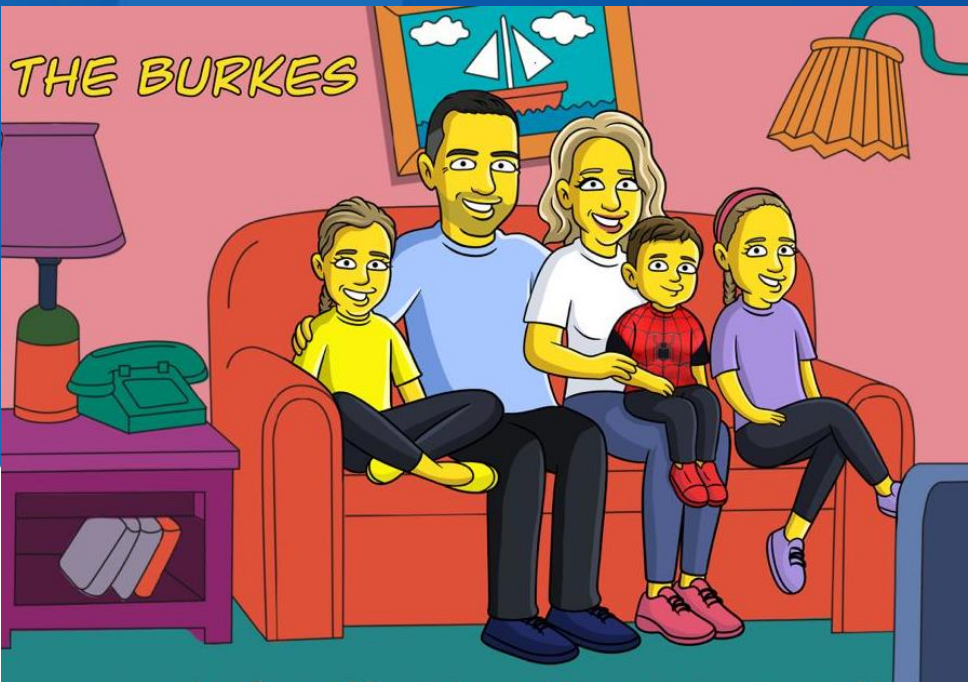




# CATH LAB - What's New and How it Will Benefit Your Patients?



Dave Burke

# Advances in the Cath Lab

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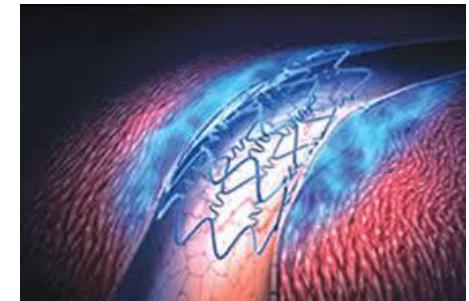
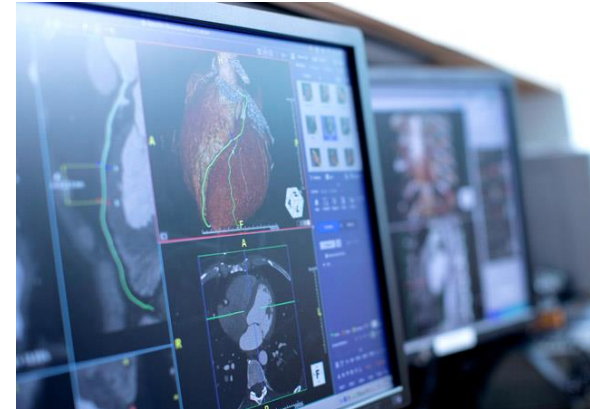
Advances have helped make procedures safer and more straightforward.

Technology allows us to make the right decisions in terms of whether patients should get stents, and then when needed, give us the enhanced ability to be able to get great results.

Advanced imaging, functional assessment, improved percutaneous techniques and cutting edge equipment allow us to deliver improved quality of life.

