

OCT guided BVS for LMCA to LAD : Optimising the 'Pot'

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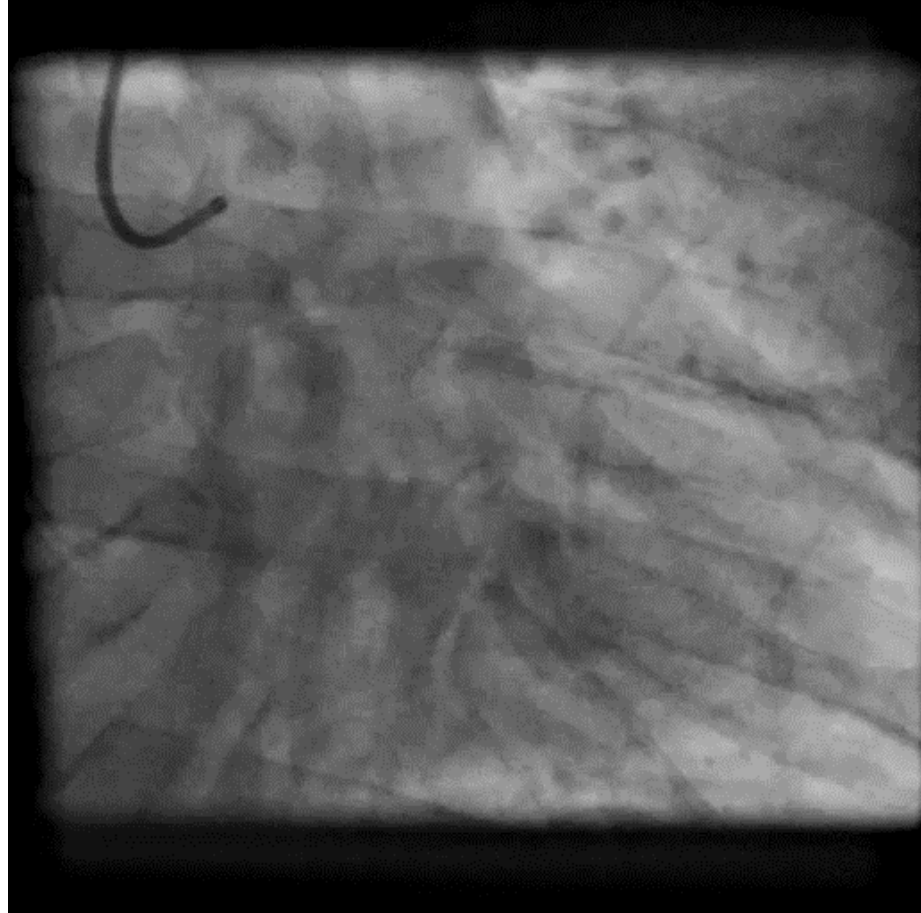
Consultant Interventional Cardiologist

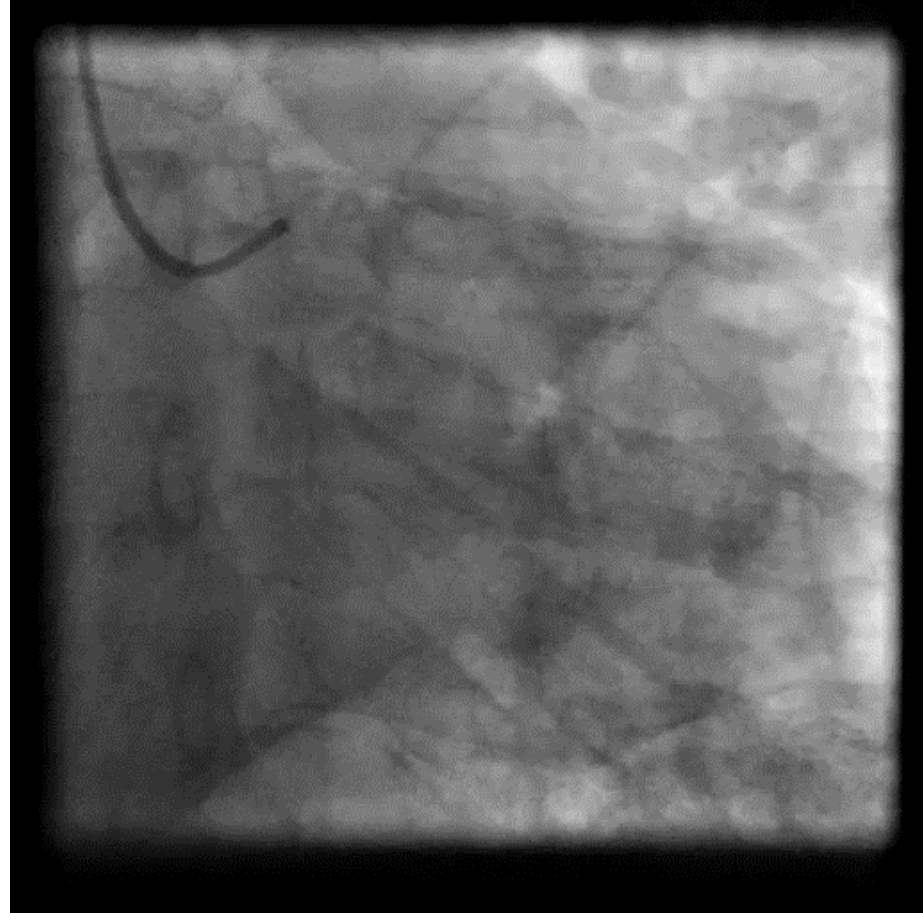
Christchurch Hospital and Canterbury DHB(Univ of Otago)

