

Scaffold in Metal Stent Strategy for Restenosis?

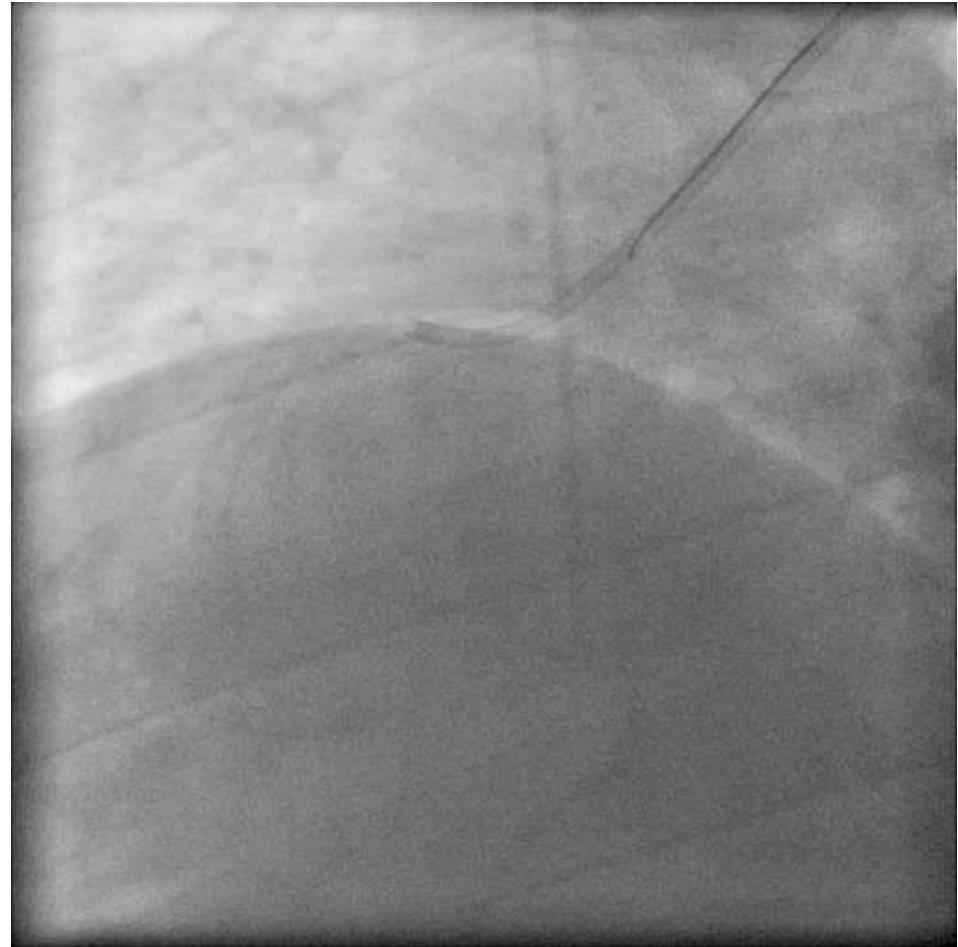
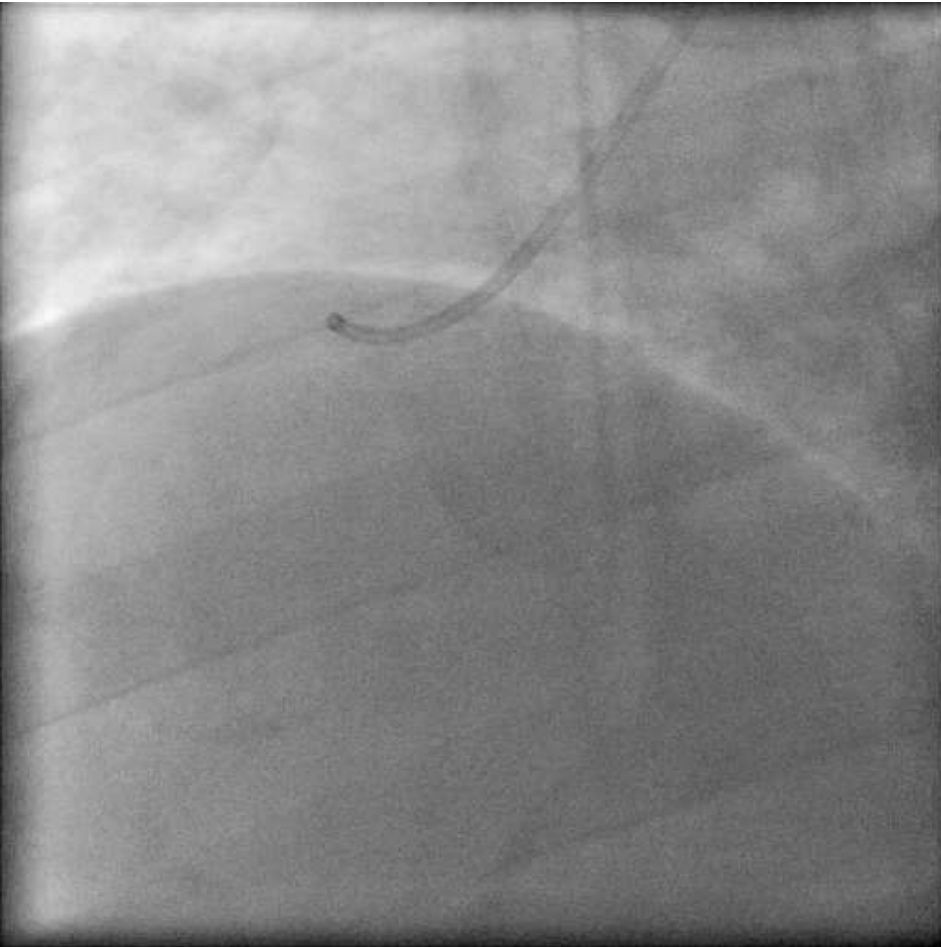
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Patient History