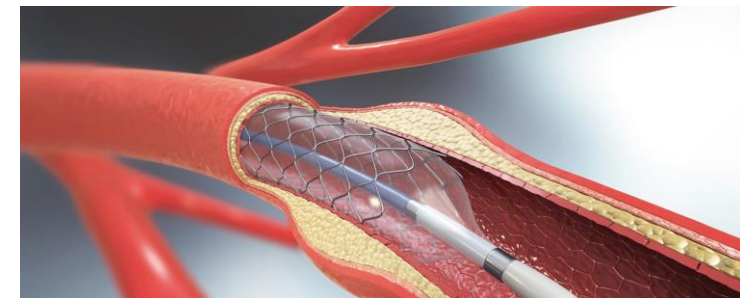
# Advances & Developments in the Cath Lab

- Multimodality (non-invasive) imaging advancements
- Radial arterial access
- Coronary imaging – IVUS, OCT
- Functional assessment
- Stent advancements
- Drug eluting balloons
- Shockwave, Diamondback
- TAVI, structural – valve in valve
- CTO techniques

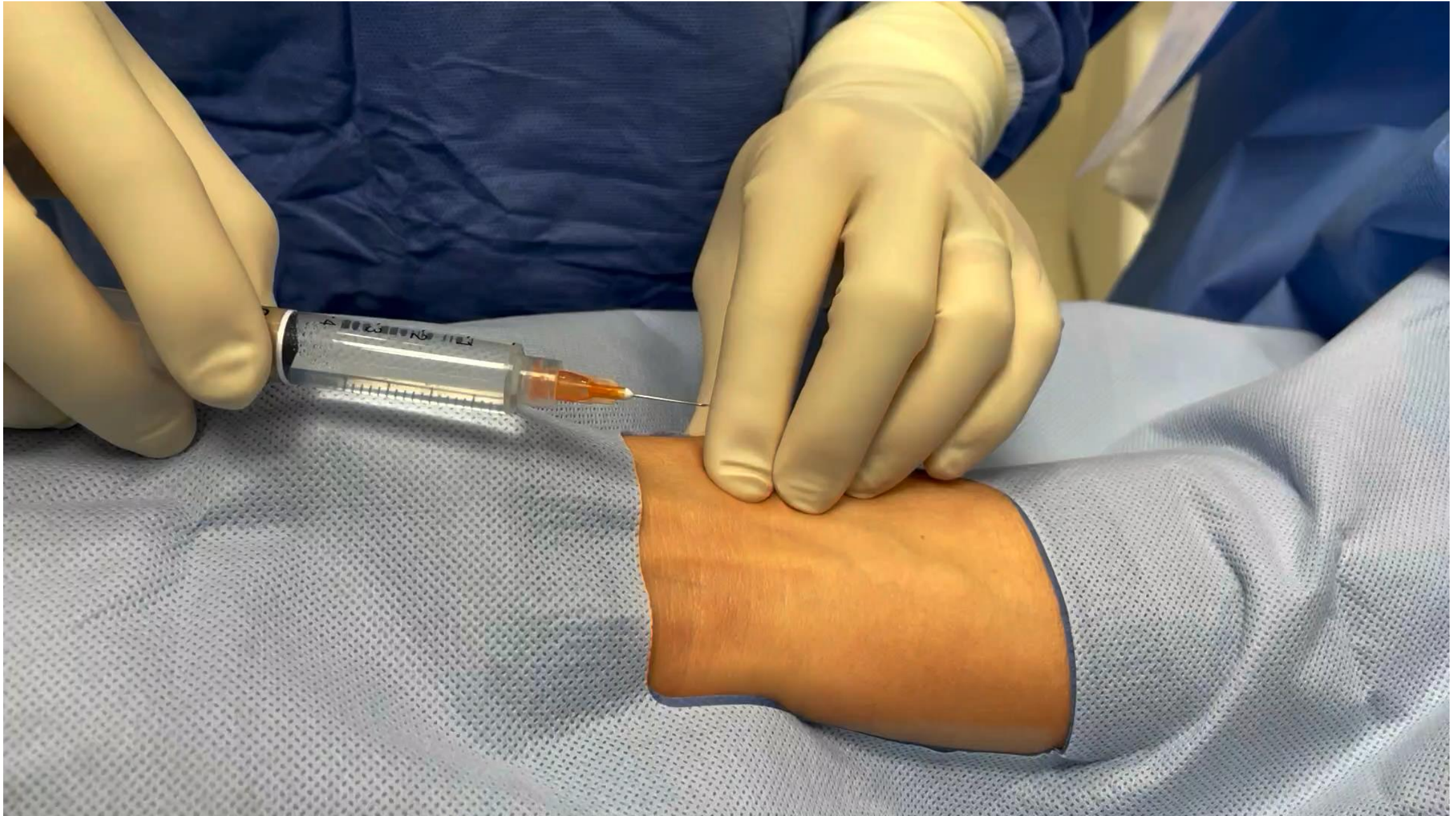


# Angioplasty & Stenting

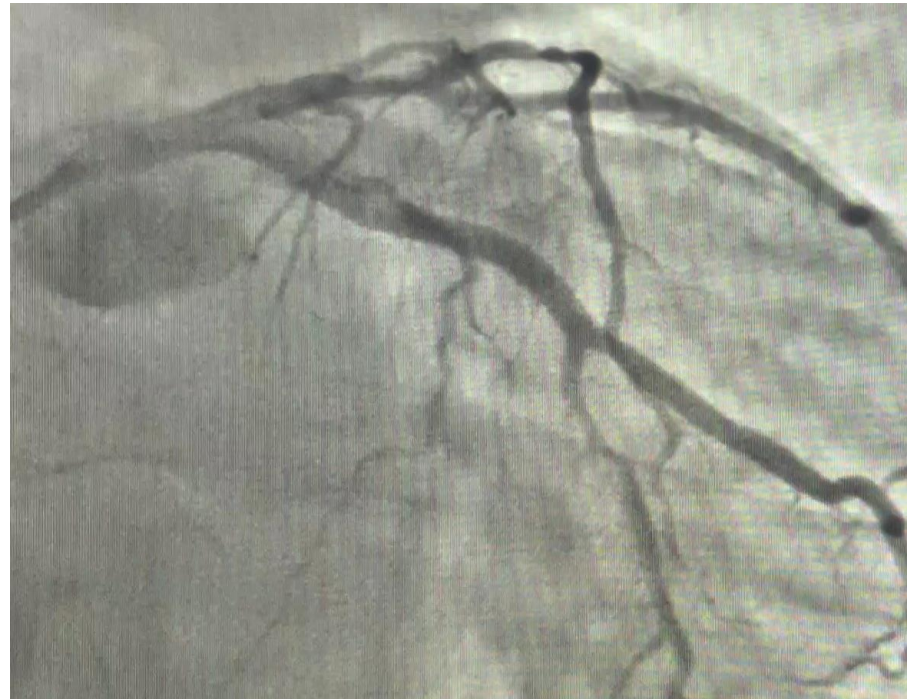
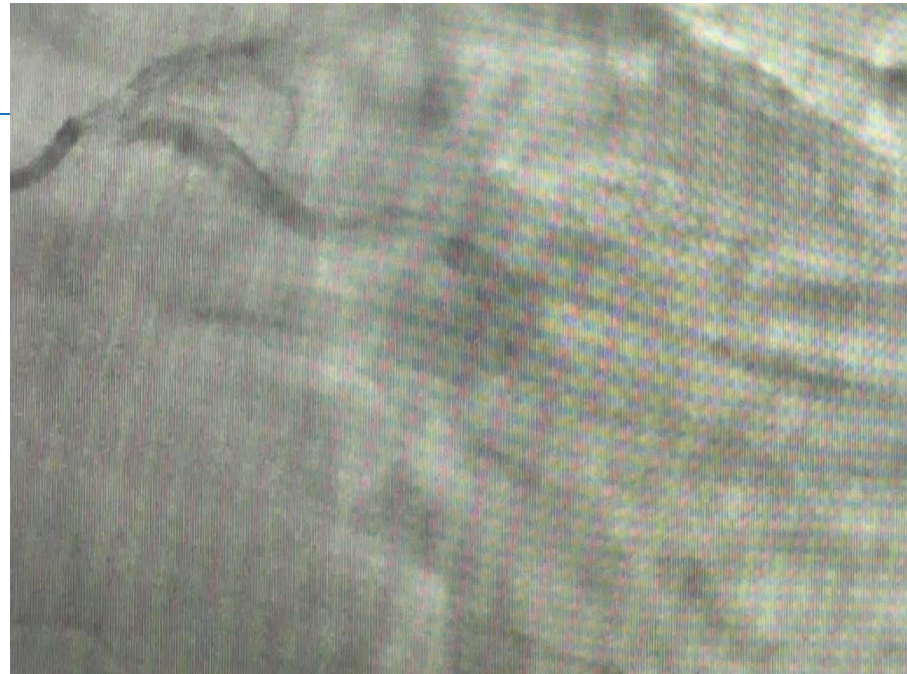
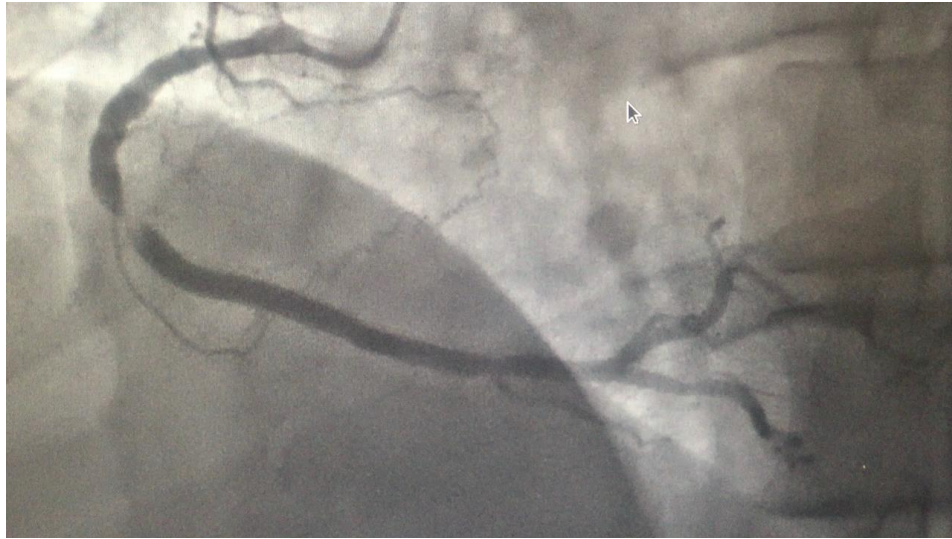
- First coronary angiogram 1958
- Angioplasty has been around for 45 years.
- Massive progress in stent design and production
  - Drug eluting and bioresorbable
  - Less stent thrombosis and in-stent restenosis
  - More deliverable
  - Bifurcation and Left main indications
- Reduced patients requiring cardiac surgery



