

CTO with Trippl Kissing

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โรงพยาบาลขอนแก่น
KHON KAEN HOSPITAL

Welcome

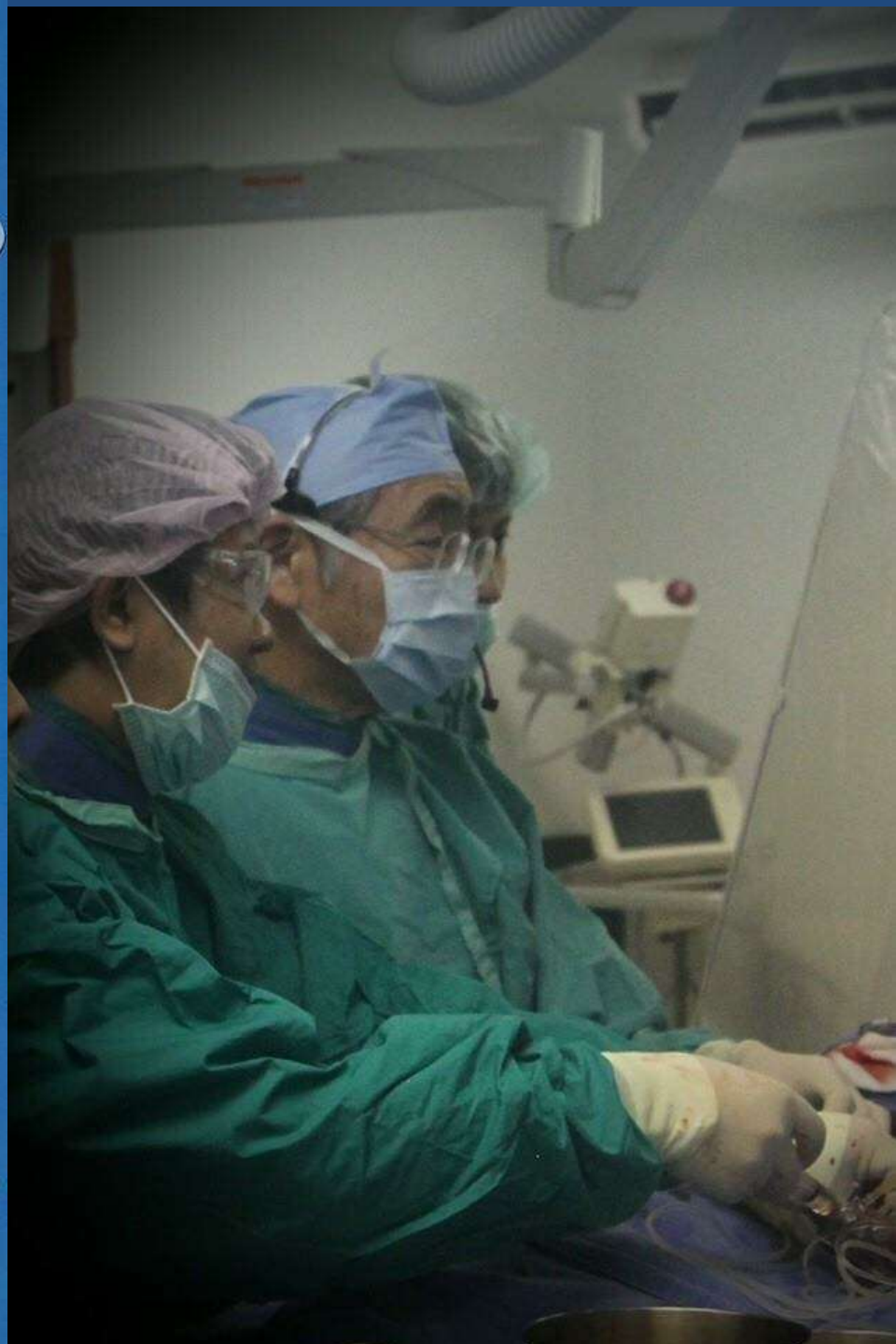


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- 70 yrs Thai male
- CAD risk : smoking ,
- Hx of COPD
- Presence with NSTEMI and CHF
- Echo : LVEF 28% with dilated LV , severe hypokinesia of anteroapical wall.Mild MR , mild AR