- 44-year-old man with DM and hyperlipidemia

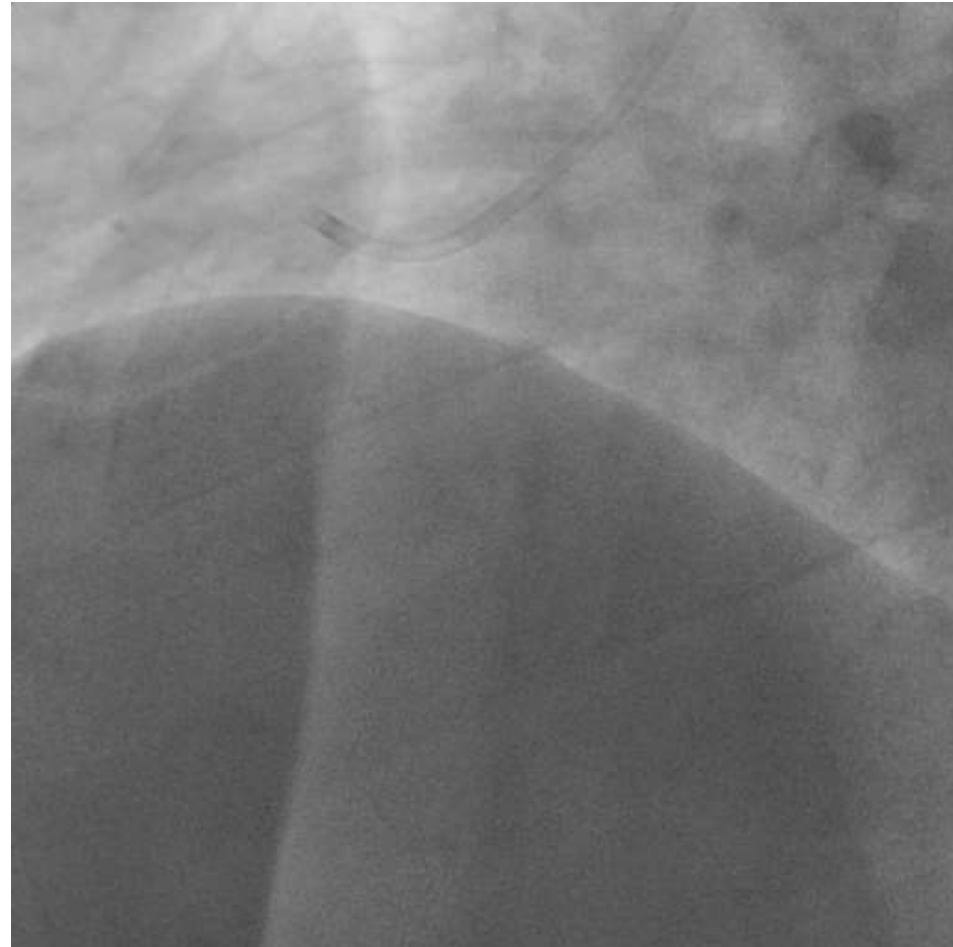
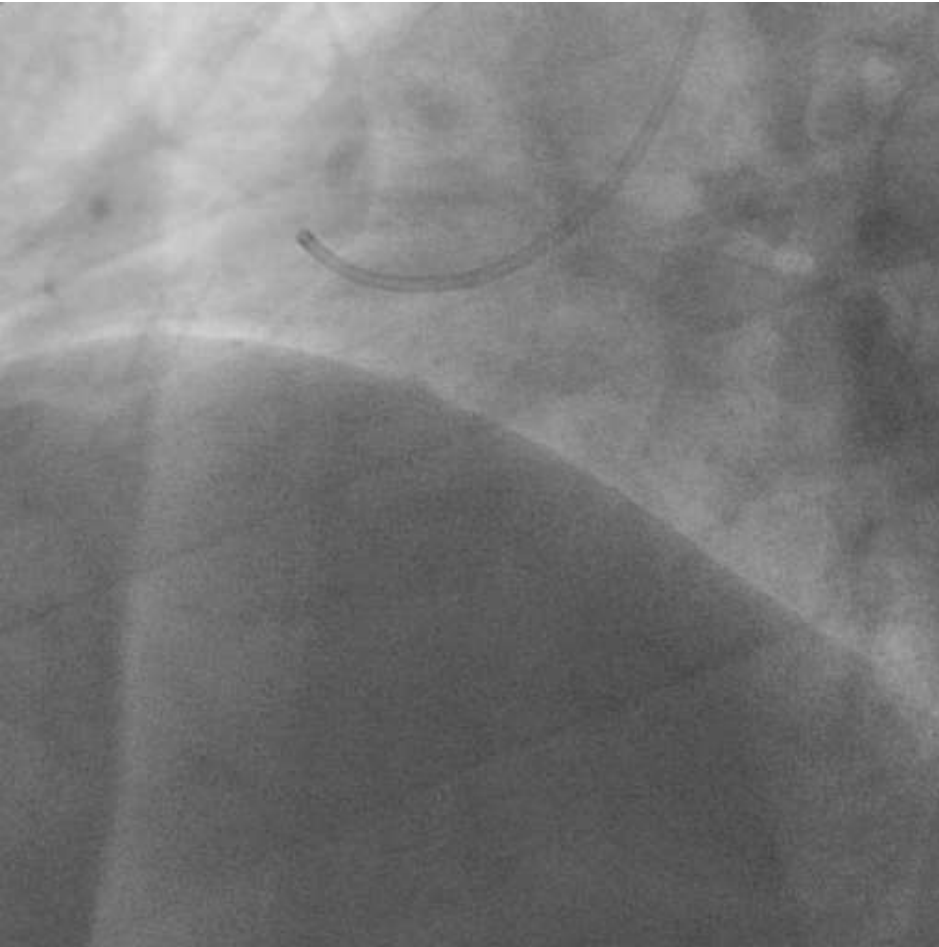
2007	AMI, PCI to RCA with one DES
2014/3	Ventricular fibrillation status post resuscitation
2014/5	Thallium scan: inferior lateral ischemia
2014/6	POBA to RCA ISR
2014/12	Angina recurred

First RCA PCI in 2007



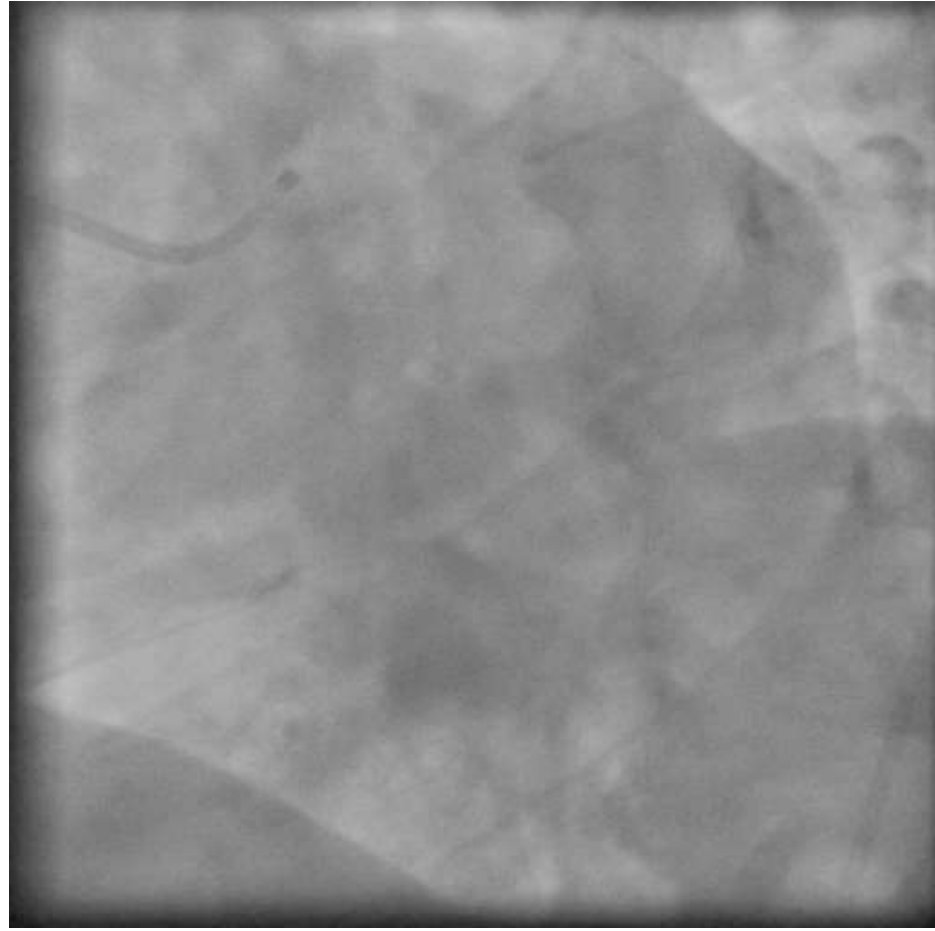
Cordis Cypher 3.5 X 28mm

RCA restenosis in June, 2014

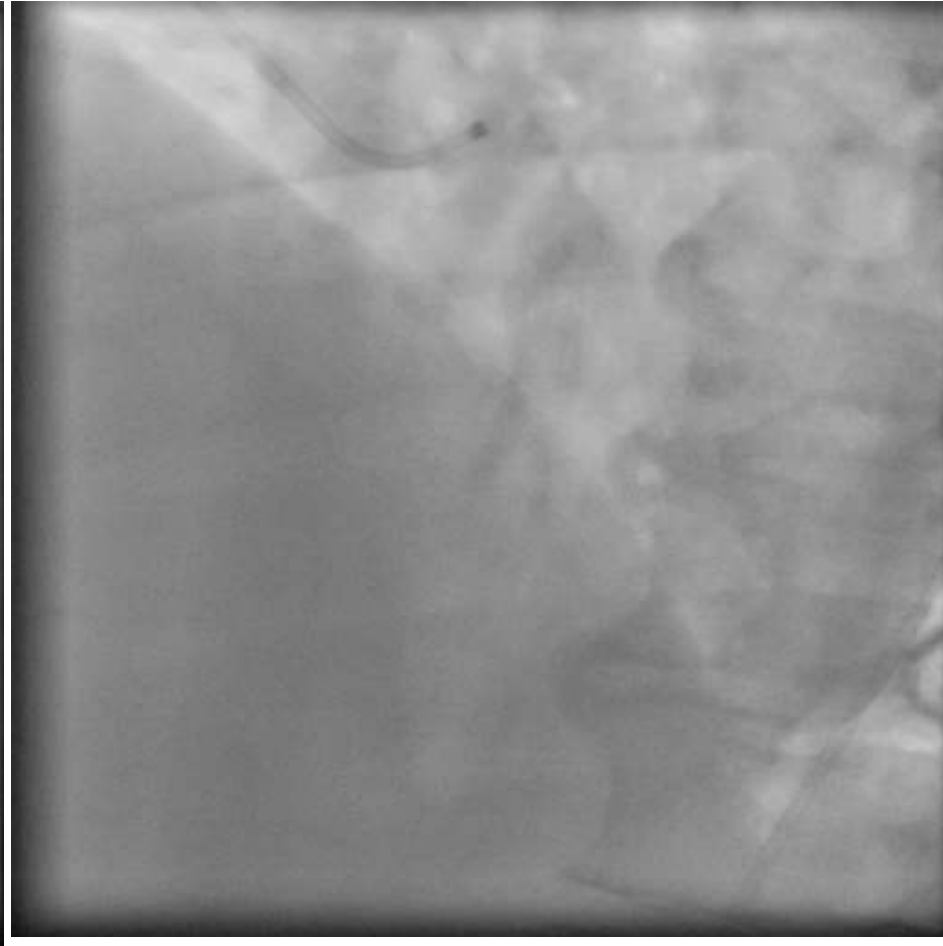
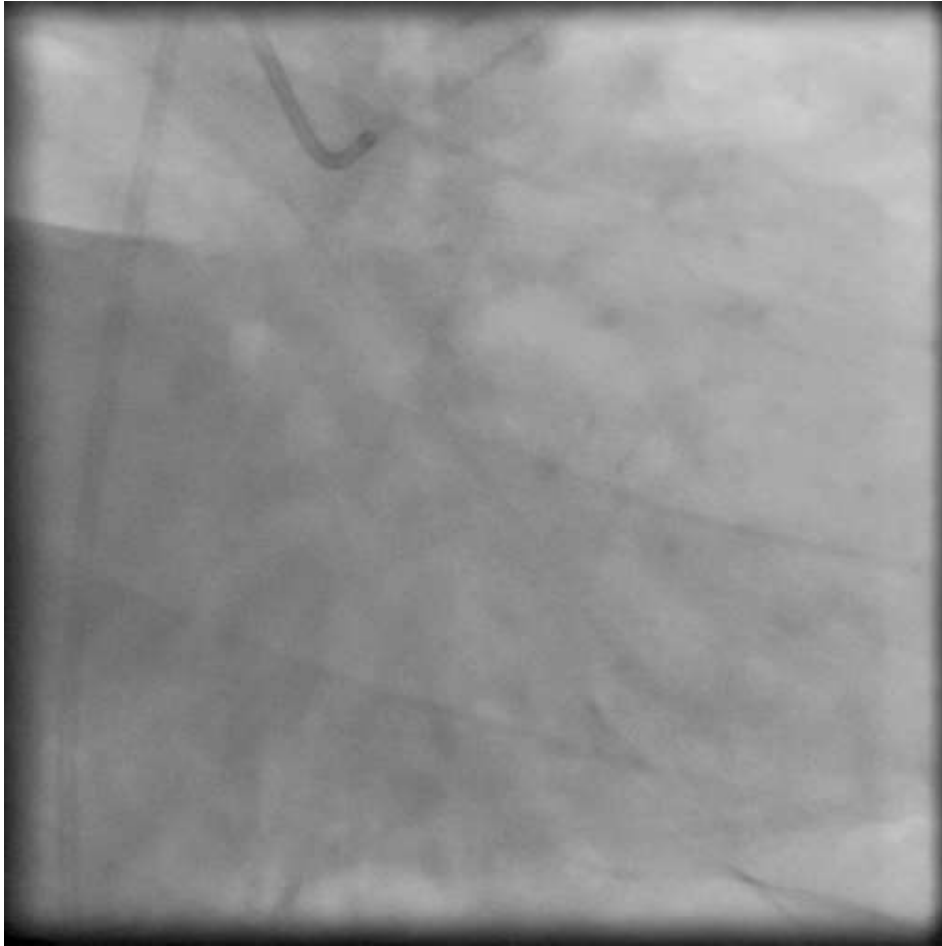