# Radial Arterial Access

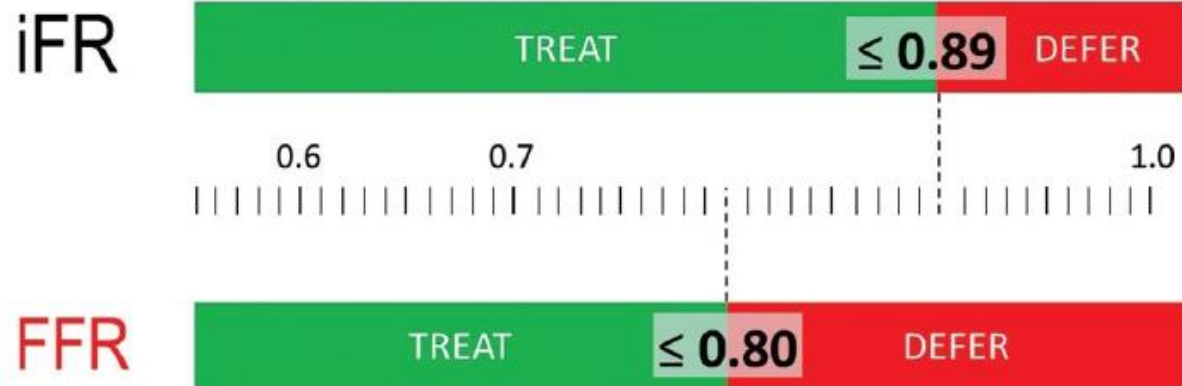
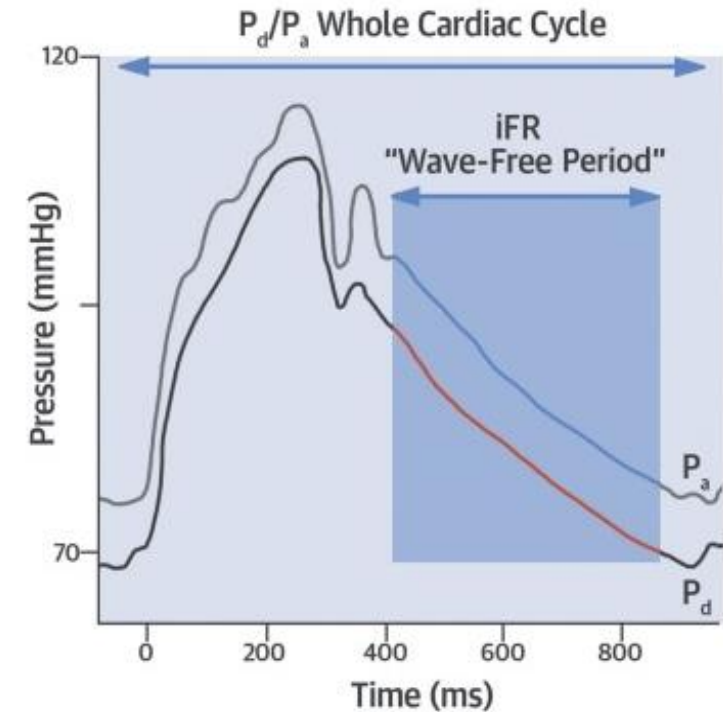
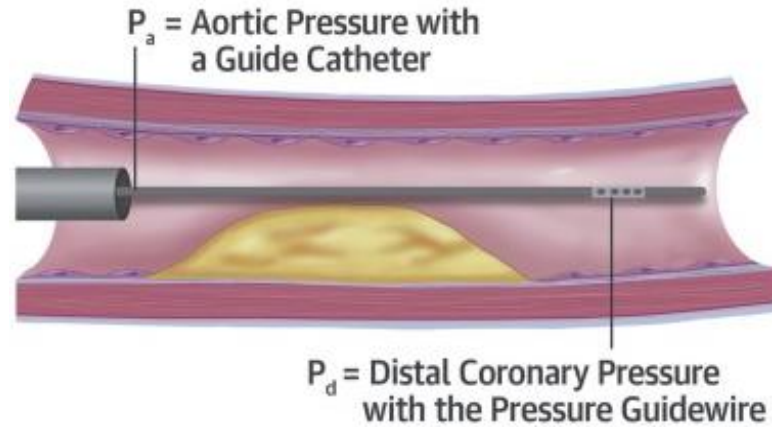


