SL, et al. *J Am Coll Cardiol. 2017;70:2605-*

PCI: LMCA/LAD/CX – DK-CRUSH

Lesion predilatation with NC balloons sized according to IVUS assessment
LCX – NCB: 3.0x20 mm, 14 atm
LAD – NCB: 3.5x15 mm, 14 atm

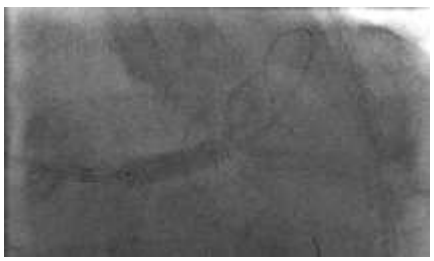
Stent implantation in LCX – DES: 3,0x23 mm, 18 atm
Postdilatation - NCB: 3,5x15 mm, 18 atm

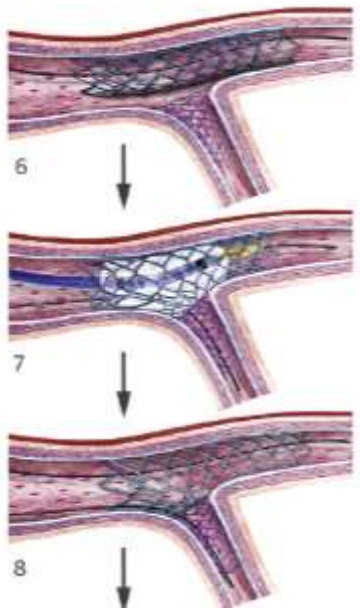


PCI: LMCA/LAD/CX – DK-CRUSH

Stent implantation in LAD
DES: 4,0x28 mm, 18 atm

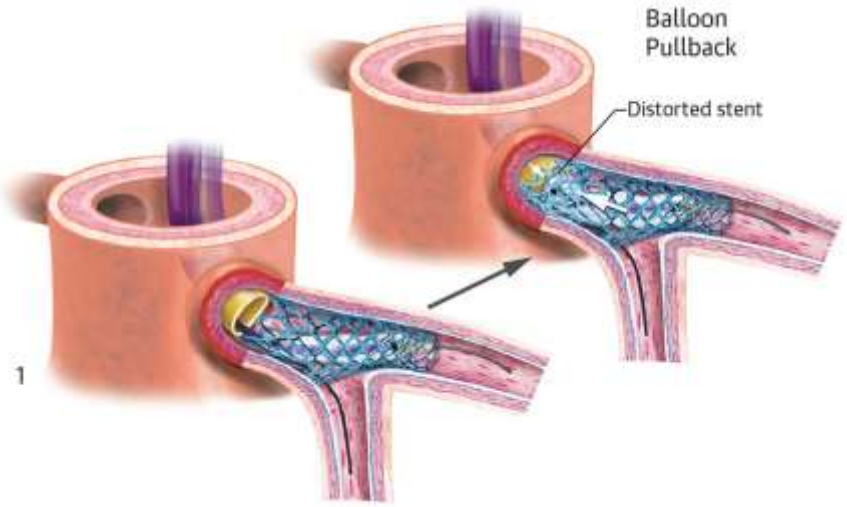
Proximal Optimization Technique (POT)
NCB: 4,5x15 mm, 14 atm





Two Mechanisms of Stent Longitudinal Distortion When Stenting the Left Main Coronary Artery