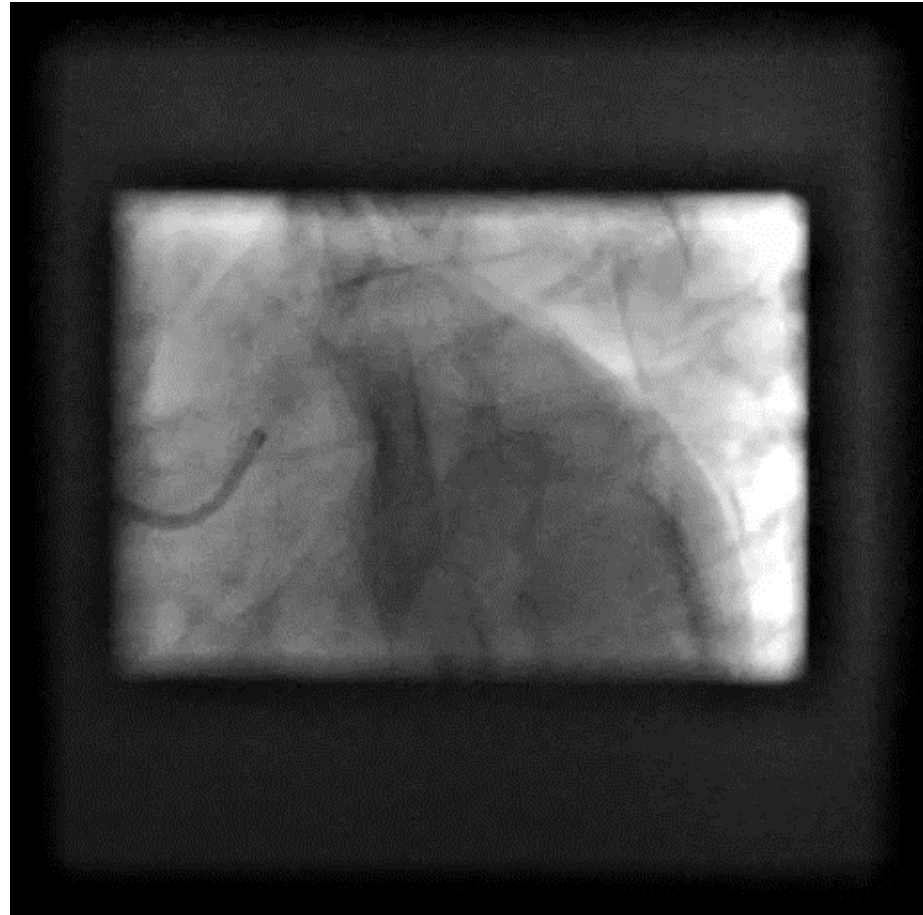
Christchurch ,New Zealand

41yr Male with no Cardiac risk factors

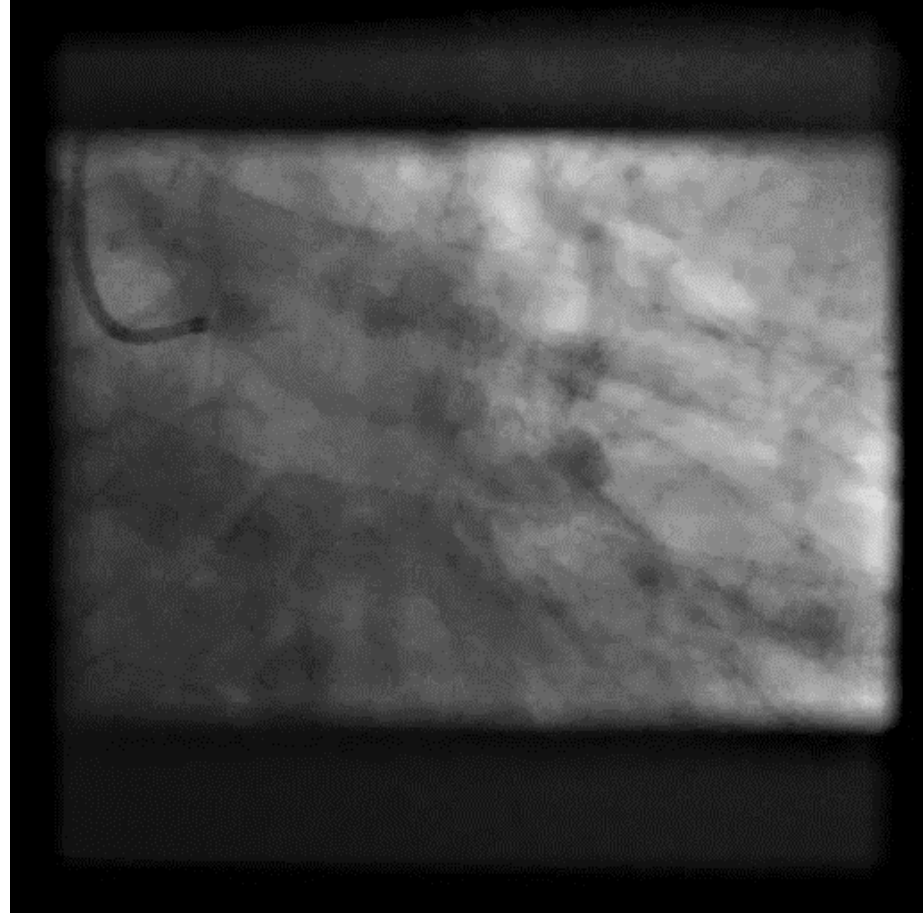
- 4wks history of sudden onset central chest pain while exercising, associated with vague SOB, no radiation.
- HR 78b/min, BP 136/79, rest normal
- ECG showed no dynamic changes, serial TNI's negative.
- ETT
 - He did 7mins 21 Sec and had some atypical chest discomfort, no chest pain .
 - Subtle ST changes in the inferior leads, but no significant ST depression.
- Coronary Angiogram, the movie tells the story ...!!!