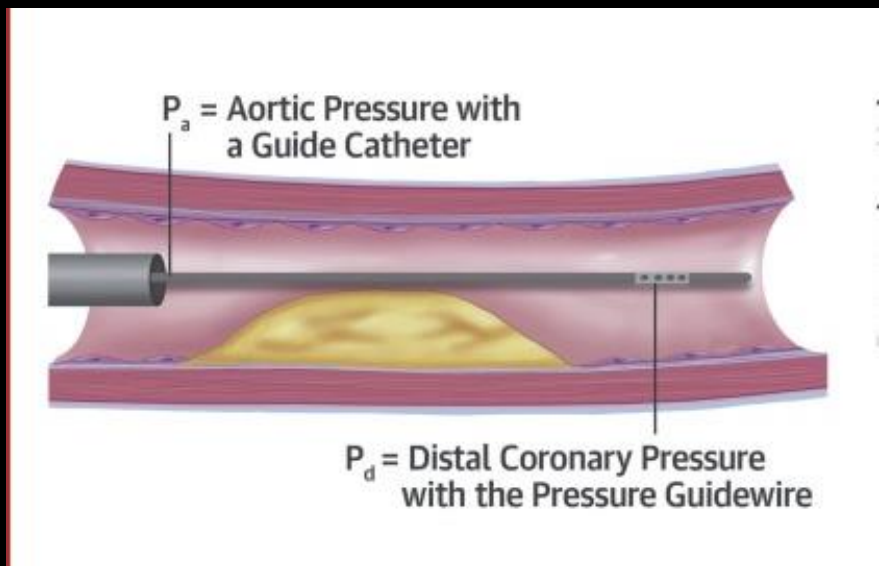
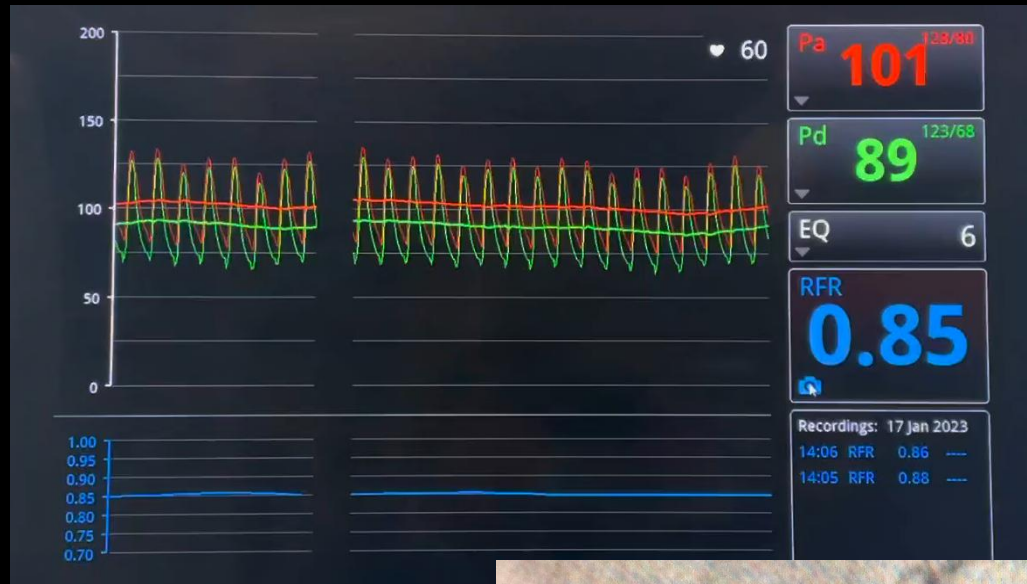
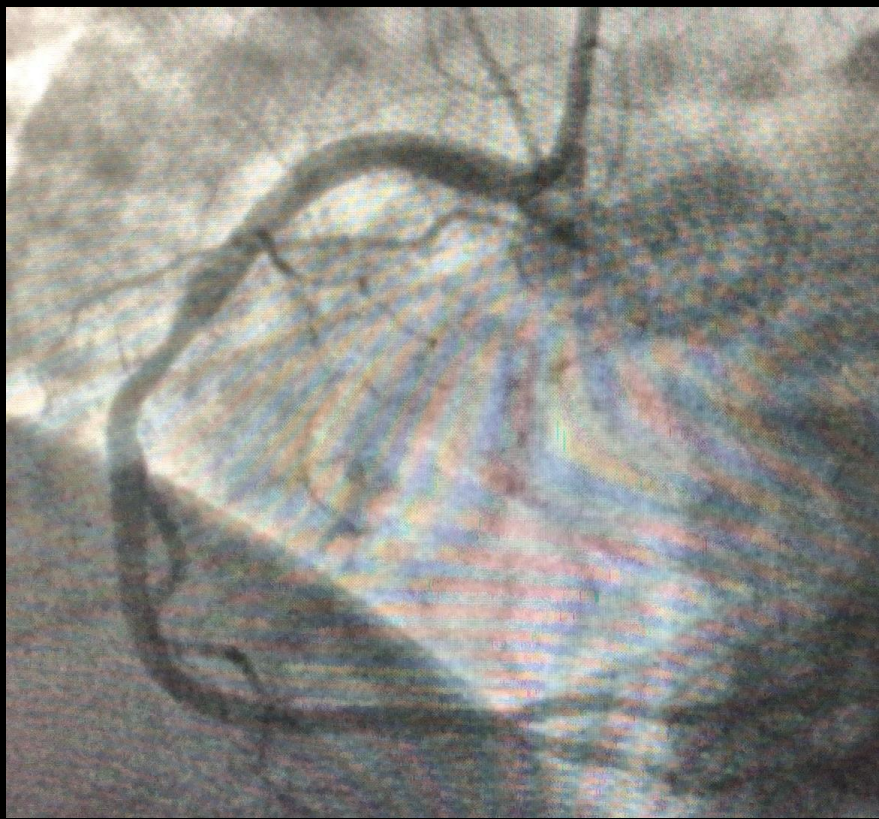
# Coronary Angiography