- SYNTAX Score was 48.1
- Patient and relatives denied CABG

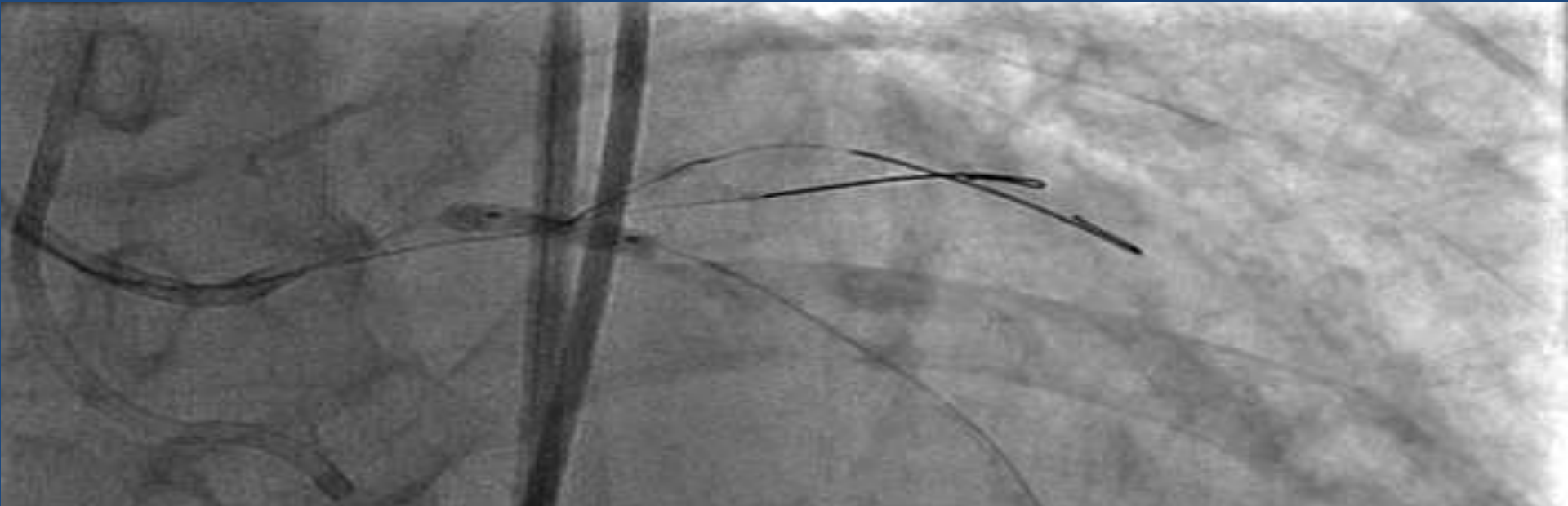
PCI to dLM/LCX/LAD and RI

- Medication : ASA 81 mg , Clopidogrel 75 mg, Heparin 8,000 units
- Bilateral injection
- Launcher SL 4.0/7Fr guiding LCA , AL1 ST 6 Fr for RCA

- Runthrough floppy into LCX
- SION Blue into RI
- FIELDER XTR with CARAWEL micro cath into LAD



- IVUS Finding
- Vessel Diameter
 - pLM 4.5 mm
 - dLM - pLAD 3.5 mm
 - mid LAD 2.7 mm

- 
- 2.5x20mm NC TREK upto 24 atm proximal-mid LAD
 - NSE 3.0x13mm LM-ostial LAD 8-14 atm
 - Tripple Kissing
 - LM- LAD: 3.0x13 mm NSE @14 atm
 - LM –LCX : 2.0x15 mm TREK @10 atm
 - LM – RI : 2.0x15 mm TREK @16 atm