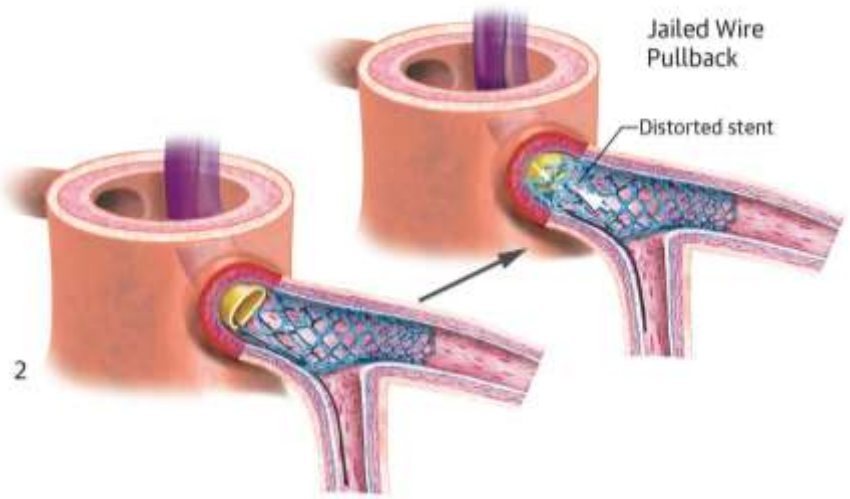
Balloon Pullback



Rab T, et al. J Am Coll Cardiol Intv 2017; 10: 849–65

Two Mechanisms of Stent Longitudinal Distortion When Stenting the Left Main Coronary Artery

Jailed Wire Pullback

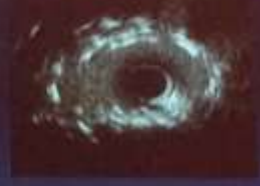


Rab T, et al. J Am Coll Cardiol Intv 2017; 10: 849–65

IVUS-guided Left main PCI

Stent Deformation in EXCEL

- Multiple overlapping strut layers within a single stent accompanied by stent shortening.
- Observed in 33 pts (6.6%) and was most commonly located at the LMCA ostium (27/33 [81.8%])



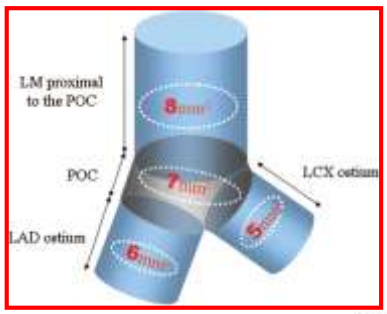
	Deformation	No Deformation	P value
3-yr LMCA-related events	HR [95%CI] = 2.15 [1.05, 4.40], p=0.04		
Cardiac death/MI/IDR	28.3%	13.9%	0.02
- Cardiac death	9.4%	3.6%	0.08
- MI	18.9%	4.7%	0.0005
- Ischemia-driven TLR	19.9%	8.0%	0.02
Definite/probable ST	3.1%	1.1%	0.29

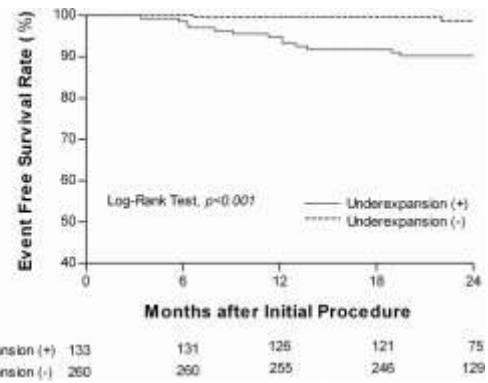
Gary Mintz. European Bifurcation Club Meeting, Porto 2017