# Functional Assessment – intermediate lesions

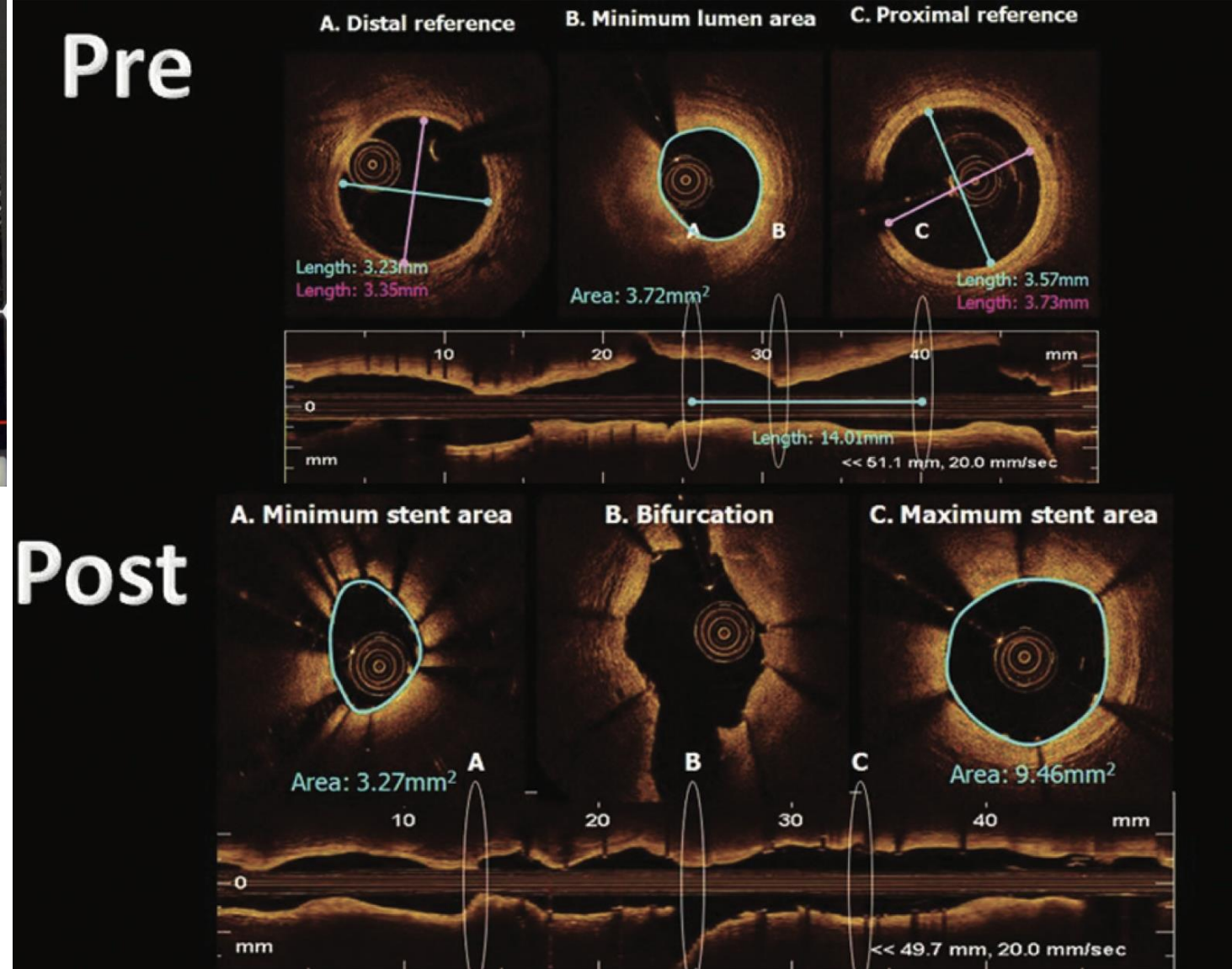
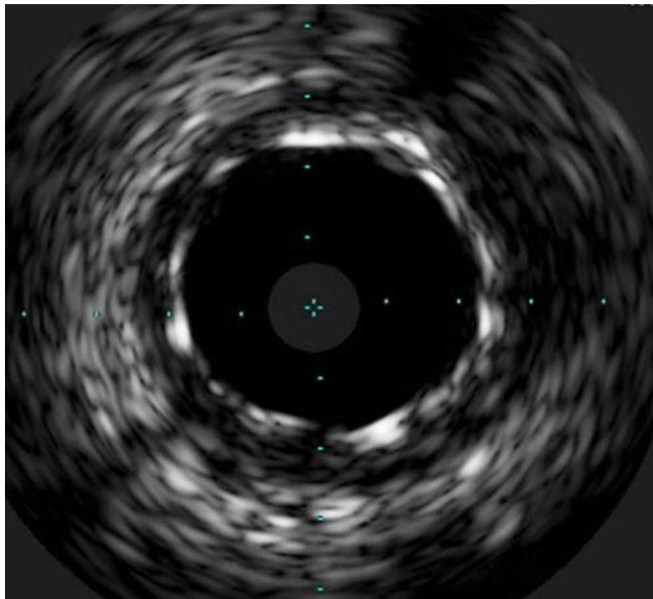