➤ Tripple Kissing

LM- LAD: 3.0x13 mm NSE @14 atm

LM –LCX : 2.0x15 mm TREK @10 atm

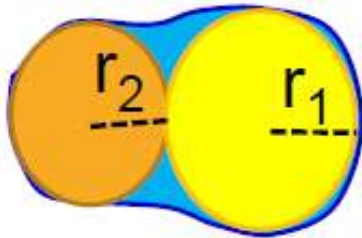
LM – RI : 2.0x15 mm TREK @16 atm

Vascular Branching Laws

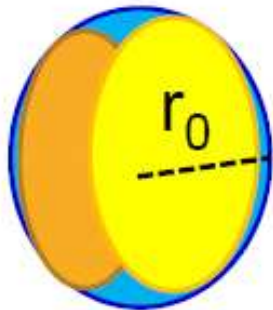
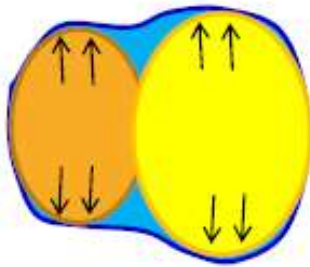
Bifurcation diameter models	Relationship	Physical mechanisms
HK	$D_m^{\frac{7}{3}} = D_l^{\frac{7}{3}} + D_s^{\frac{7}{3}}$	Minimum Energy
Finet	$D_m = 0.678 \times (D_l + D_s)$	“Fractal”-type relation
Murray	$D_m^3 = D_l^3 + D_s^3$	Minimum Energy & WSS ~ Constant
Area-preservation	$D_m^2 = D_l^2 + D_s^2$	Velocity ~ Constant
where D_m , D_l , and D_s are the diameters of mother, larger and smaller daughter vessels, respectively.		

Area-preservation and Finet models are empirical and do not have a physical basis.

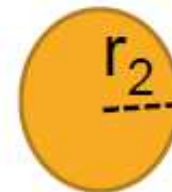
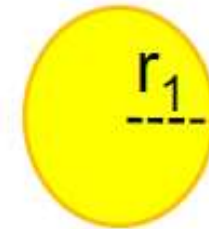
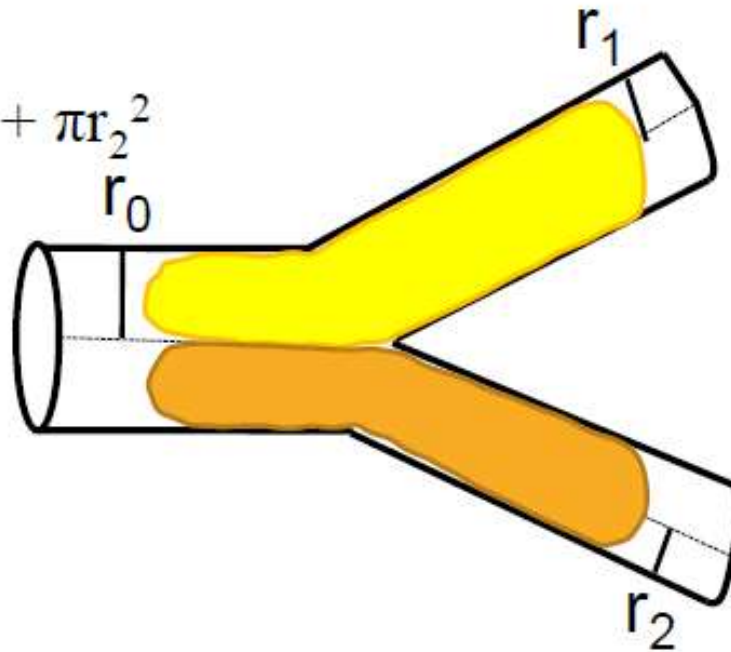
Kissing balloon inflation