Angina recurred

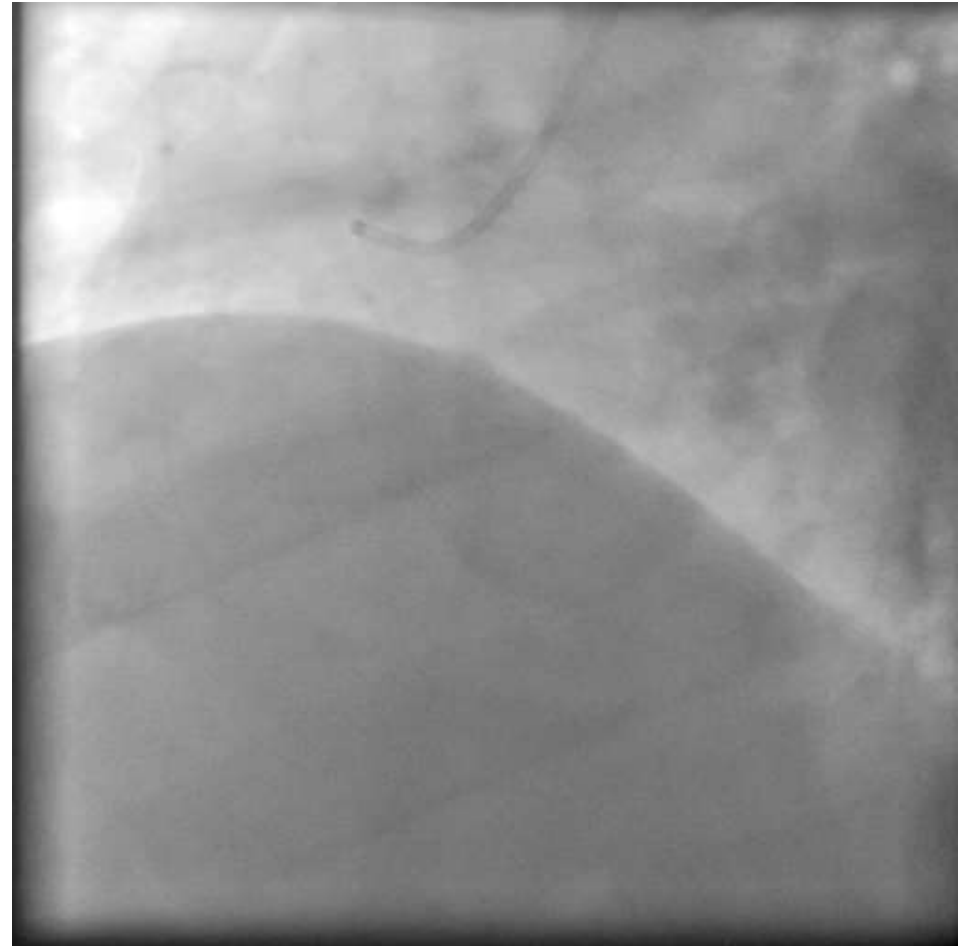
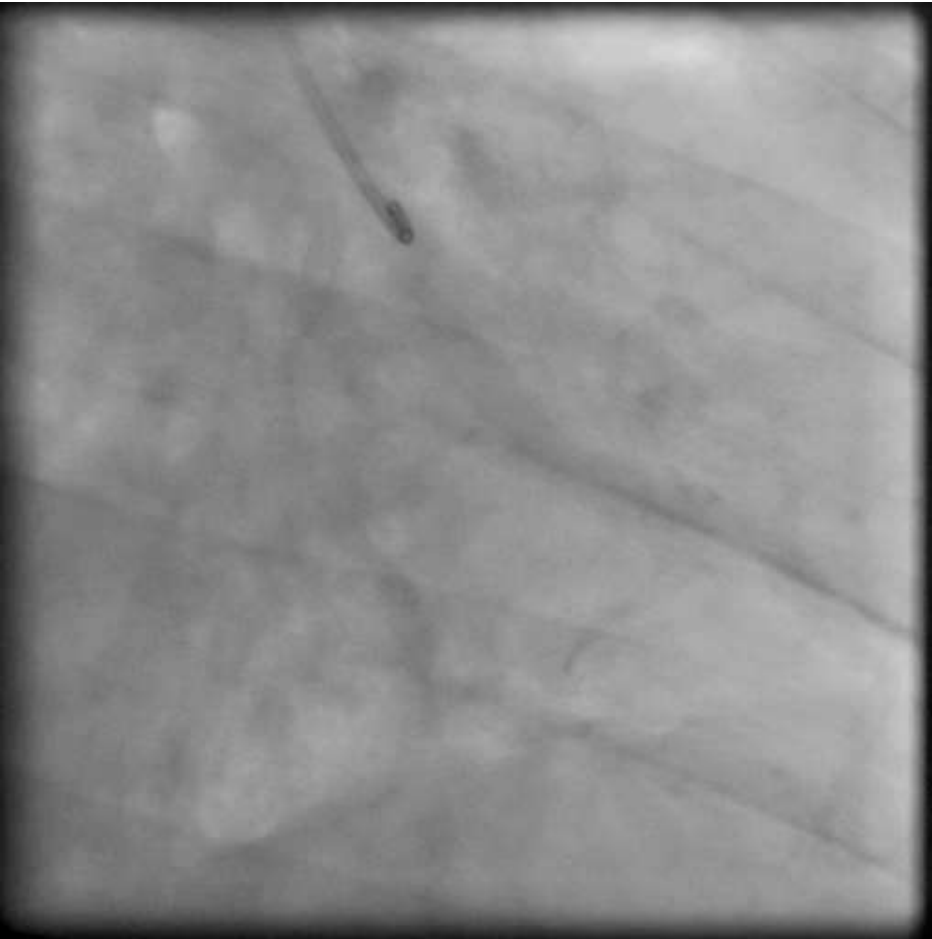
LCA



LCA



RCA



What's next?

1. Balloon angioplasty with cutting balloon & noncompliant balloon
2. Drug-eluting balloon (DEB) after balloon angioplasty
3. Drug-eluting stent (DES)
4. Bioresorbable scaffold (BVS)

No consensus yet!

