

# **COMPLEX PCI 2020 Virtual Mechanical Circulatory Support for Complex PCI**

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# DISCLOSURE

- None

# CASE PREVIEW

- 81 y.o. male with HTN who had a cardiac arrest during coronary angiography for new cardiomyopathy was referred for coronary revascularization.

ID:006221413

29-FEB-2020 23:39:10

WESTWOOD-2TRU ROUTINE RETRIEVAL

16-NOV-1938 (81 yr)  
Male

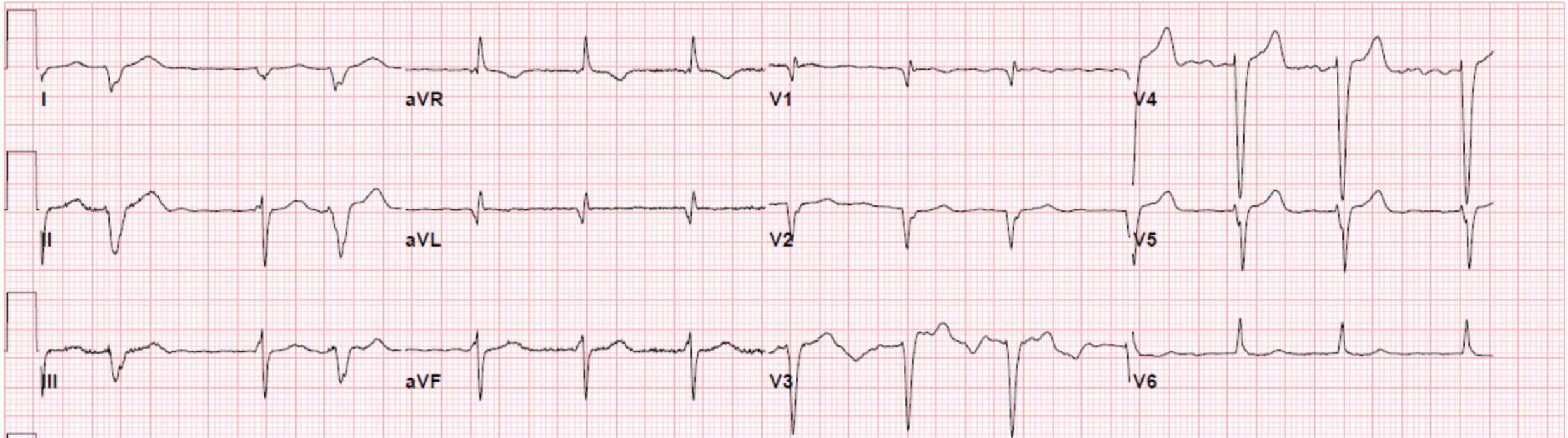
Room:WTRUE1  
Loc:248

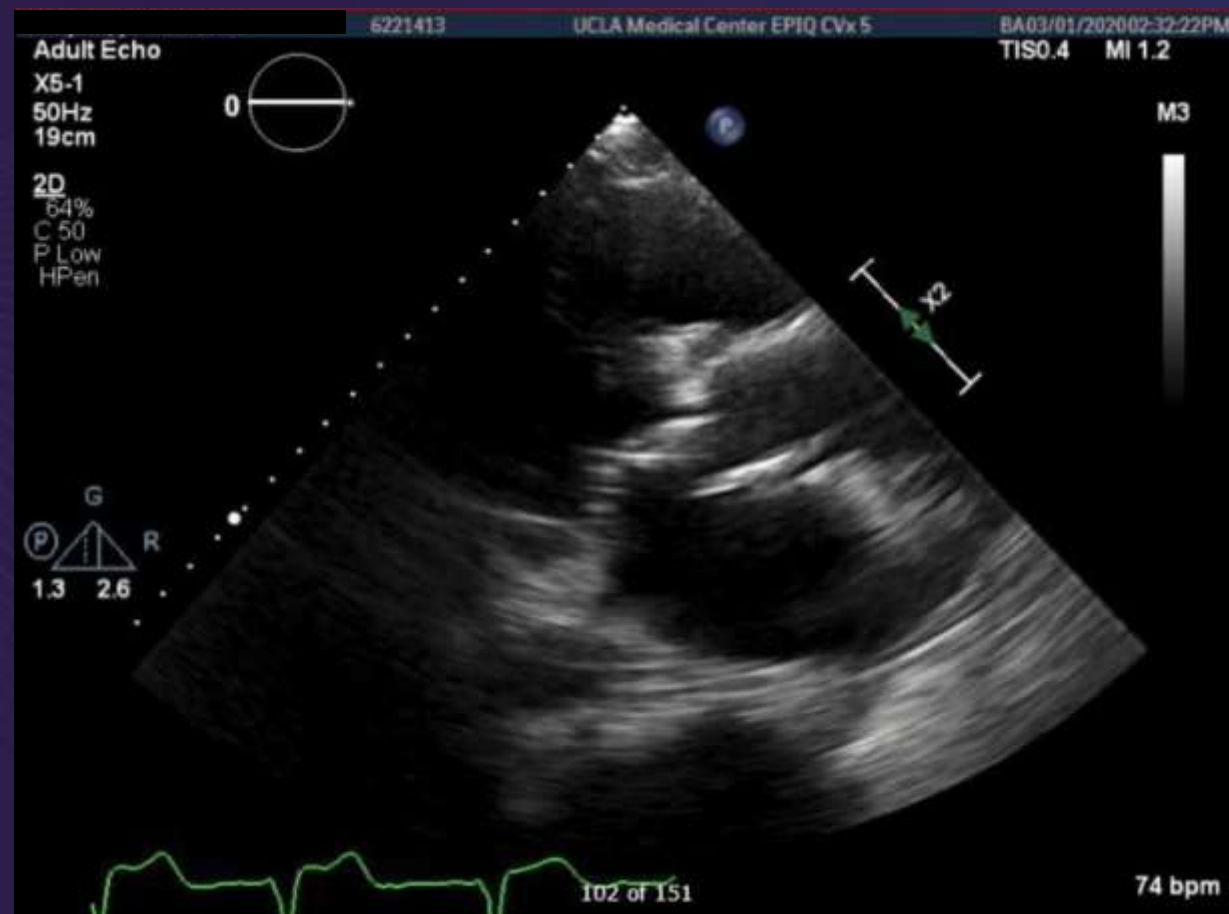
Vent. rate	81	BPM
PR interval	*	ms
QRS duration	121	ms
QT/QTc	402/467	ms
P-R-T axes	* 252	67