Angio vs. IVUS-guided Left main PCI

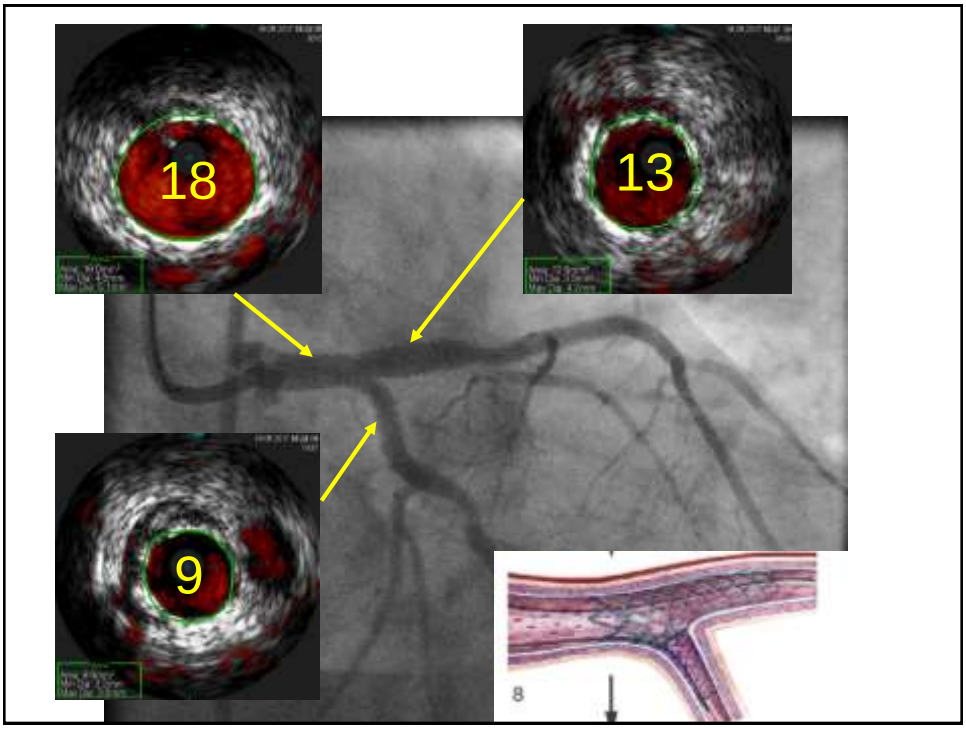
Comprehensive Intravascular Ultrasound Assessment of Stent Area and Its Impact on Restenosis and Adverse Cardiac Events in 403 Patients With Unprotected Left Main Disease

Soo-Jin Kang, MD, PhD; Jung-Min Ahn, MD; Haegeun Song, MD; Won-Jang Kim, MD; Jong-Young Lee, MD; Duk-Woo Park, MD, PhD; Sung-Cheol Yun, PhD; Seung-Whan Lee, MD, PhD; Young-Hak Kim, MD, PhD; Cheol Whan Lee, MD, PhD; Gary S. Mintz, MD; Seong-Wook Park, MD, PhD; Seung-Jung Park, MD, PhD