6 PM on Friday, some thing needs to be done

- Low Syntax score
- Looks like impending plaque rupture
- PCI for LMCA to LAD,(*Very Little argument with that thought...!!*)
- 41 year old
- Prospect of many years of Metallic stent in Left Main Coronary
- LMCA looks 3-3.5 mm in diameter
- I Decided to OCT LMCA and LAD
- and consider ABSORB BVS...!!!

ABSORB BVS for LMCA, only case reports..!!

Bioresorbable vascular scaffolds for left main lesions; a novel strategy to overcome limitations

Tadashi Miyazaki ^{a,b,1}, Vasileios F. Panoulas ^{a,c,1}, Katsumasa Sato ^a, Toru Naganuma ^a, Azeem Latib ^a, Antonio Colombo ^{a,*}

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^c *Imperial College London, National Heart and Lung Institute, London, UK*

- Suitability of BVS
- LMCA Size 3-3.5mm
- SB 2.5mm (max 3 mm)
- Medina 1,1,0 (or 0,1,0)
- (scaffold area 12.6mm² equivalent to LMCA diameter 4mm)

[International Journal of Cardiology 175 \(2014\) e11–e13](#)

Potential advantages of BVS in LMCA

- Cage free lumen after 2–3 years
- Temporary SB jailing may outweigh the disadvantages from a comparatively smaller, but well apposed, scaffold.
- If no angio evidence of pinching of the LCx ostia with TIMI 3 flow, despite temporary overhang of a neocarina, a long term, free from restenosis result is **(Could be..!!)** expected, thanks to the large vessel size and high shear stress

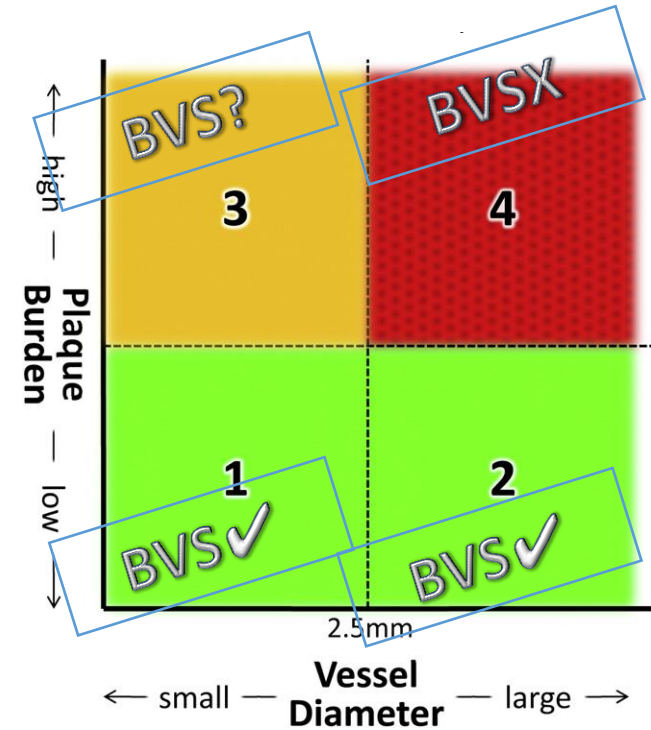
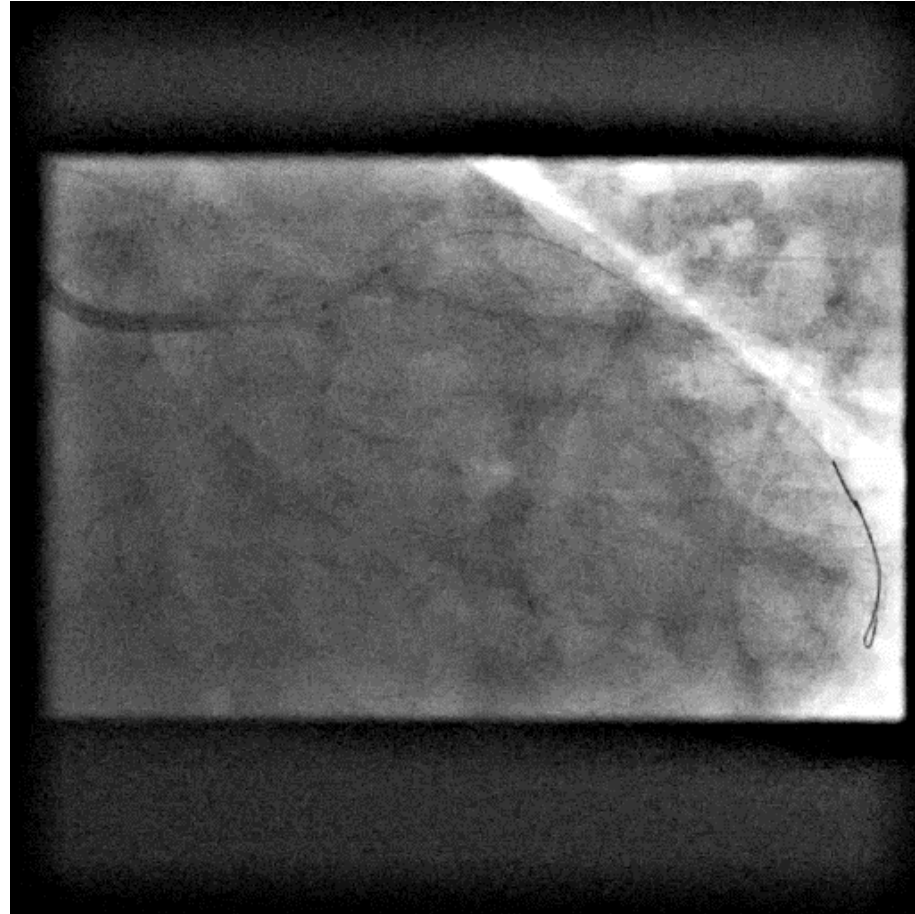