Atrial fibrillation  
Multiple ventricular premature complexes  
IVCD, consider atypical RBBB  
Abnormal lateral Q waves  
Anterior infarct, old  
Abnormal ECG

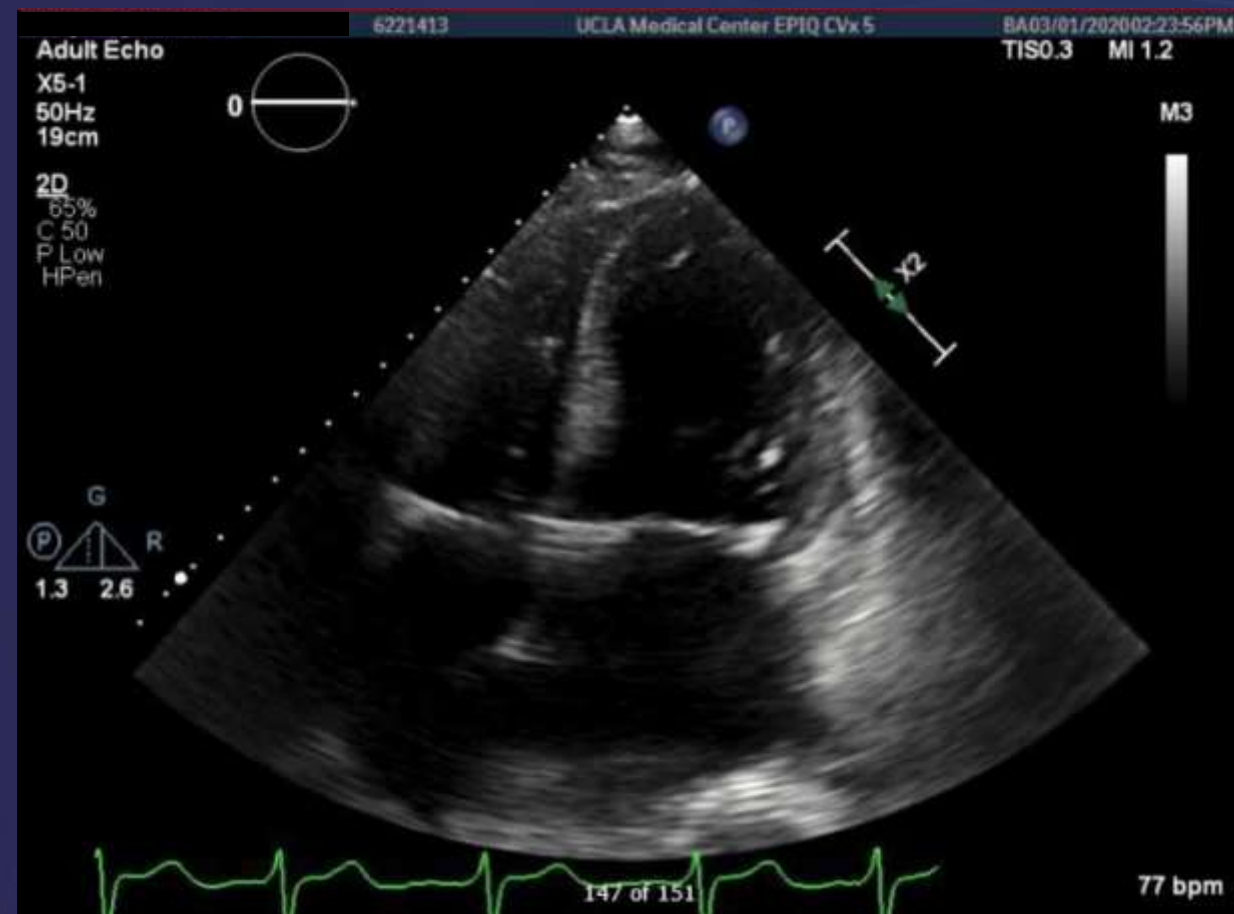
Technician:  
Test ind:

Referred by: MICHAEL LEE





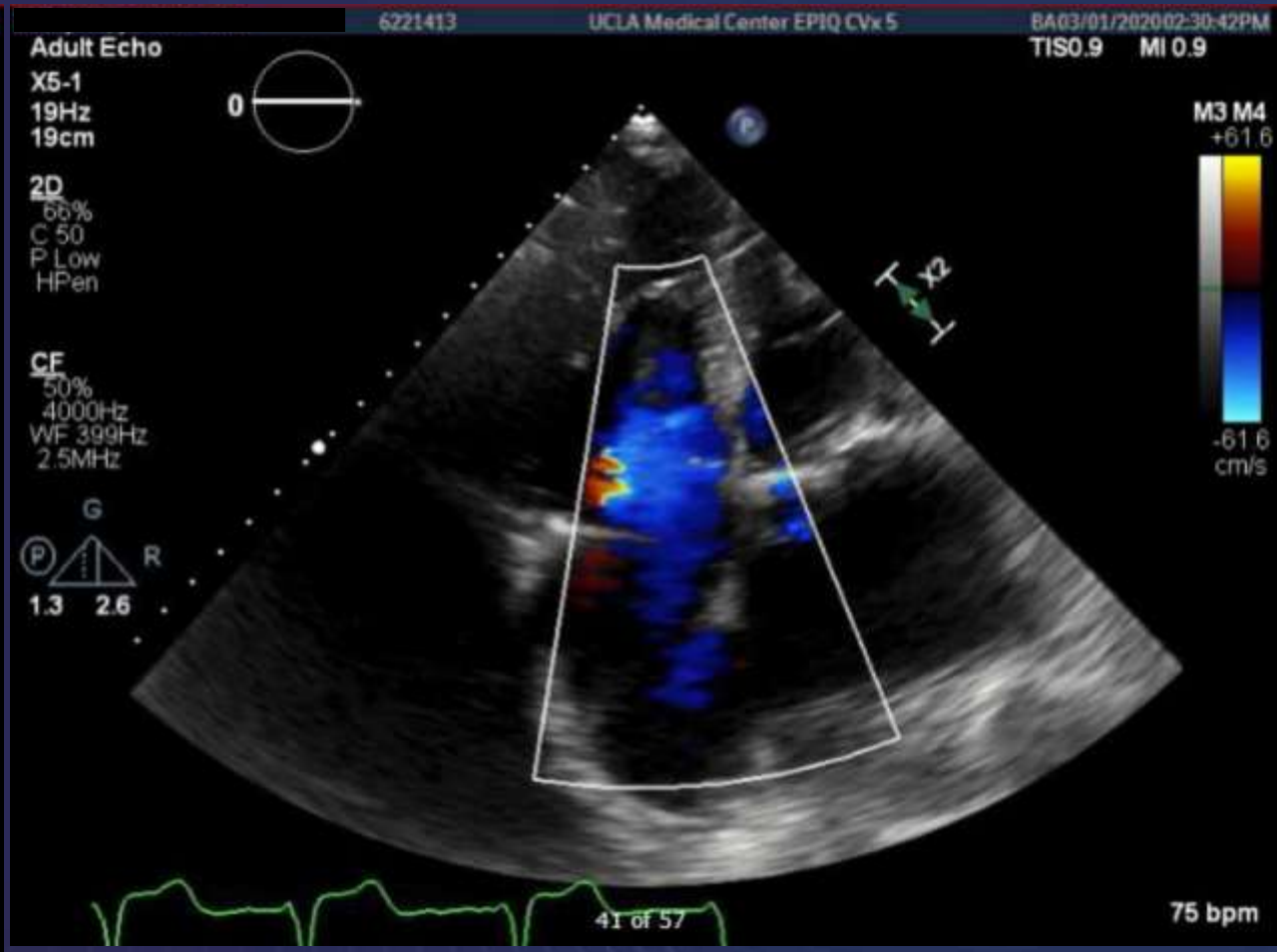
Moderate aortic stenosis



EF 20%

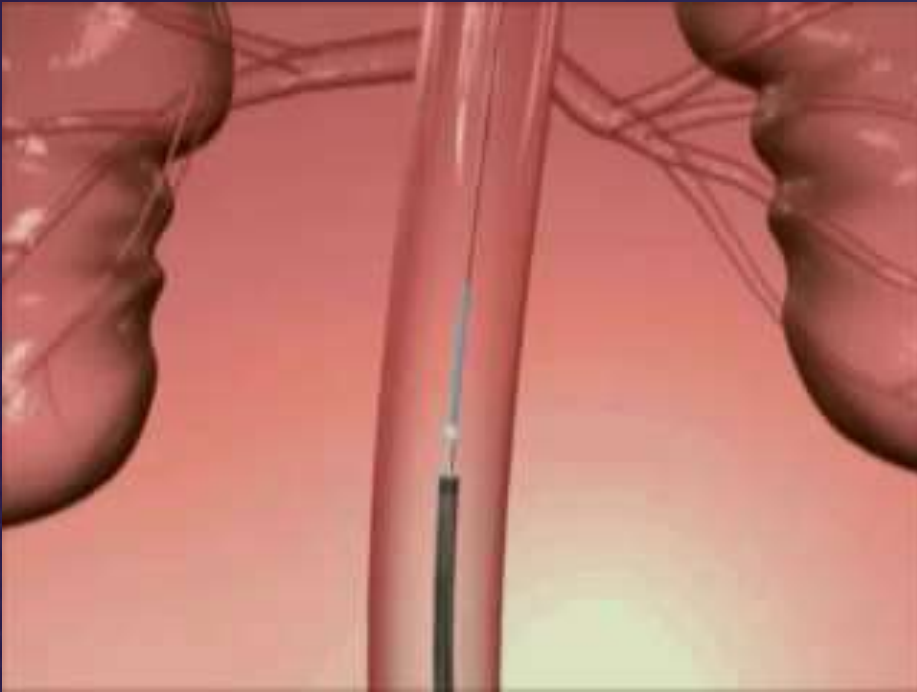


Dilated RA and RV



Moderate TR  
PASP 60 mmHg

# ANGIOGRAPHY

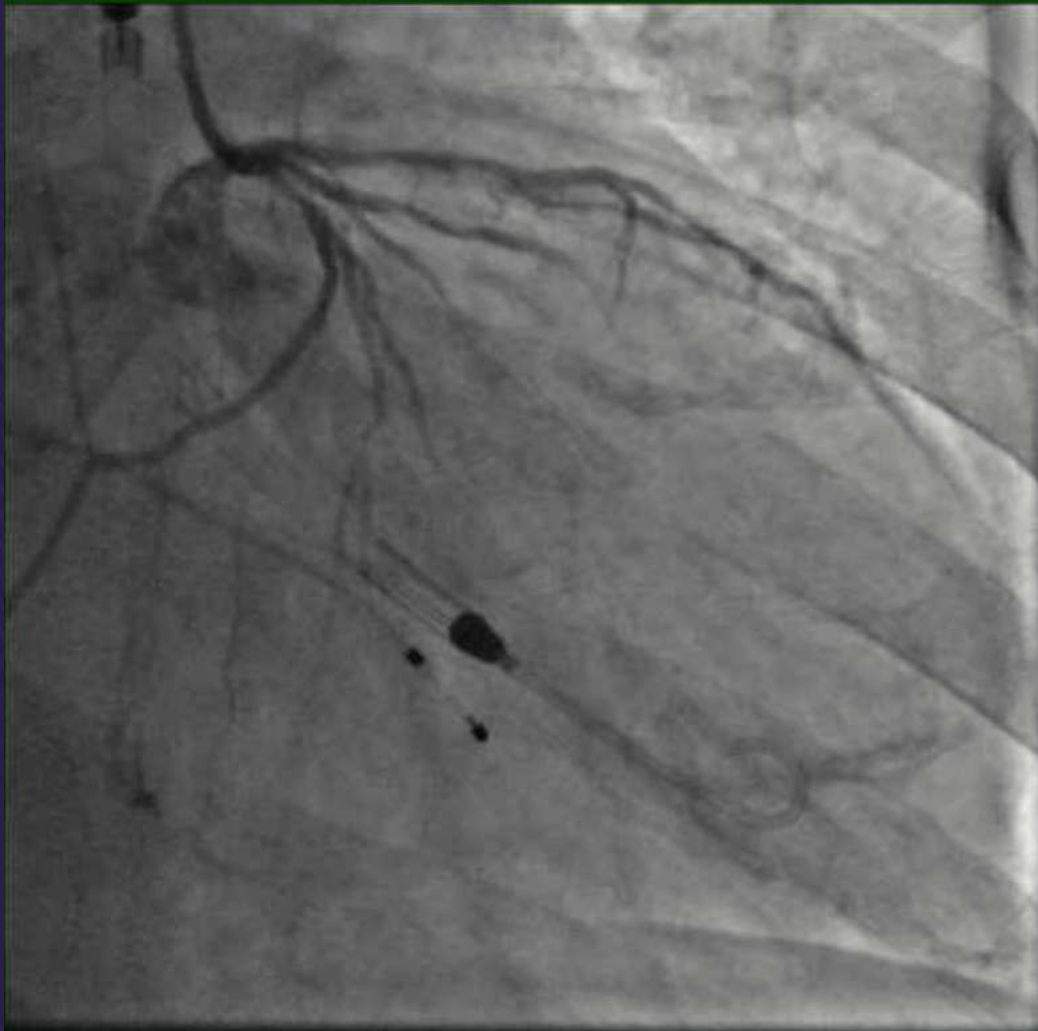


- 14F sheath
- Non-pulsatile flow
- Augment cardiac output by 3.5 L/min
- Does not require stable cardiac rhythm or native cardiac output/blood pressure signal for optimal function
- Unloads left ventricle
- \$20,000