$$\text{PMV area} = \pi r_1^2 + \pi r_2^2$$

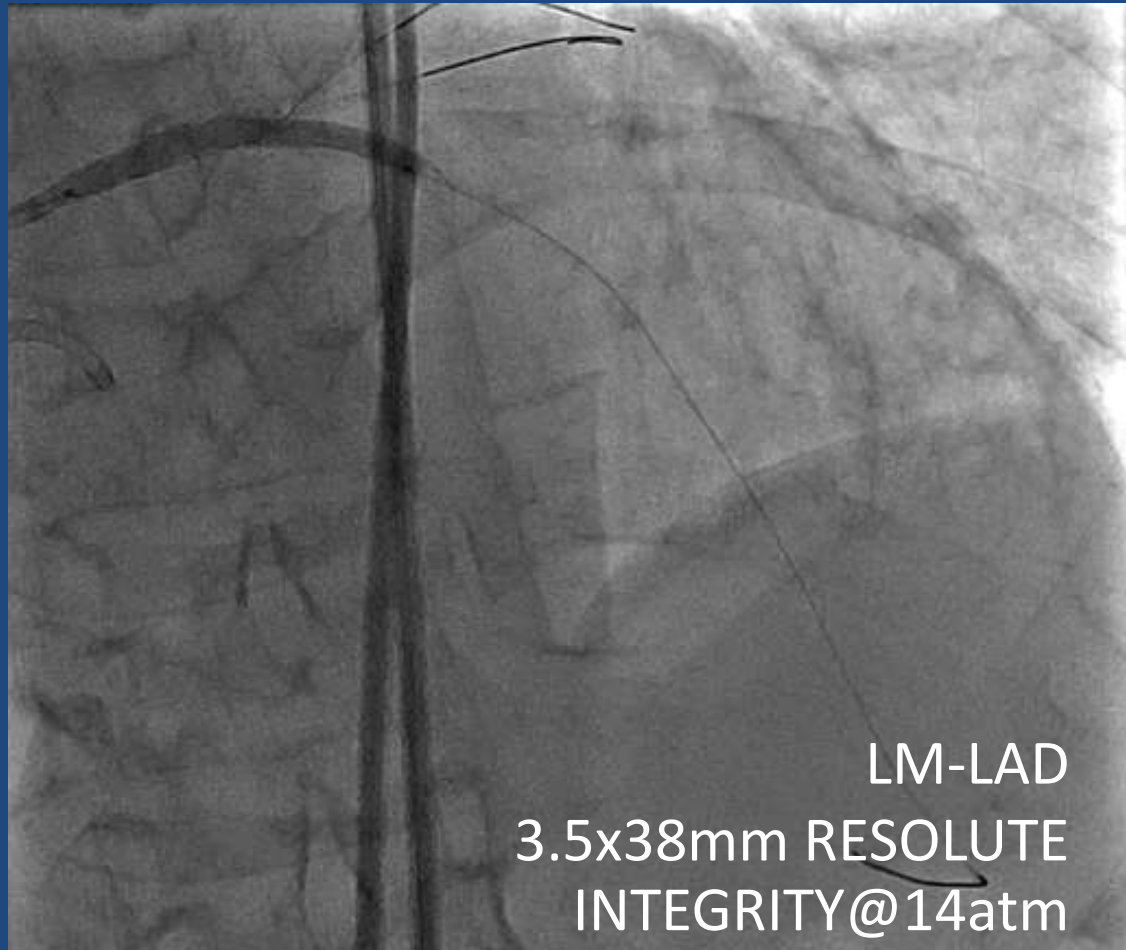


$$\pi r_0^2 = \pi r_1^2 + \pi r_2^2$$



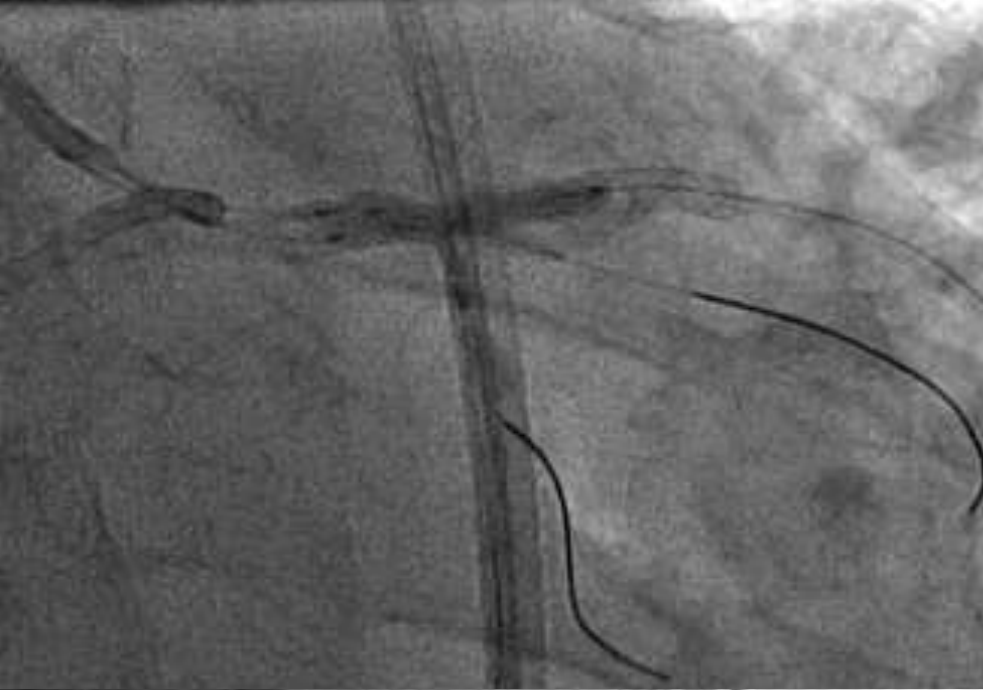
Mitsudo's formula

$$r_0^2 = r_1^2 + r_2^2$$



LM-LAD

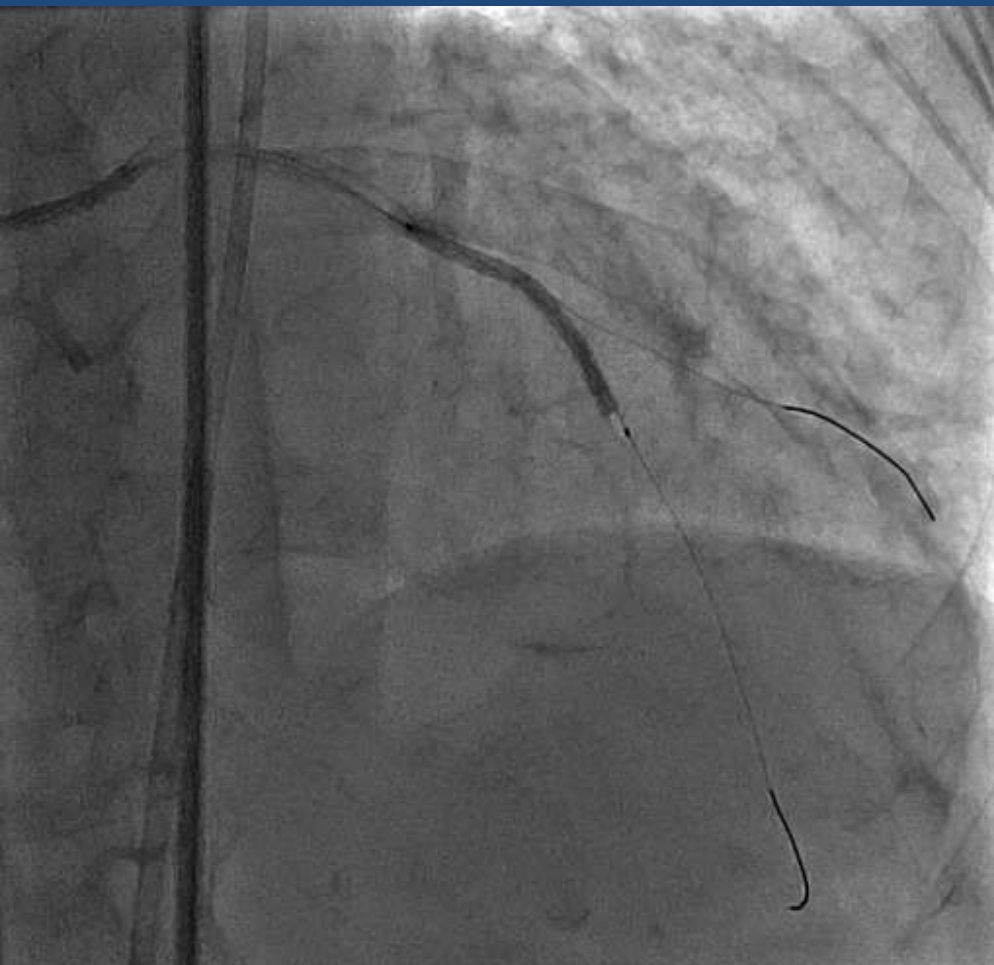
3.5x38mm RESOLUTE
INTEGRITY@14atm



- 3 Kissing Post Dilatation
LM-LAD NC TREK 3.0x20mm
LM-LCX TREK 2.0x15 mm
LM-RI TREK 2.0x15 mm



LM post dilatation with
4.5x15 mm NC TREK@ 14 atm



Mid LAD BMTX Flex 2.5x36 mm



Mid-distal LAD POBA 2.0x15 mm TREK