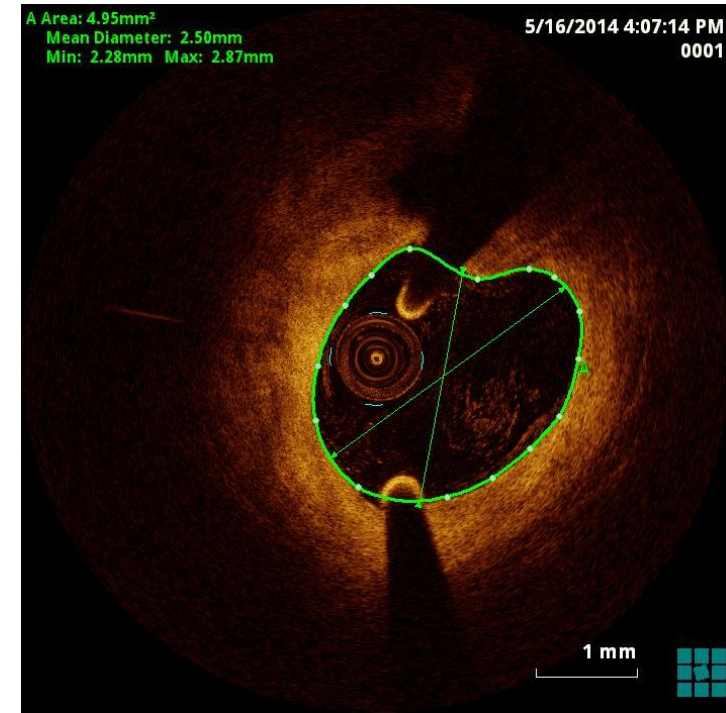
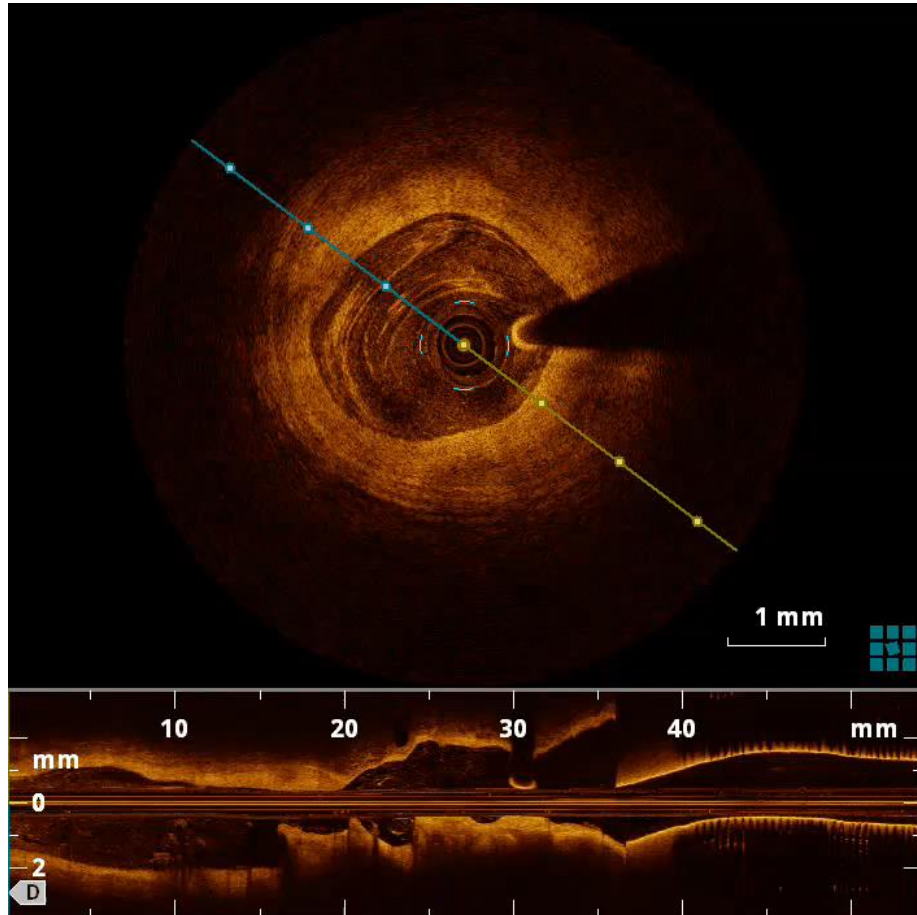
Fig. 3. Decision to perform left main (LMS) stenting with bioresorbable scaffolds (BVS) based on characteristics of side-branch (left circumflex artery or intermediate branch).

- In the case of low plaque burden (panels 1, 2 – green) BVS stenting can be performed irrespective of side-branch size.
- In the case of high plaque burden and small side-branch size BVS LMS implantation should be decided on a case by case basis (panel 3 – orange).
- In the case of high plaque burden, and large side-branch vessel size, BVS stenting should be avoided (the rationale being that most likely a kissing balloon inflation or stent implantation will be needed (as bailout for jailing) that will distort the BVS, panel 4 – red).