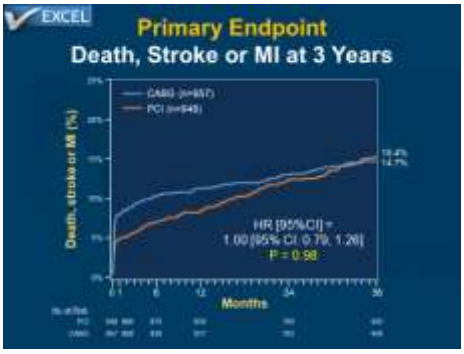


Circ Cardiovasc Interv. 2011;4:562-569

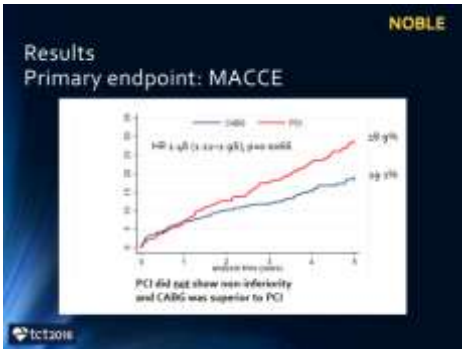


PCI versus CABG for Left Main Disease

IVUS guidance – 77%

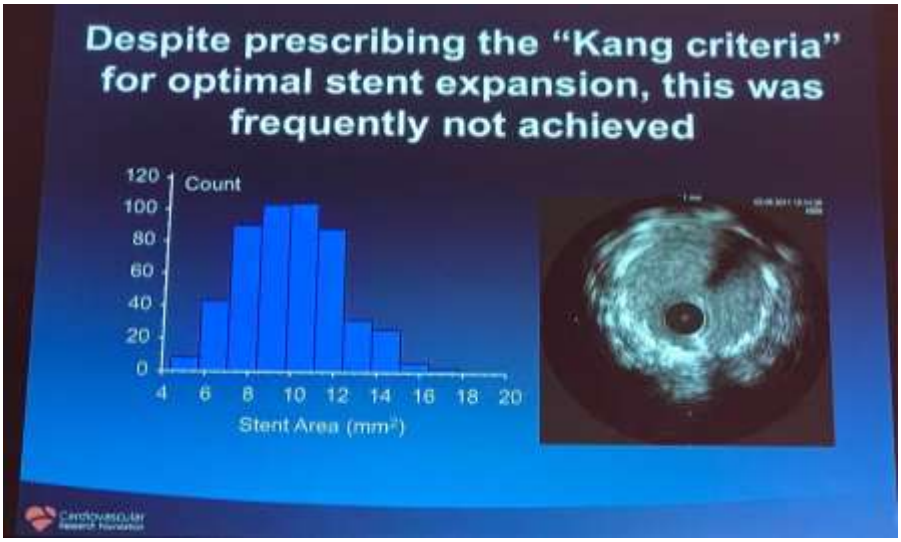


IVUS guidance – 74%



- ✓ In the IVUS sub-study of the Excel trial decision making within the procedure was changed by IVUS in **52%** of cases.
- ✓ There was a strong trend towards both excess mortality and MACE at 30-days in those with the smallest MLA post PCI (MSA=**4.4-8.7** mm^2).

IVUS-guided Left main PCI

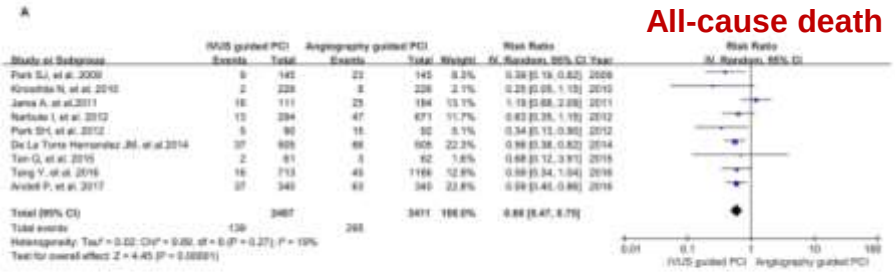


Gary Mintz. European Bifurcation Club Meeting, Porto 2017

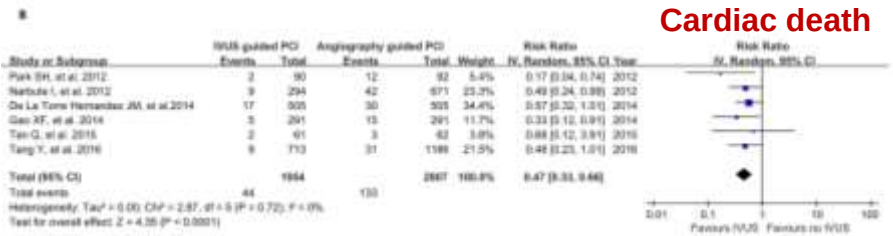
Left Main PCI remains a challenge

IVUS-guided PCI for Left Main Disease
Meta-analysis of available data

All-cause death



Cardiac death



Ye Y, et al. PLoS One. 2017;12:e0179756. doi: 10.1371/journal.pone.0179756. eCollection

Left Main PCI remains a challenge

The 12th consensus document from the European Bifurcation Club

- LM PCI remains challenging and the entire team should be able to manage serious complications.
- Stent implantation involves the bifurcation in in 80-90% of LM stenting cases.
- Provisional stenting is the recommended strategy in most distal LM bifurcation lesions.
- Planned two-stent techniques may be indicated in cases with long LCX lesions, high risk of LCX compromise or difficult access.
- It is strongly recommended to have access to intravascular imaging modalities (IVUS/OCT/OFDI) during elective PCI of LM

Lassen JF, et al. Eurointervention. 2017.

Thank you for your attention!

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