- Radial access
- BP 76/39 mmHg after radial cocktail
- LVEDP 27
- Bradycardia (HR 45)

# ANGIOGRAPHY





# DISCUSSION I

- 81 y.o. male with severe biventricular dysfunction and multivessel disease
- Patient deemed to be a non-surgical candidate
- Volume overload
- Mechanical circulatory support device for hemodynamic collapse
- Severe coronary artery calcification
- Occluded RCA and severe LCX

# *Single-Operator Technique*

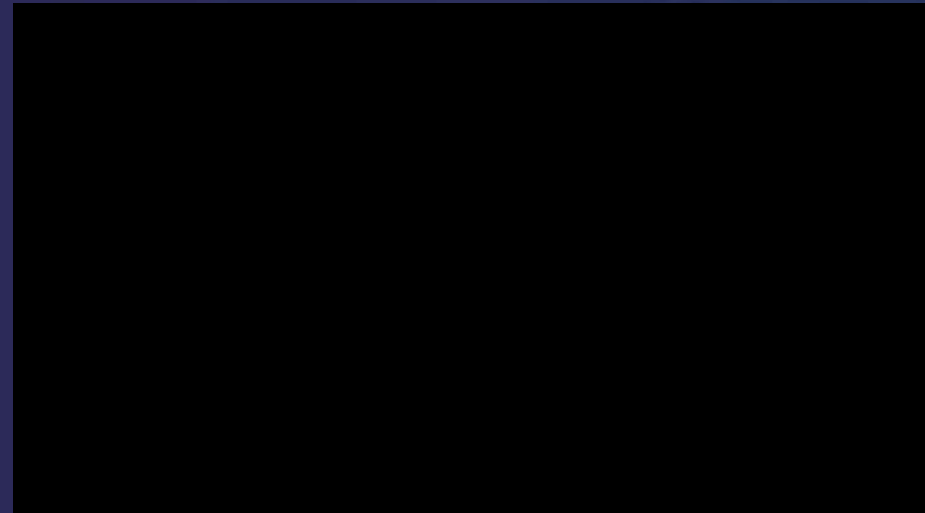


Lee MS, et al. J Invasive Cardiol 2016.

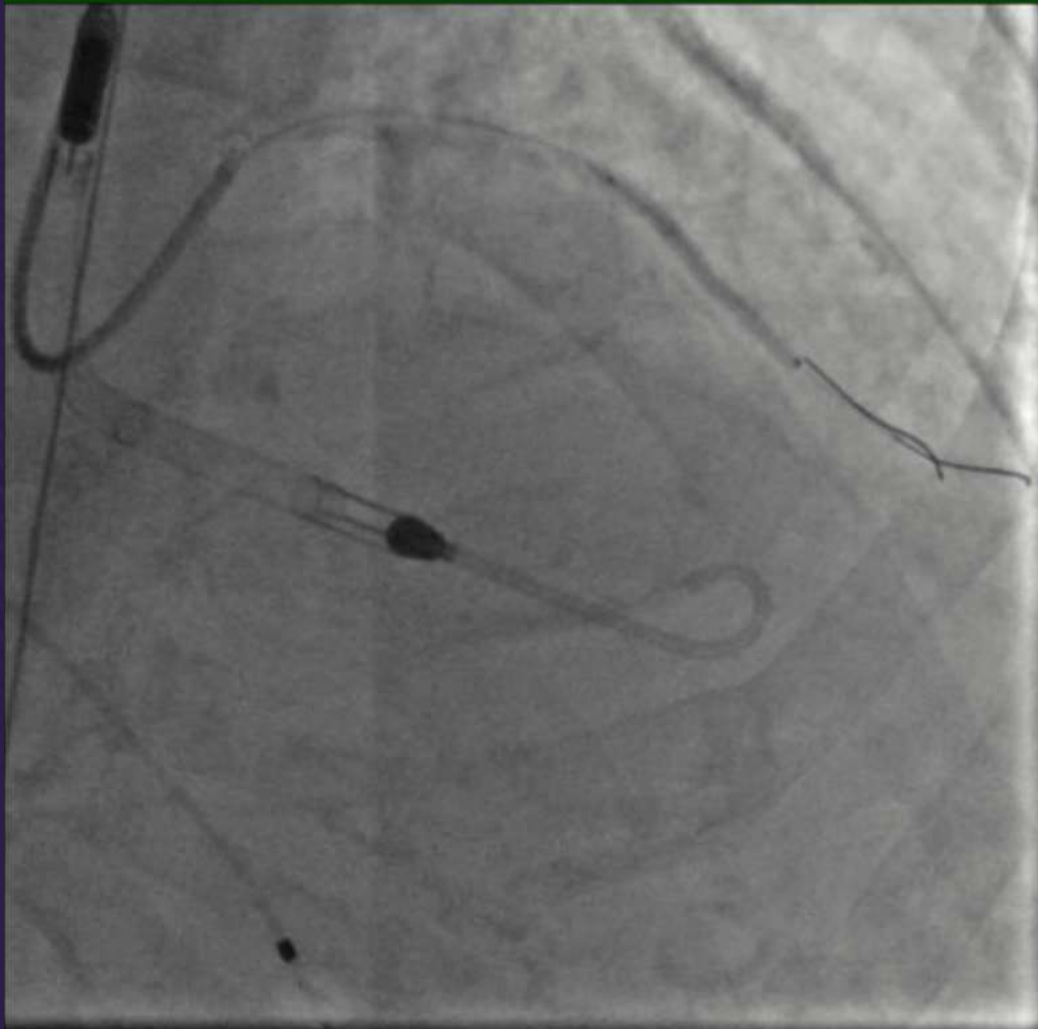
# Orbital Atherectomy of LAD



Orbital atherectomy with 1.25 mm crown at low (80,000 rpm) and high-speed (120,000 rpm)