PB 3.0 7.5Fr EAU Sheath less
Wire to LAD and LCX/OM



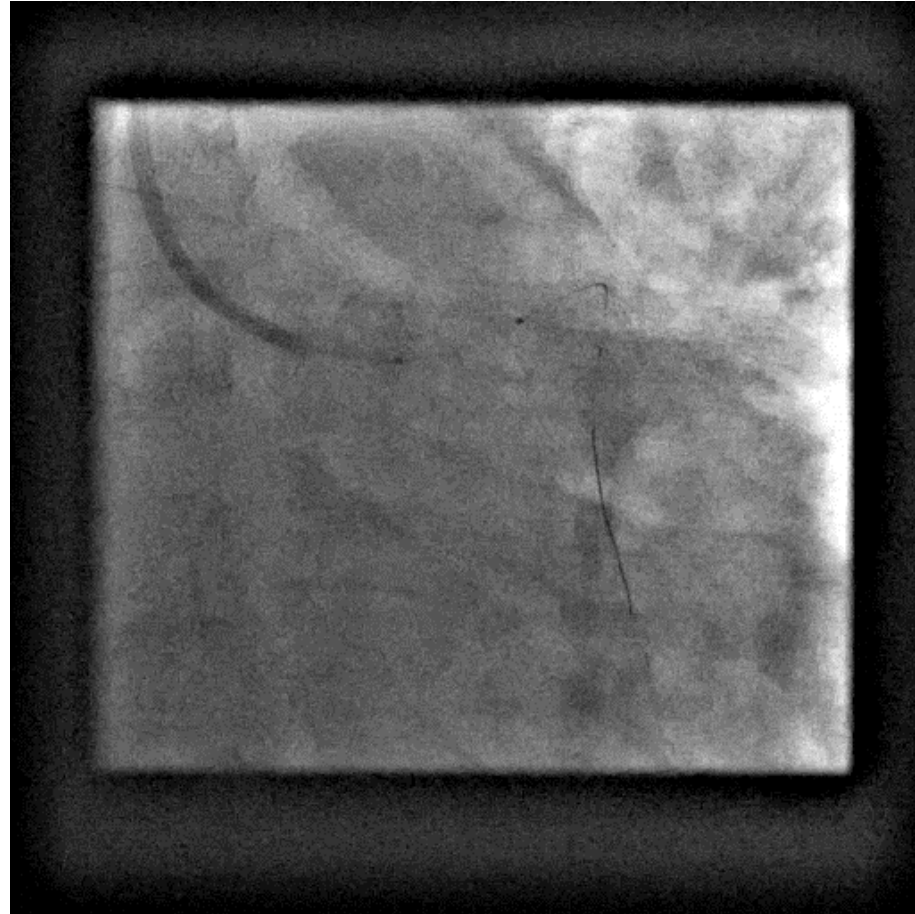
LM mid body Max Ref V diameter 3.7mm,
LAD Distal Max Ref V diameter 3.2mm



After pre dilating with a 3 mm x 15 mm @ 10 atm Balloon
ABSORB BVS :3.5 x 18mm deployed at 14atm