Clinical outcome of DEB and DES in ISR treatment

	PEB	PES	Balloon angioplasty	p values		
				PEB vs PES	PEB vs balloon angioplasty	PES vs balloon angioplasty
Death	3 (2.2%)	6 (4.6%)	7 (5.3%)	0.27	0.17	0.80
Myocardial infarction	3 (2.1%)	3 (2.4%)	2 (1.5%)	0.92	0.70	0.63
Q wave myocardial infarction	1 (0.7%)	1 (0.8%)	0	0.95	0.34	0.32
Target lesion thrombosis	1 (0.7%)	1 (0.8%)	0	0.97	0.33	0.31
Target lesion revascularisation	30 (22.1%)	17 (13.5%)	56 (43.5%)	0.09	<0.0001	<0.0001
Target vessel revascularisation	33 (24.2%)	21 (16.6%)	58 (45.1%)	0.18	0.0001	<0.0001
Death or myocardial infarction	6 (4.4%)	9 (6.9%)	9 (6.8%)	0.35	0.36	0.97
Death, myocardial infarction, or target lesion revascularisation	32 (23.5%)	25 (19.3%)	61 (46.2%)	0.50	<0.0001	<0.0001

Data are n (%). Percentages are Kaplan-Meier estimates. PEB=paclitaxel-eluting balloon. PES=paclitaxel-eluting stent.

Table 4: Clinical results at 1 year by treatment group

BVS for in-stent restenosis

Bioresorbable vascular scaffold for coronary in-stent restenosis:
A novel concept

Indian Heart J. 2014 Jul; 66(4): 459–461.

Bioabsorbable drug-eluting vascular scaffold for the treatment
of coronary in-stent restenosis: A two center registry.

- At twelve months of follow up, MACE rate was 18.5%.

Cardiovasc Revasc Med. 2015 Oct-Nov;16(7):401-5.

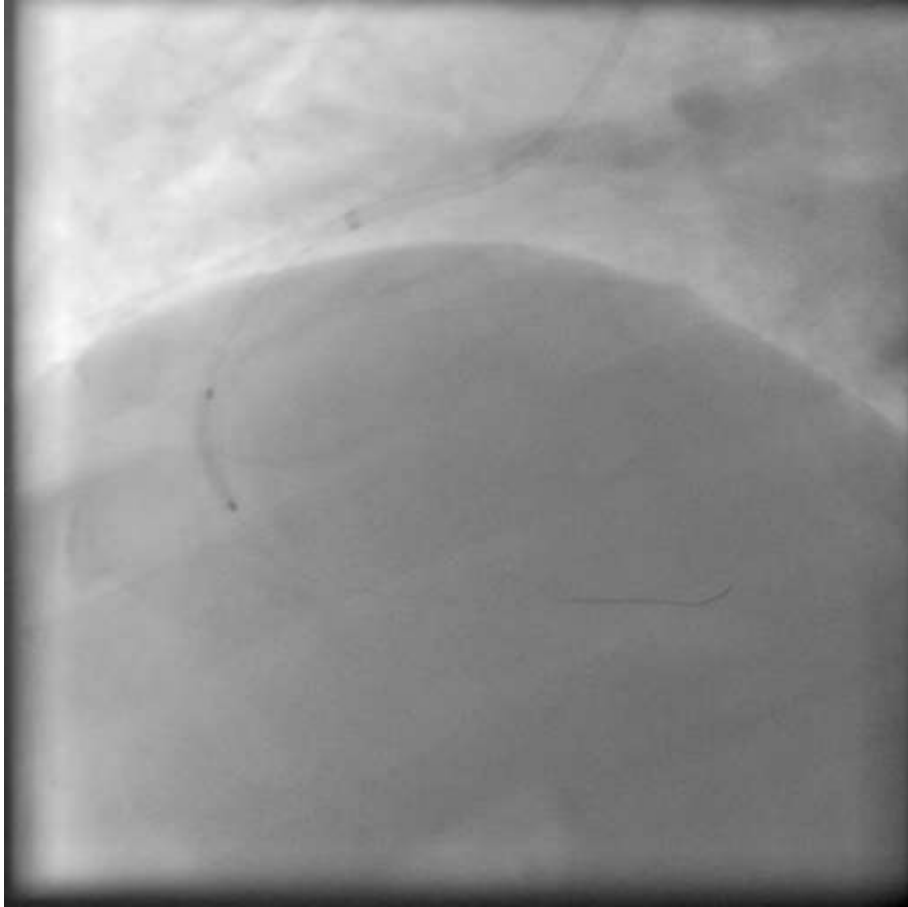
Bioresorbable vascular scaffold implantation for the treatment
of coronary in-stent restenosis: results from a multicenter
Italian experience.

- At a median of 7 months follow-up, MACCE rate was 12%

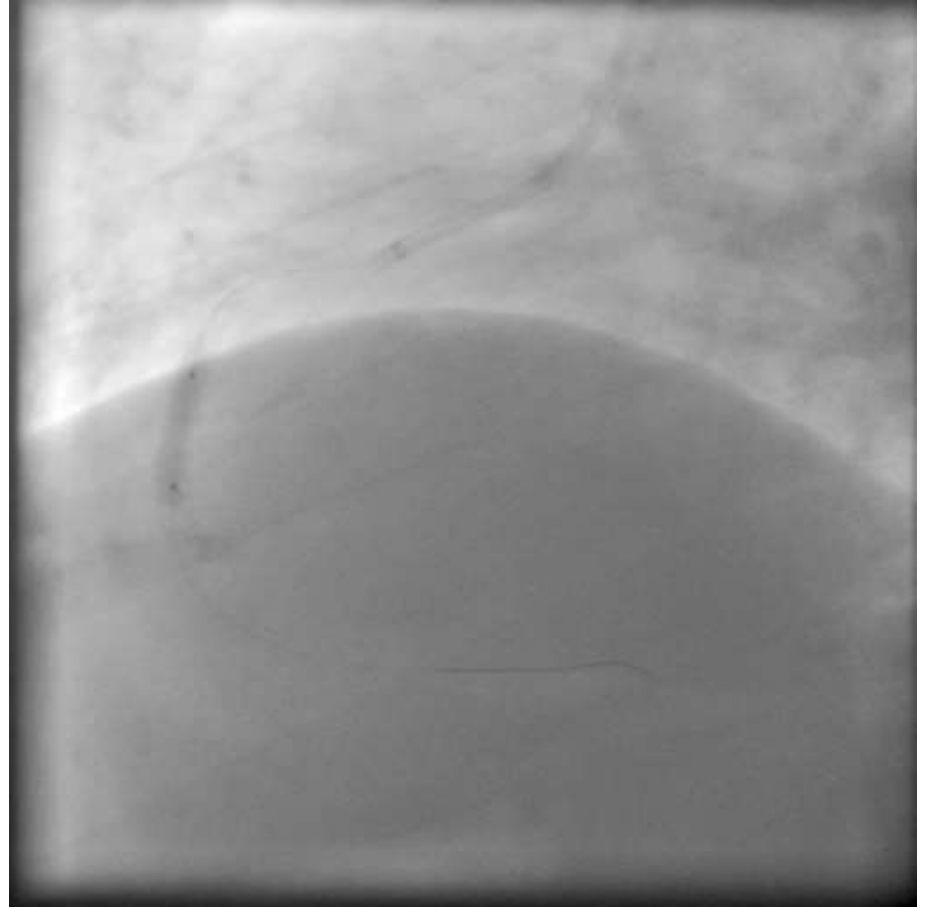
Int J Cardiol. 2015 Nov 15;199:366-72.