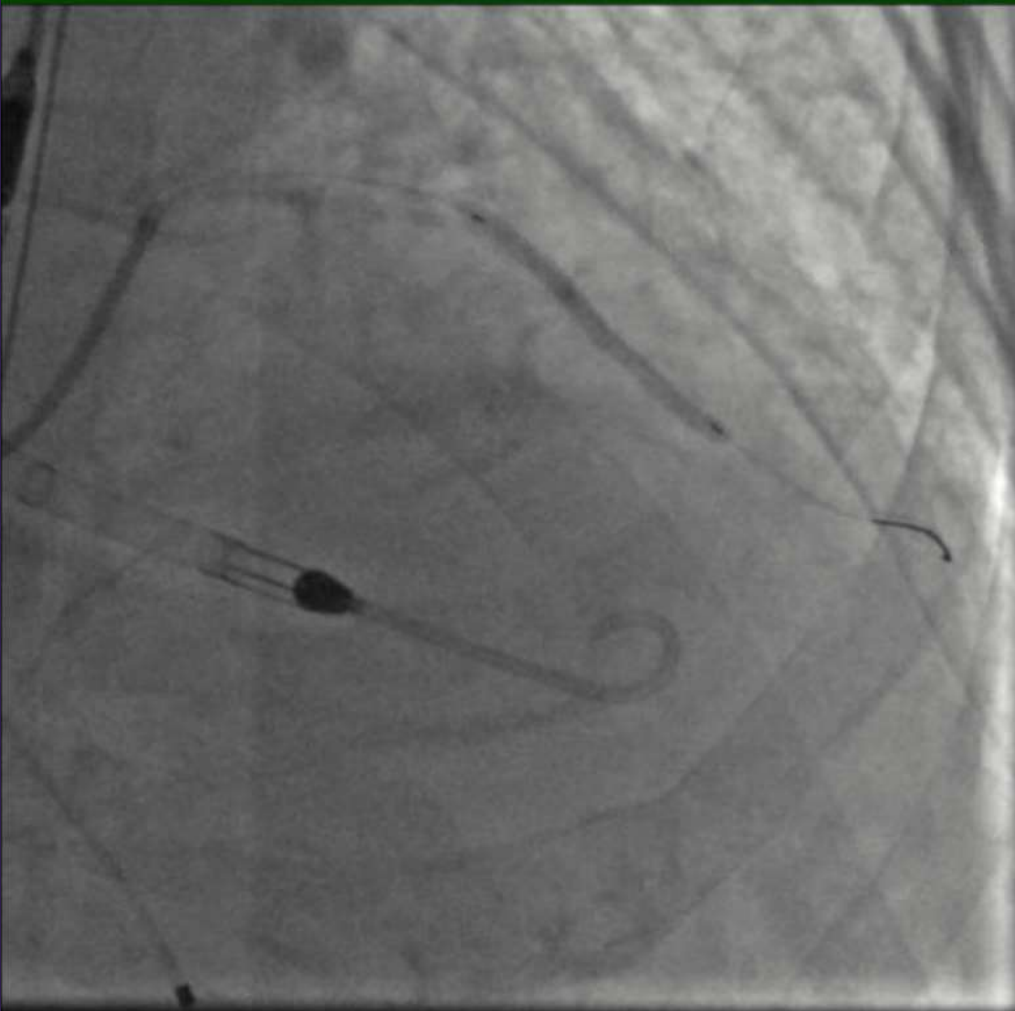


# Predilatation of LAD

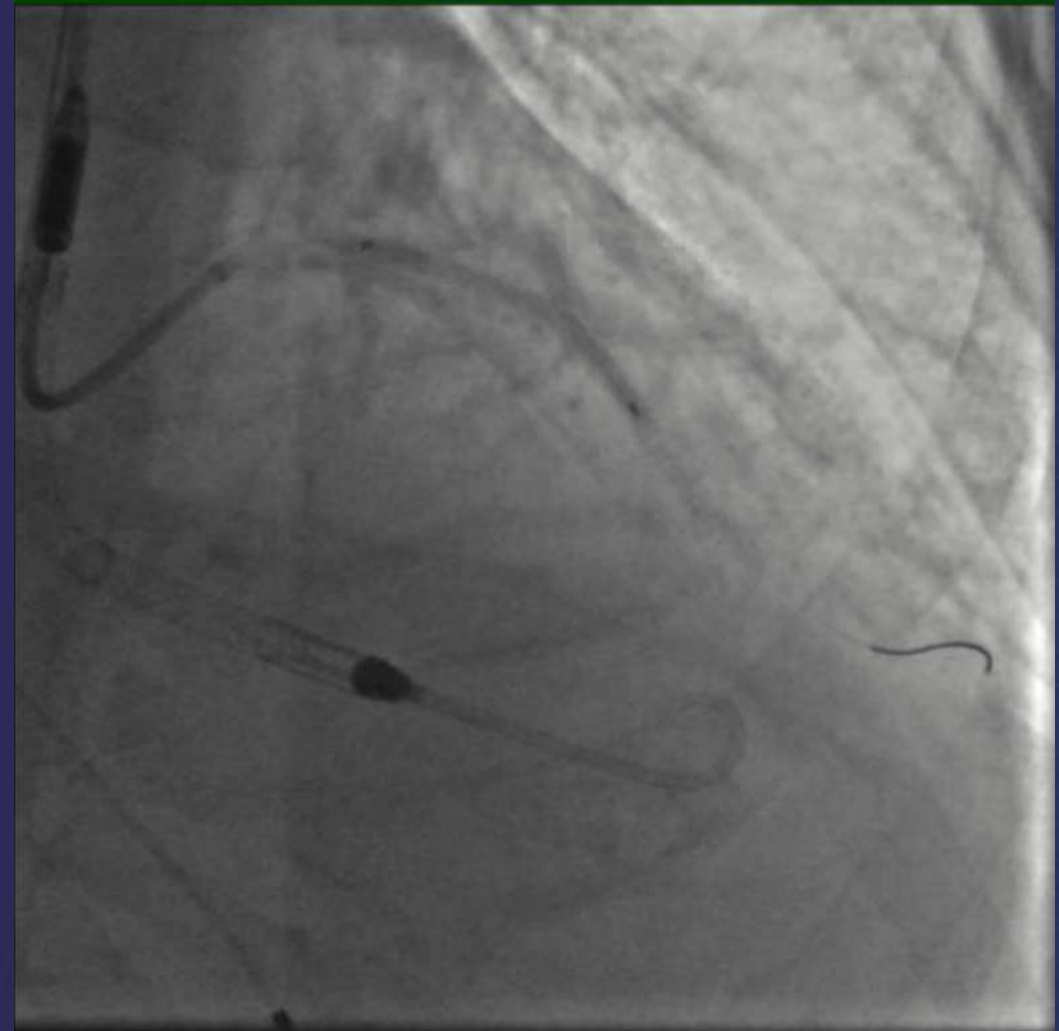


Predilatation with 2.5 x 30 mm balloon

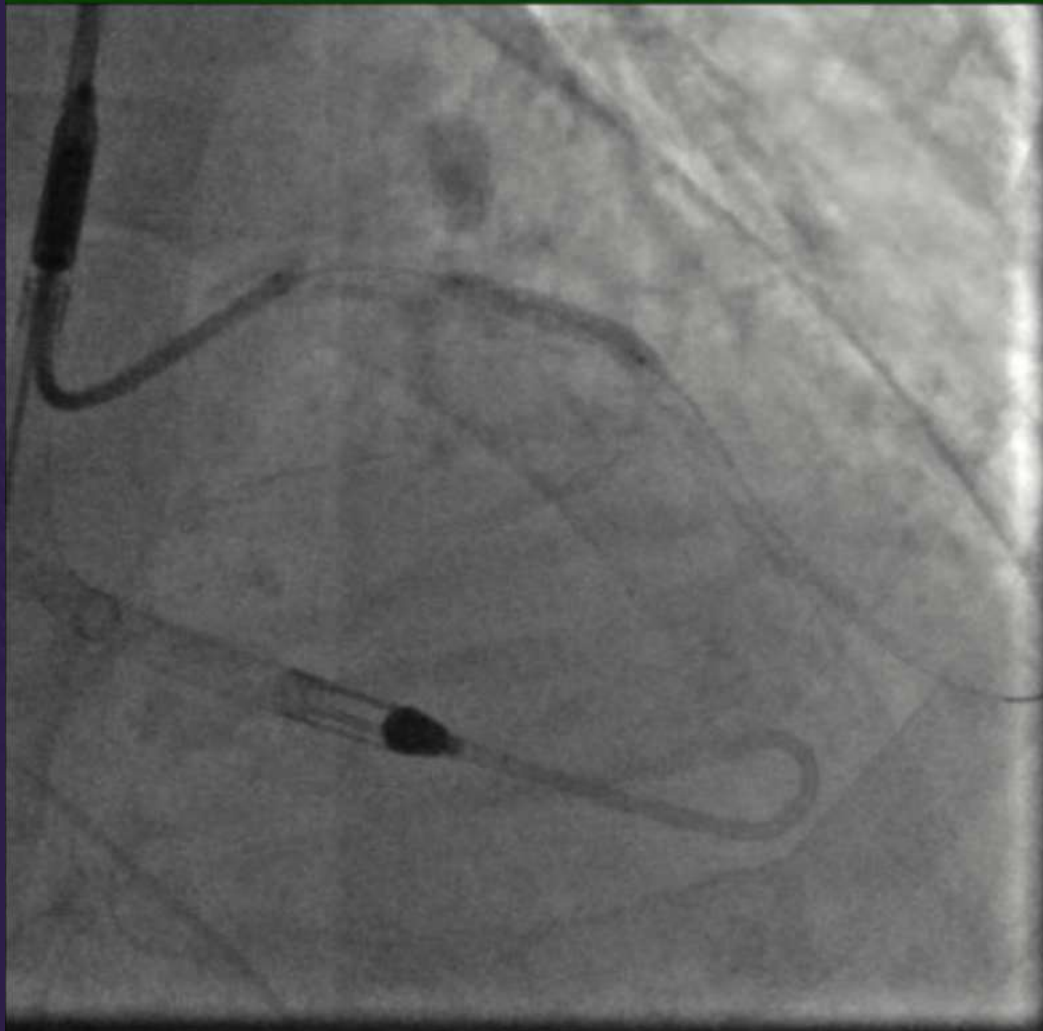
# Stenting of LAD



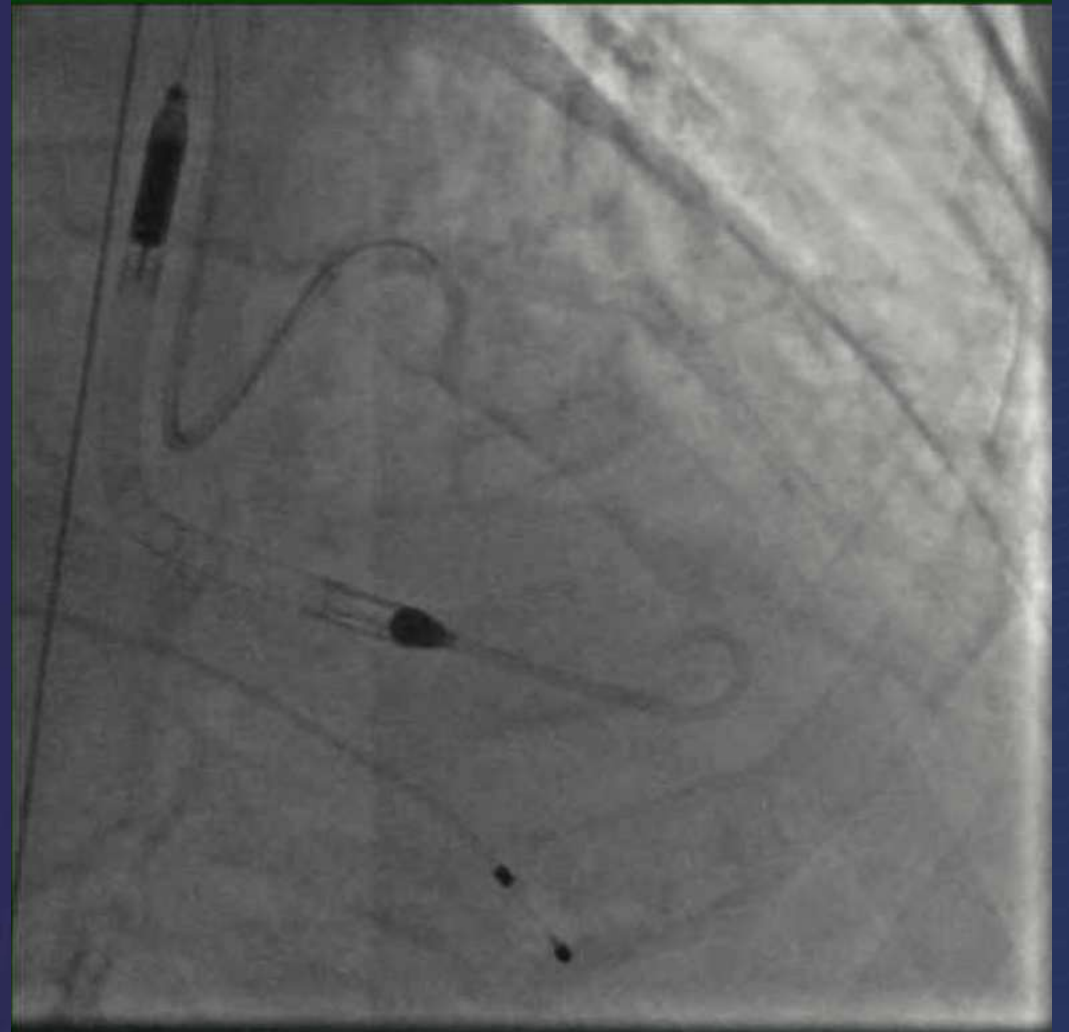
2.75 x 38 mm Xience stent



3.25 x 38 mm Xience stent



Post-dilate 3.5 x 20 mm NC



Final angiography

# DISCUSSION II

- Complex, severely calcified multivessel disease involving the LAD
- Mechanical circulatory support device

## DISCUSSION III

- Plaque modification with orbital atherectomy can be performed for severe coronary artery calcification
- Mechanical circulatory support device can be used in patients with LV dysfunction who undergo complex PCI, including coronary atherectomy