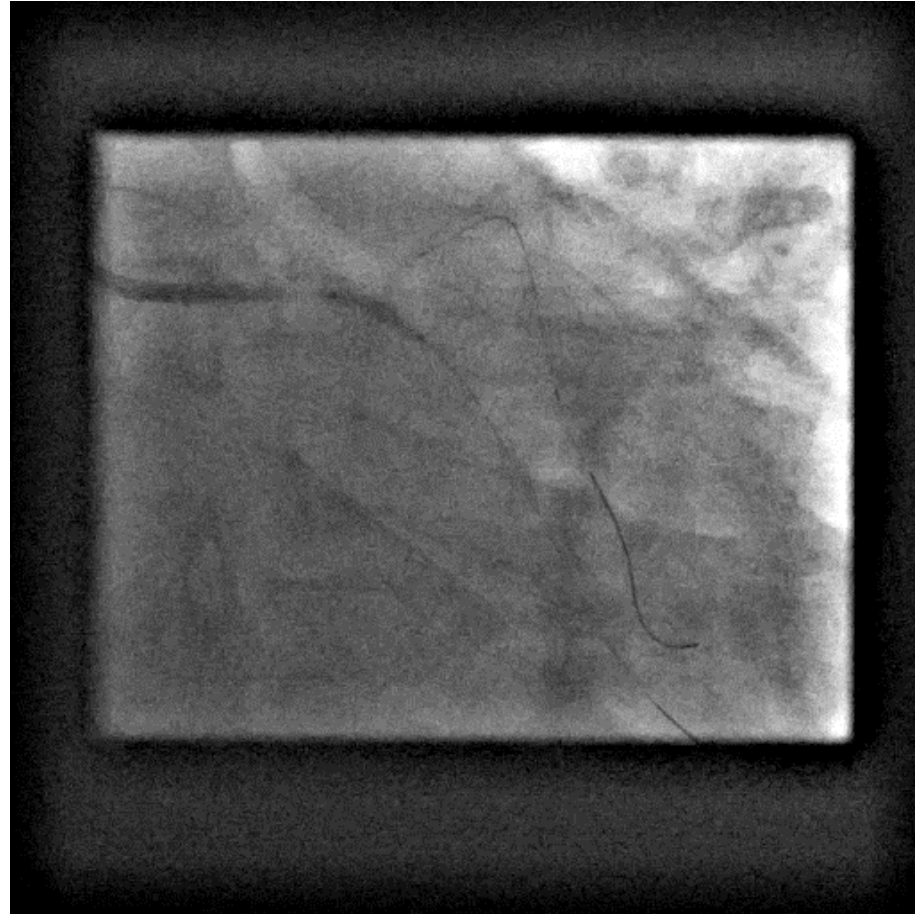
BVS funneled nicely from LMCA to LAD



Post dilated with NC Balloon
3.75 x 12mm at 14atm



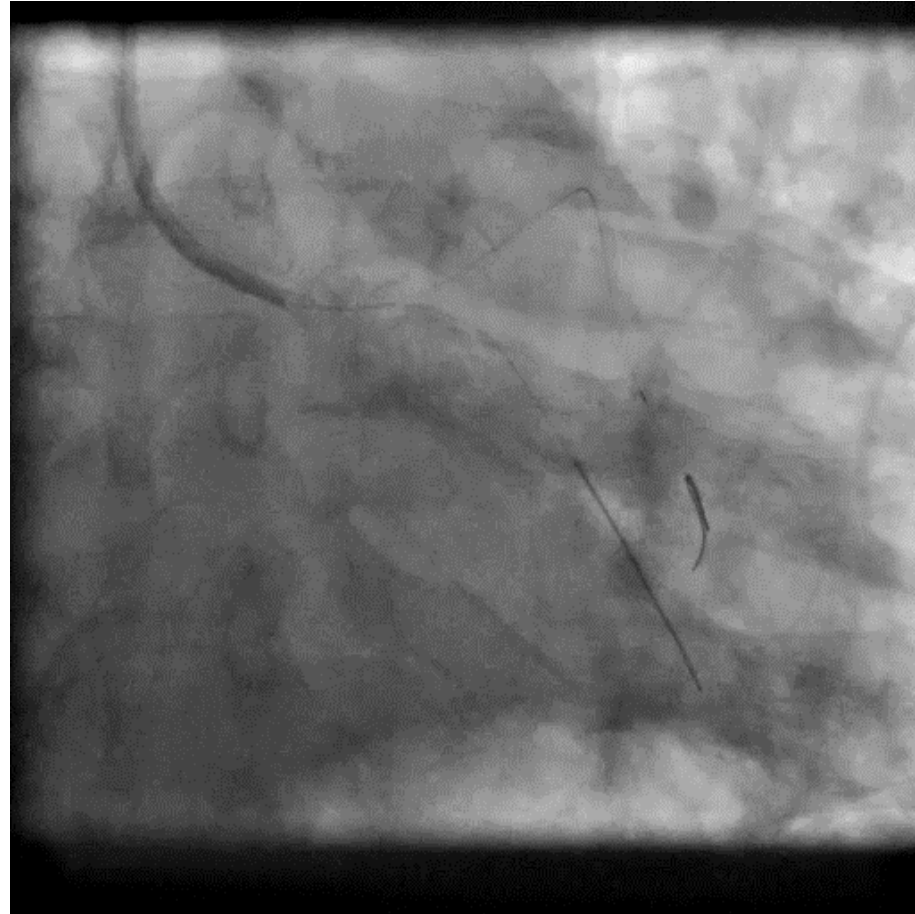
Sion wire to cross BVS strut into LCX
Strut dilated -2.5 x 12mm at 8atm



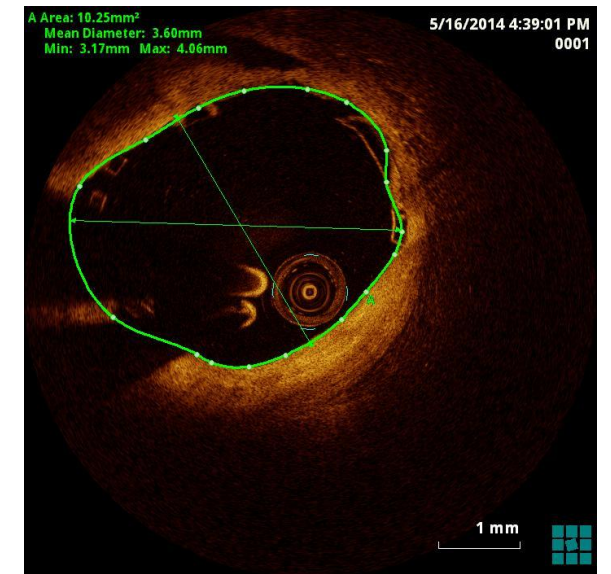
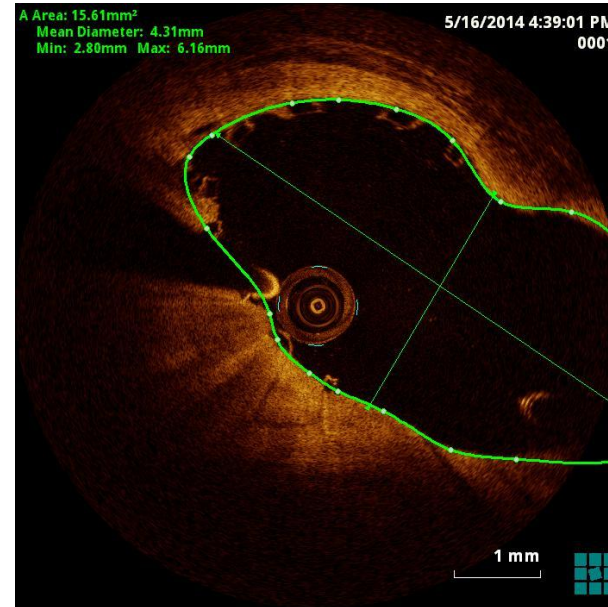
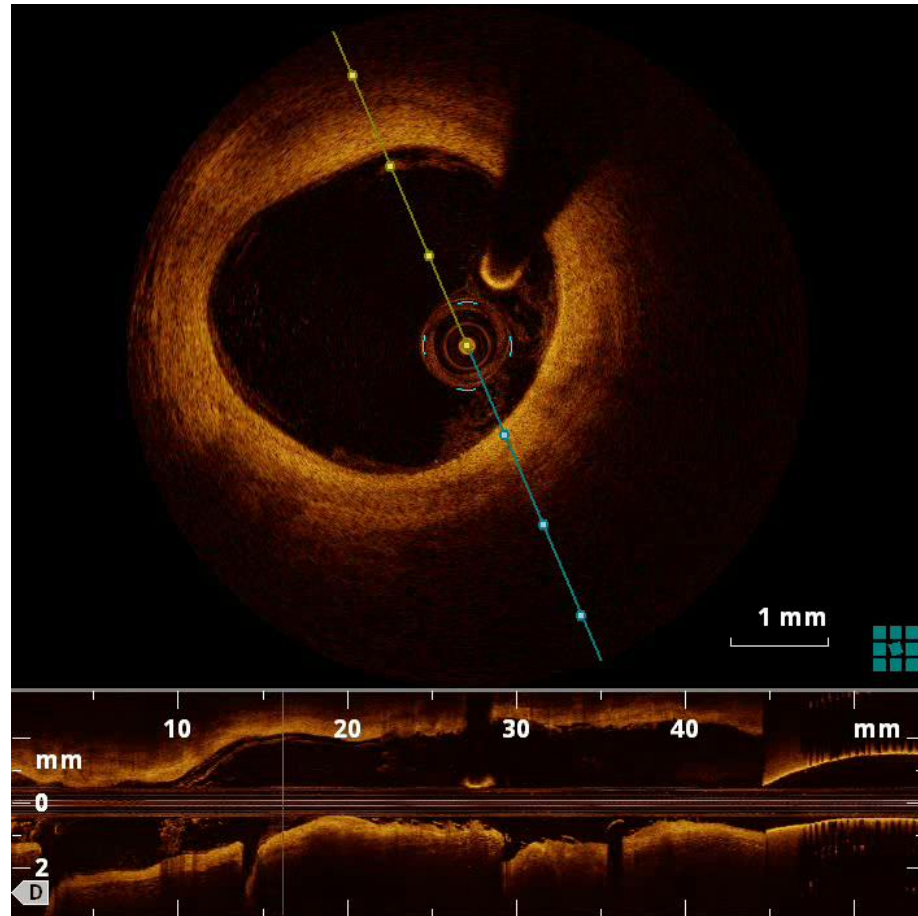
LM-LAD post dilated again with NC Balloon
3.75 x 15mm at 14atm