Balloon angioplasty

Medtronic AL1 6F Fielder FC, UB3 Excelsior microcatheter

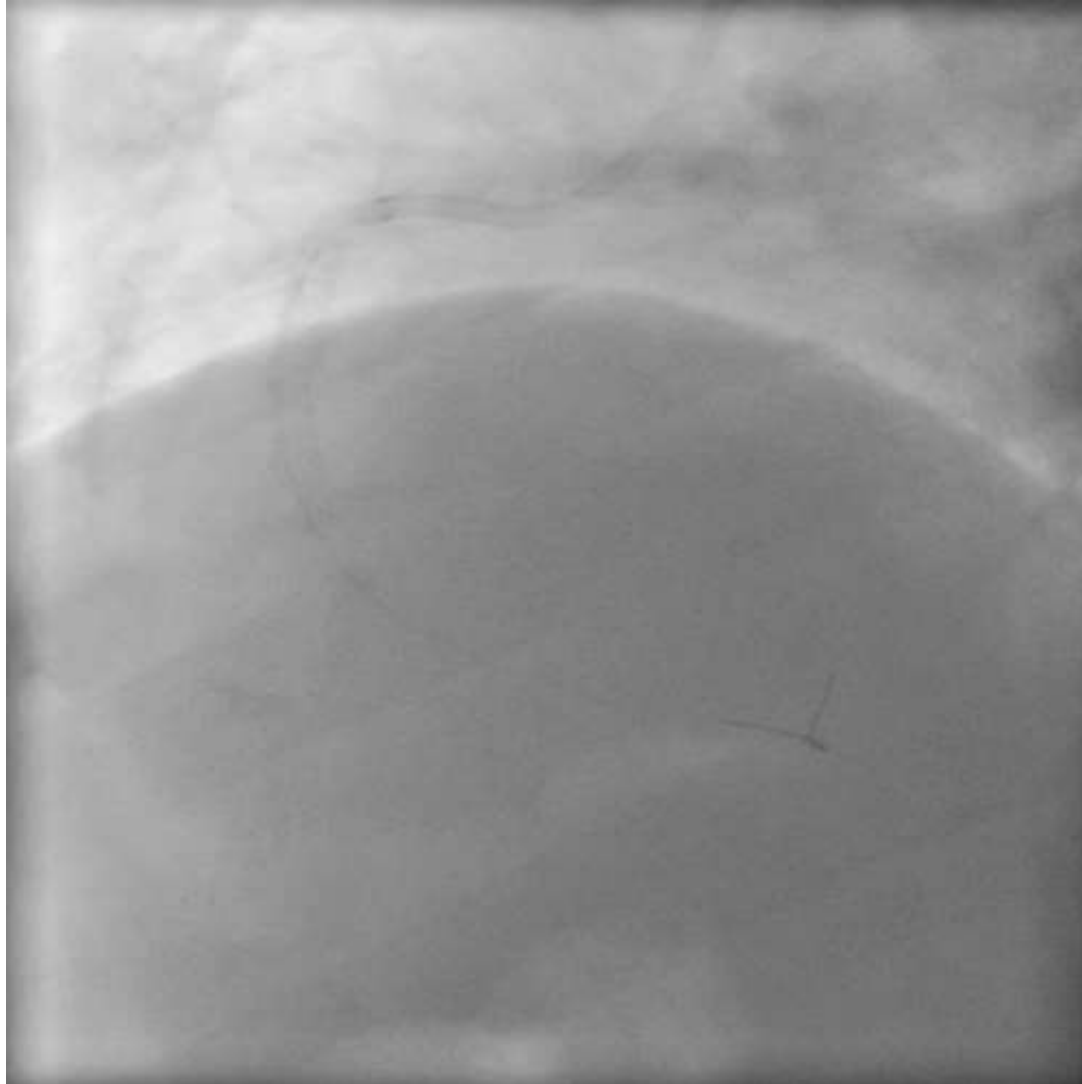


Maverick 2.0x15mm

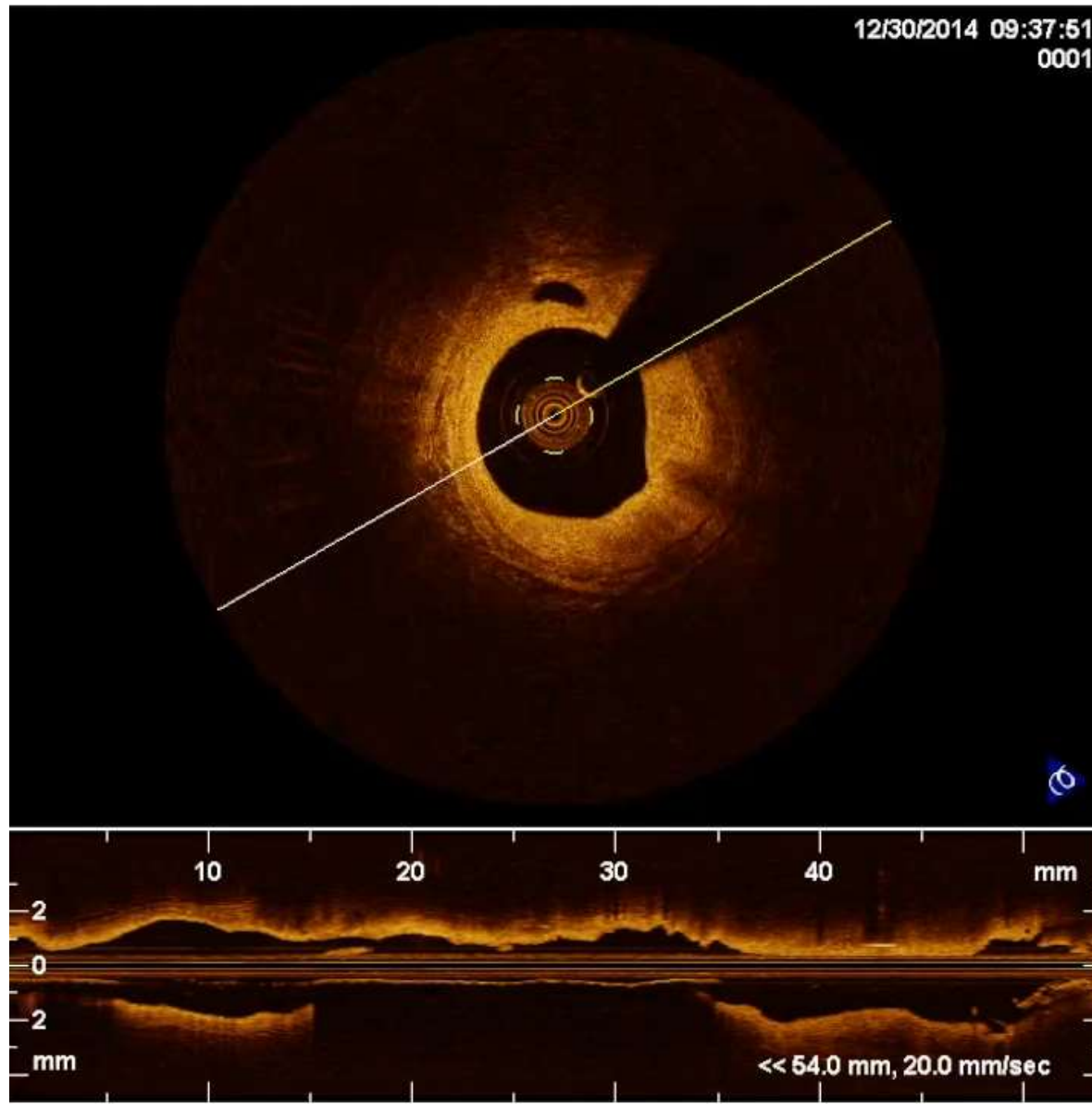


Quantum APEX 3.5x15mm