Good Angiographic result in LMCA-LAD
LCX ostia no significant carina shift



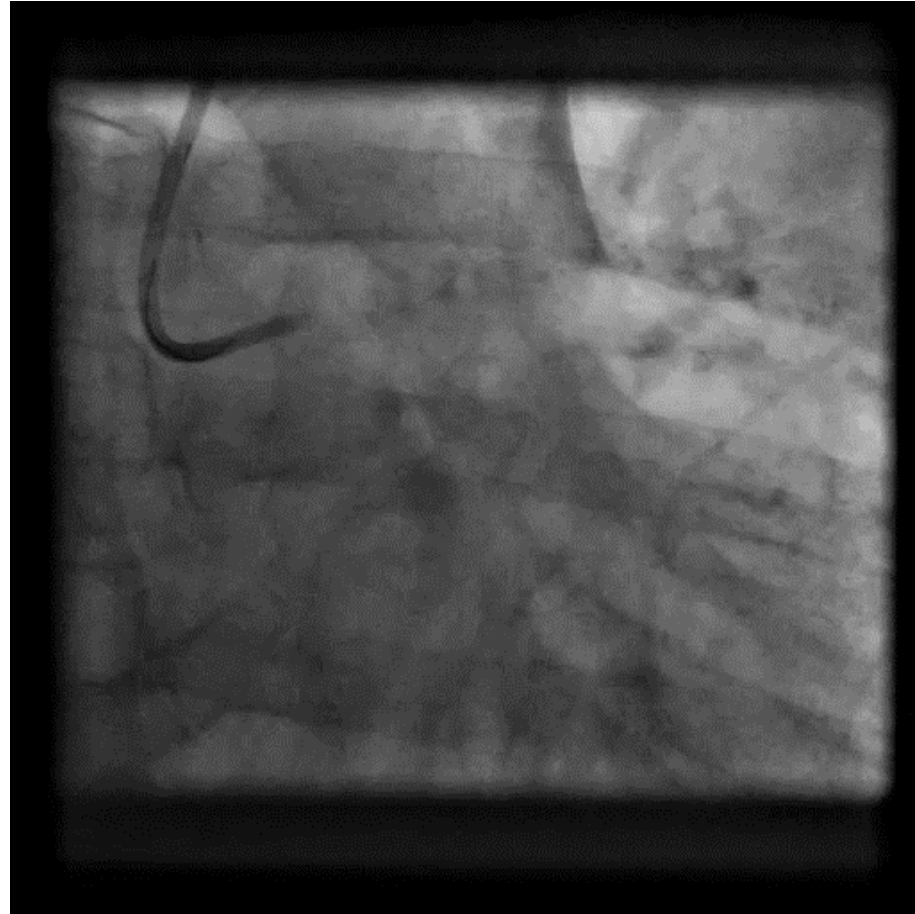
Good apposition in LMCA and LAD
suspected malapposition at the proximal strut.!! ?
Guide catheter related



Proximal edge post dilated with
4.0 x 8mm balloon @ 8 atm



Final result



Biovascular scaffolding of distal left main trunk

Experience and follow up from the multicenter prospective RAI registry

(Registro Italiano Absorb)



Bernardo Cortese ^{a,*}, Pedro Silva Orrego ^a, Rodrigo Sebik ^a, Marco Sesana ^b, Francesco Pisano ^c,
Dennis Zavalloni ^d, Giuseppe Steffenino ^e, Romano Seregini ^a, on behalf of the, RAI registry investigators

- Single BVS strategy
- All pre dilated
- Post dilated with 0.5mm higher
- 6 out of 9 patients:
 - Under expansion
 - Acute recoil
 - Malapposition
- No clinical events

9 patients

Reference vessel diameter, mm (SD)	3.4 (0.7)
Minimal lumen diameter, mm (SD)	1.0 (0.6)
Predilatation balloon size, mm (SD)	3.16 (0.35)
BVS diameter, mm (SD)	3.33 (0.25)
BVS length, mm (SD)	20.2 (4.4)
Postdilatation balloon size, mm (SD)	3.8 (0.25)
Final IVUS area (proximal), mm ² (SD)	8.1 (1.56)
Final IVUS area (middle), mm ² (SD)	7.6 (1.63)
Final IVUS area (distal), mm ² (SD)	8.2 (1.44)

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PCI of the distal LMCA

- High rate of TVR with increased risk of late stent thrombosis with metal stents
- It is intriguing to test a BVS scaffold, whose total resorption is expected 18–24 months.
- The risk of recoil with a BVS; were not significantly higher than with metal stents
- BVS malapposition in fibrocalcific lesions occurs more often
- LM lesions behave like fibrocalcific lesions in hindrance to adequate expansion.
- Natural coronary vessel curvature, shown to be better preserved after BVS
- Therefore the true clinical meaning of under expansion and late recoil is unknown.
- This study showed a high rate of device under expansion/recoil, whose clinical meaning should be addressed in an adequately powered study.