Angiography after POBA

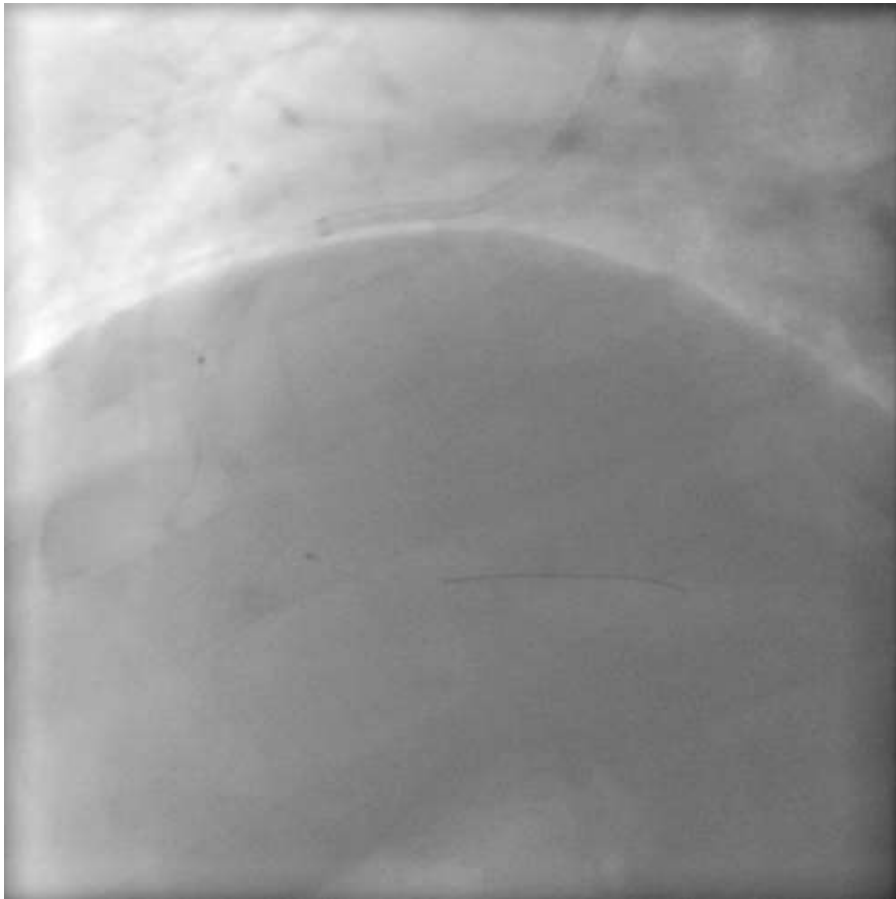


OCT

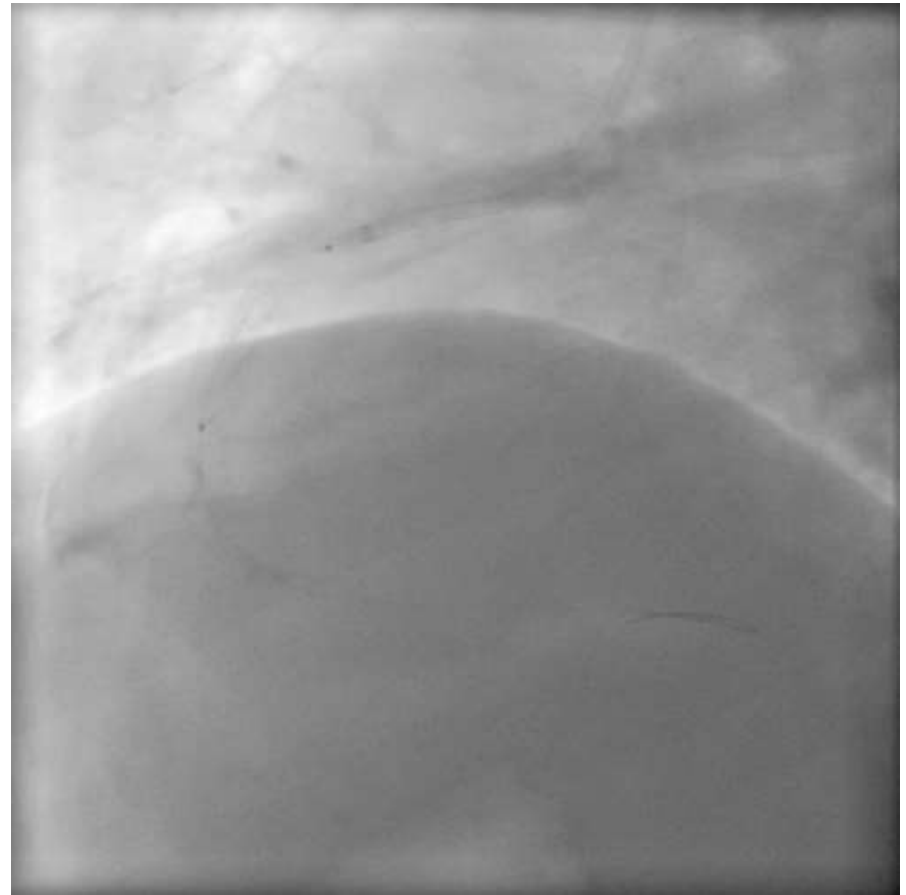


Treat ISR by BVS

Treat RCA ISR with BVS

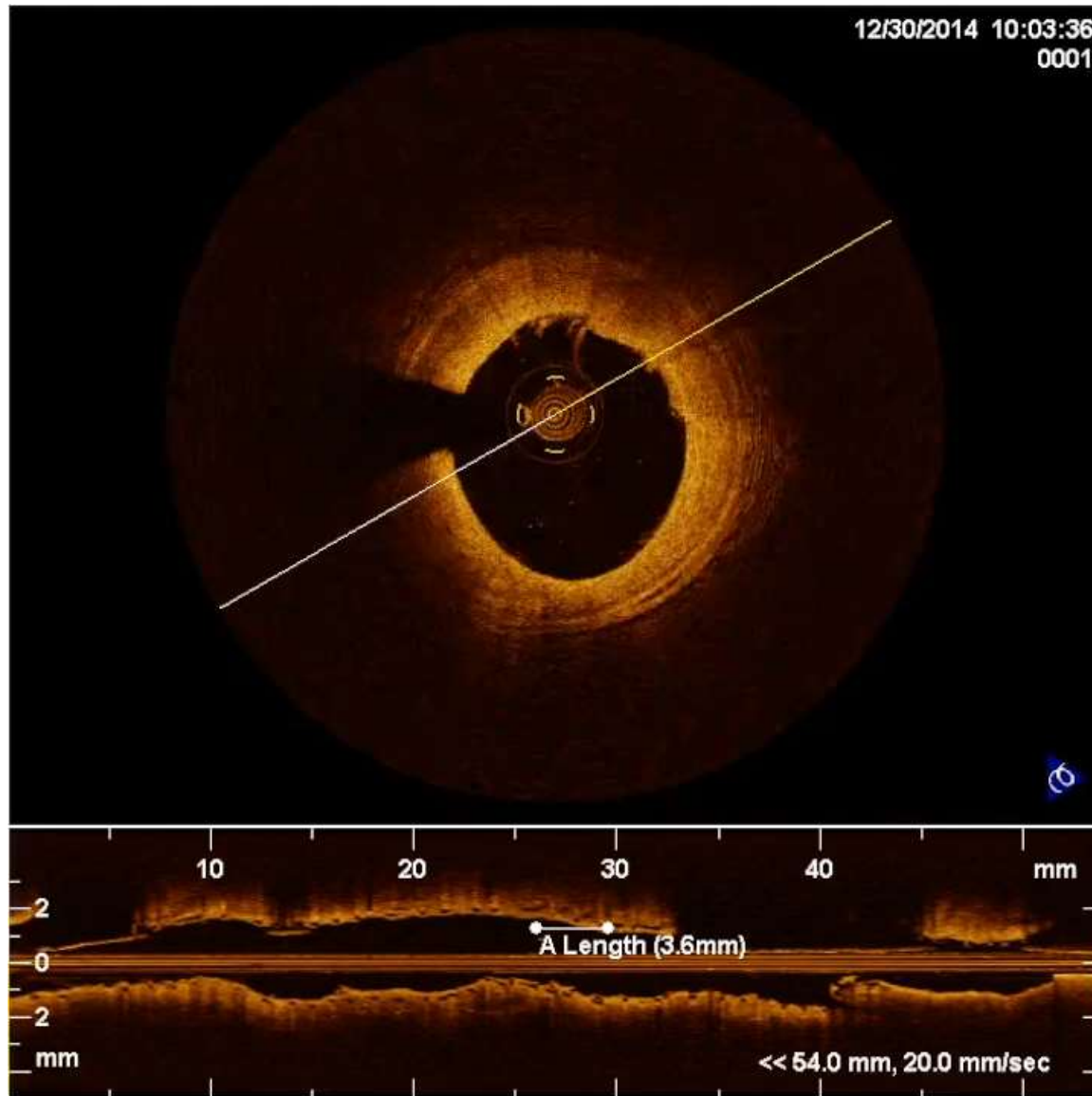


Absorb 3.5x28mm 12atm

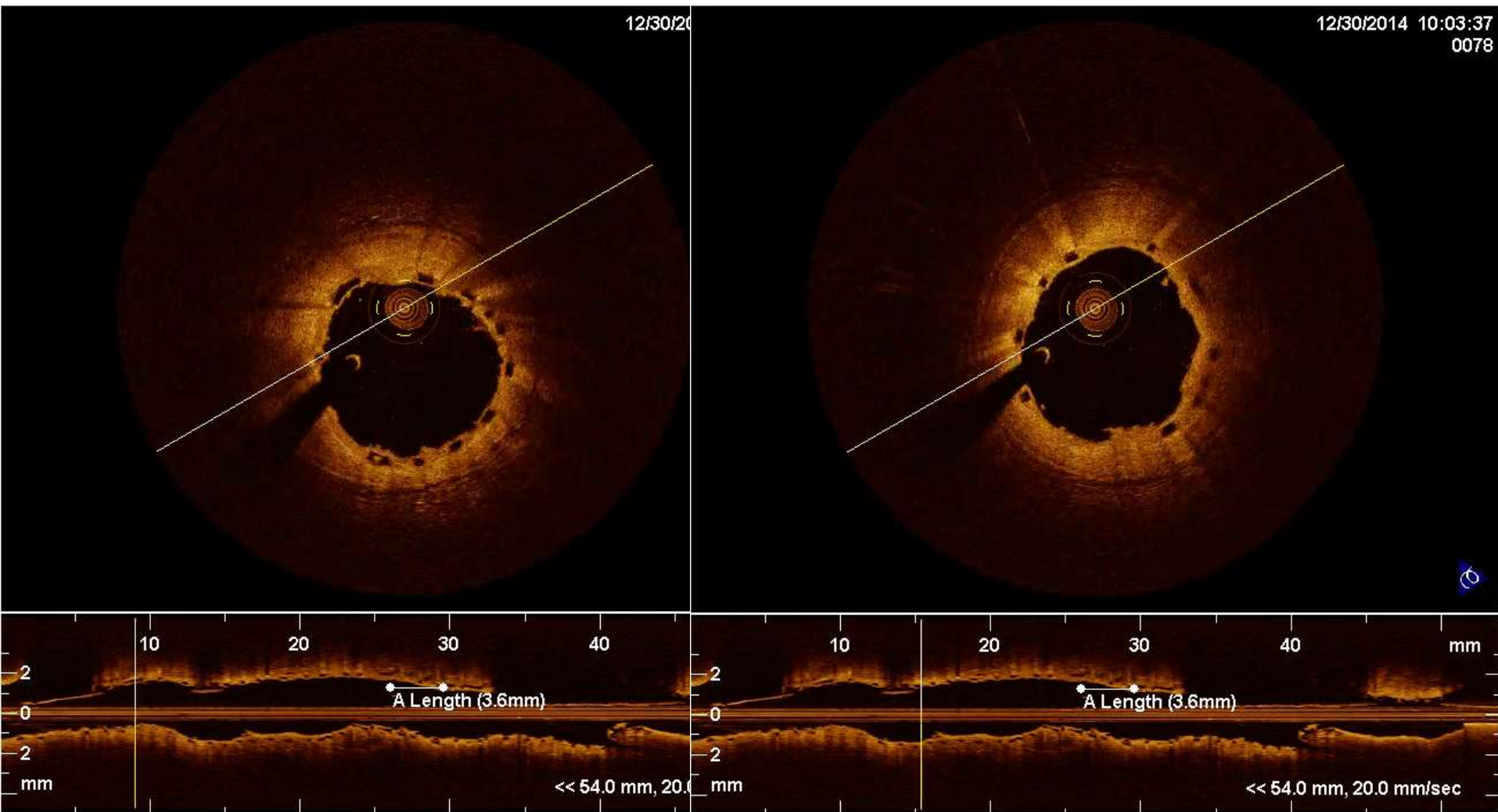


Absorb 3.5x28mm 12atm

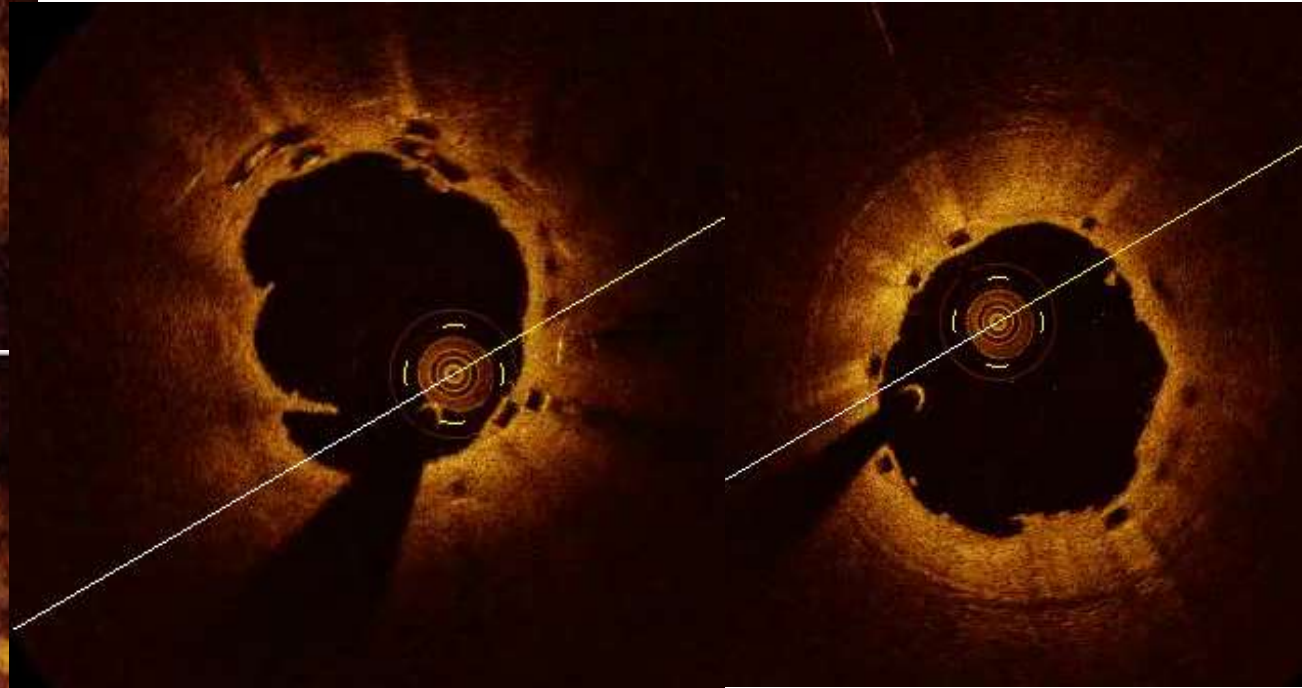
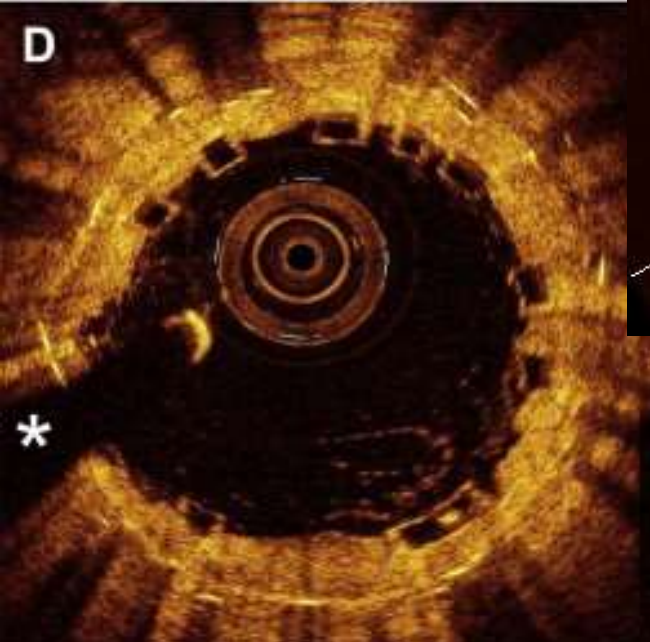
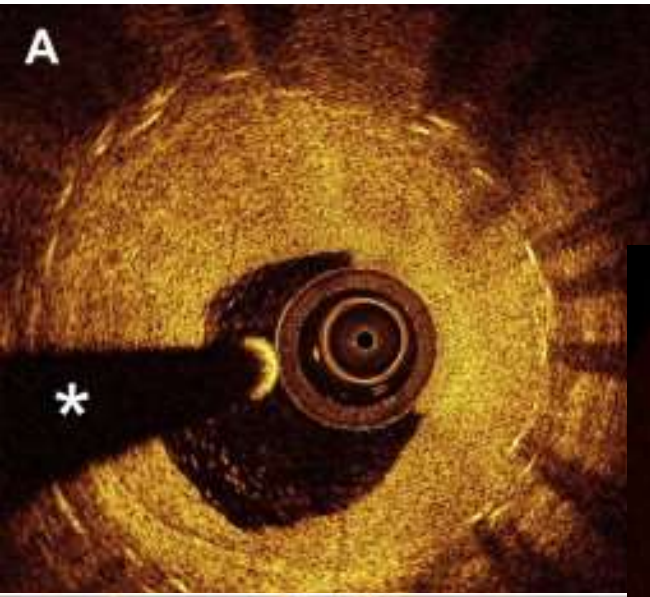
OCT after NC Trek 3.75x15mm