Absorb everolimus-eluting bioresorbable scaffolds in coronary bifurcations: a bench study of deployment, side branch dilatation and post-dilatation strategies

John A. Ormiston^{1,2,3*}, MBChB; Bruce Webber¹, MHSc; Ben Ubod¹, BSN; Mark W.I. Webster^{1,2,3}, MBChB; Jonathon White², MBChB

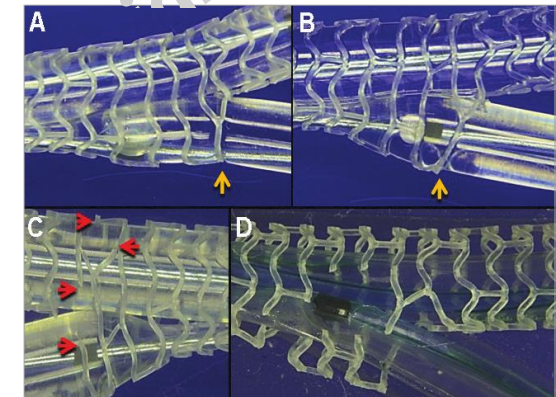
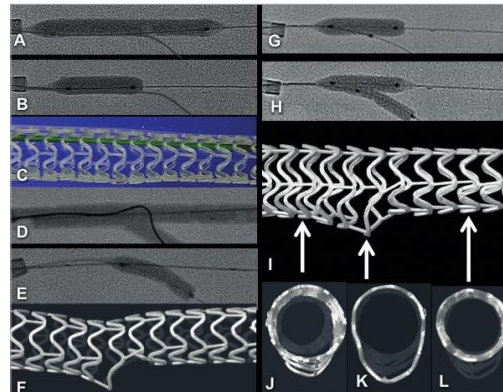
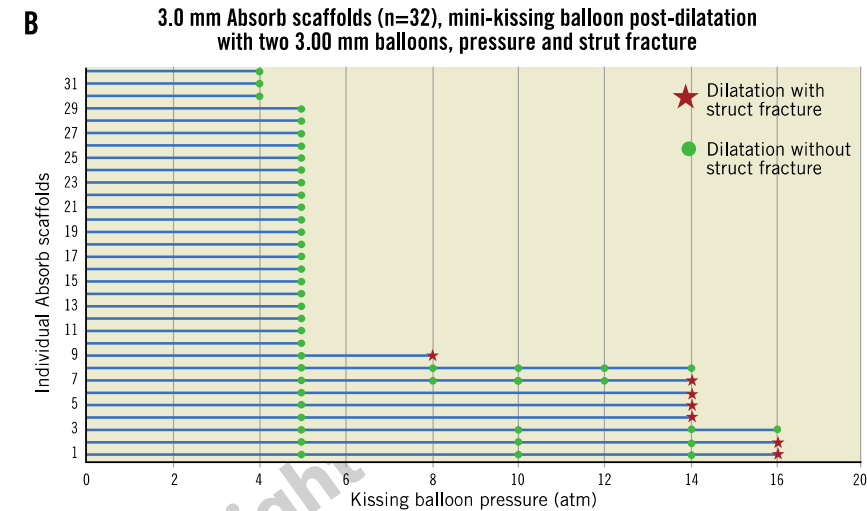
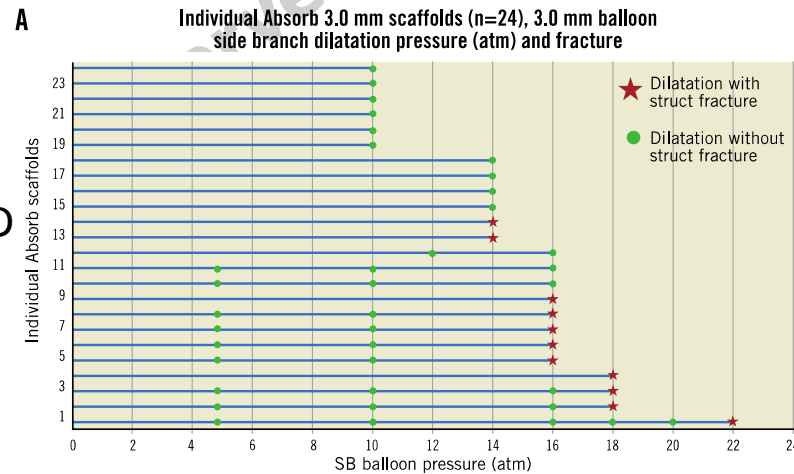
1. Mercy Angiography, Auckland, New Zealand; 2. Auckland City Hospital, Auckland, New Zealand; 3. University of Auckland School of Medicine, Auckland, New Zealand

SB dilatation of Absorb cause MB distortion which was corrected by MB post-dilatation or low-pressure mini-KBPD

The best strategy for an Absorb in most bifurcation lesions is likely to be a provisional approach.

The scaffold proximal to the SB can be optimally expanded by post-dilatation with a balloon sized to the proximal vessel.

‘Optimize the POT’



BVS...in selected LMCA lesions

- Young patient (cage free in few years)
- Isolated LMCA to LAD lesion (soft lesion preferred)
- Small to medium sized of LMCA (Size limitation with BVS)
- Lumen diameter to be considered (rather than vessel diameter)
- Provisional strategy planned (2 stents 'V' may be used, avoid Culotte)
- Small side branch (preferably disease free, if not then Hybrid)
- OCT (or IVUS) to confirm scaffold apposition

ABSORB BVS is a **Device** looking for a
'Niche' Indication

or

a selected LMCA Indication is looking
for a 'Niche' **Device**

Will it be the norm remains to be
seen...

THANK YOU