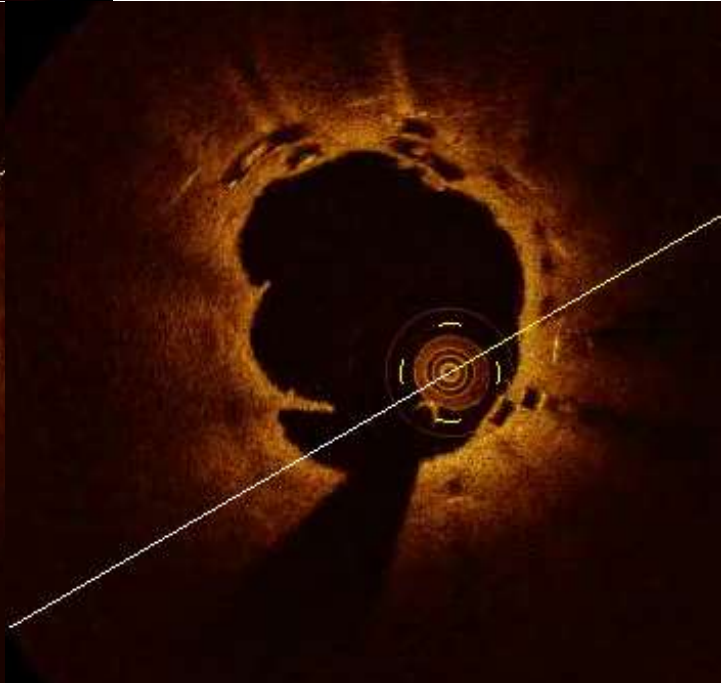
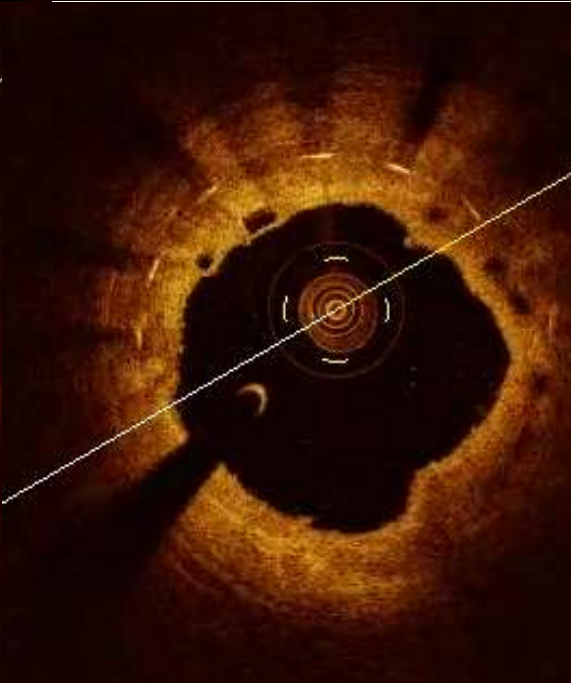
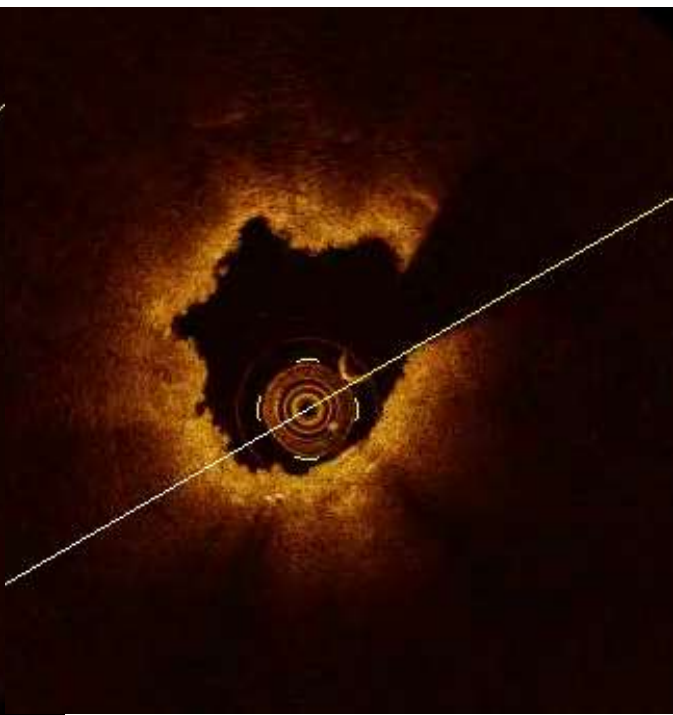
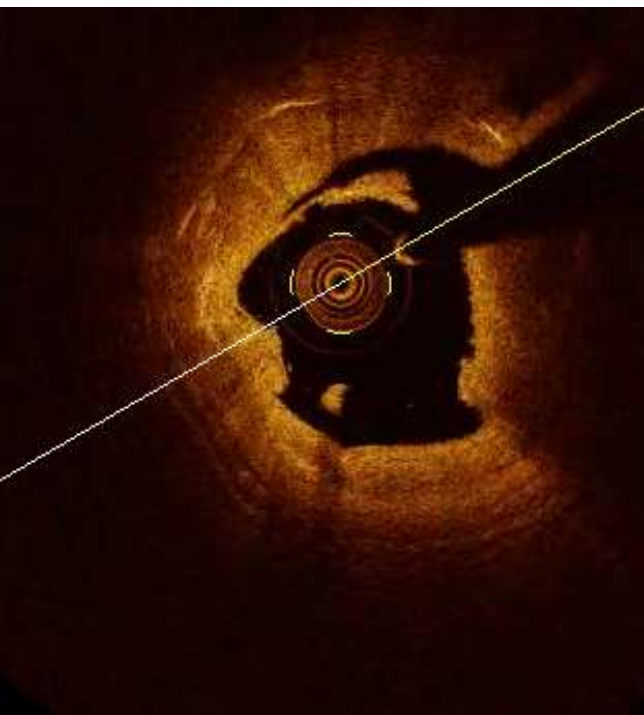


Anything strange?



OCT of BVS in ISR





Tissue protrusion and clinical outcome

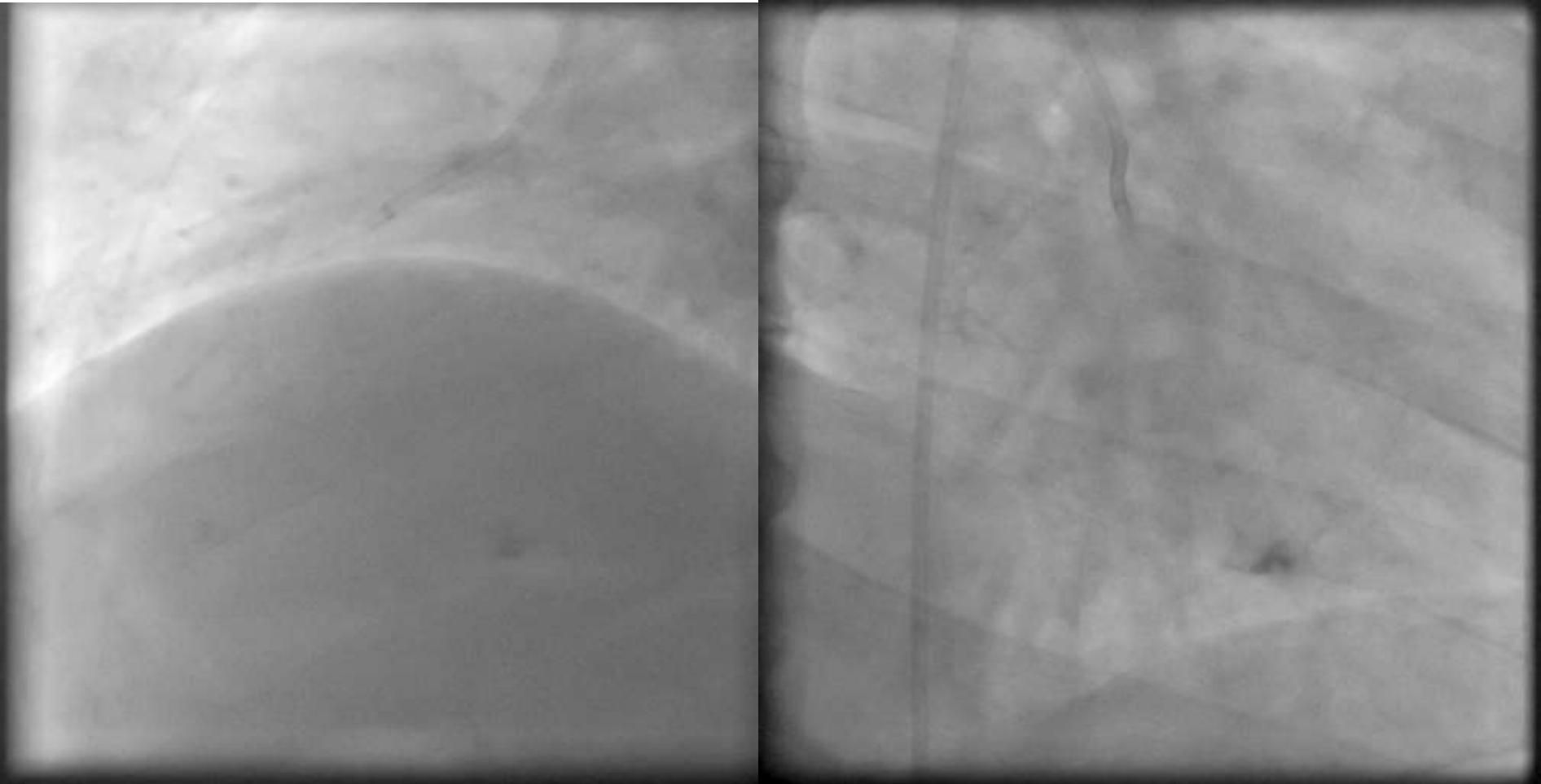
Larger tissue protrusion but not acute malapposition after stent implantation were related to early thrombosis after primary PCI for STEMI.

J Am Coll Cardiol. 2015;66(15_S):.

Tissue protrusion through struts after stent implantation is frequent on OCT in NSTEMI pts undergoing angioplasty.

Archives of Cardiovascular Diseases Supplements (2015) 7, 1-19

Final angiography



Conclusion

- In-stent restenosis is still unsolved issue in current PCI era
- Bioresorbable scaffold in ISR
 - Technically feasible and safe
 - Acceptable MACCE rate, but need further randomized study
 - Large BVS strut is a issue in small vessel
- Tissue protrusion of neointima from BVS strut: predictor of outcome?

Thank you for your attention