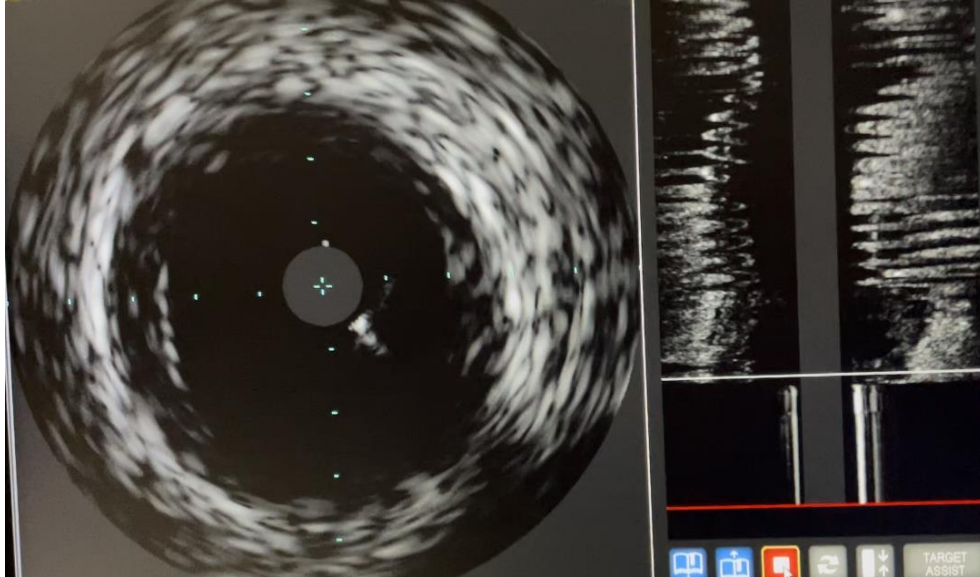
- FFR – Fractional Flow Reserve
- iFR – Instantaneous wave free ratio





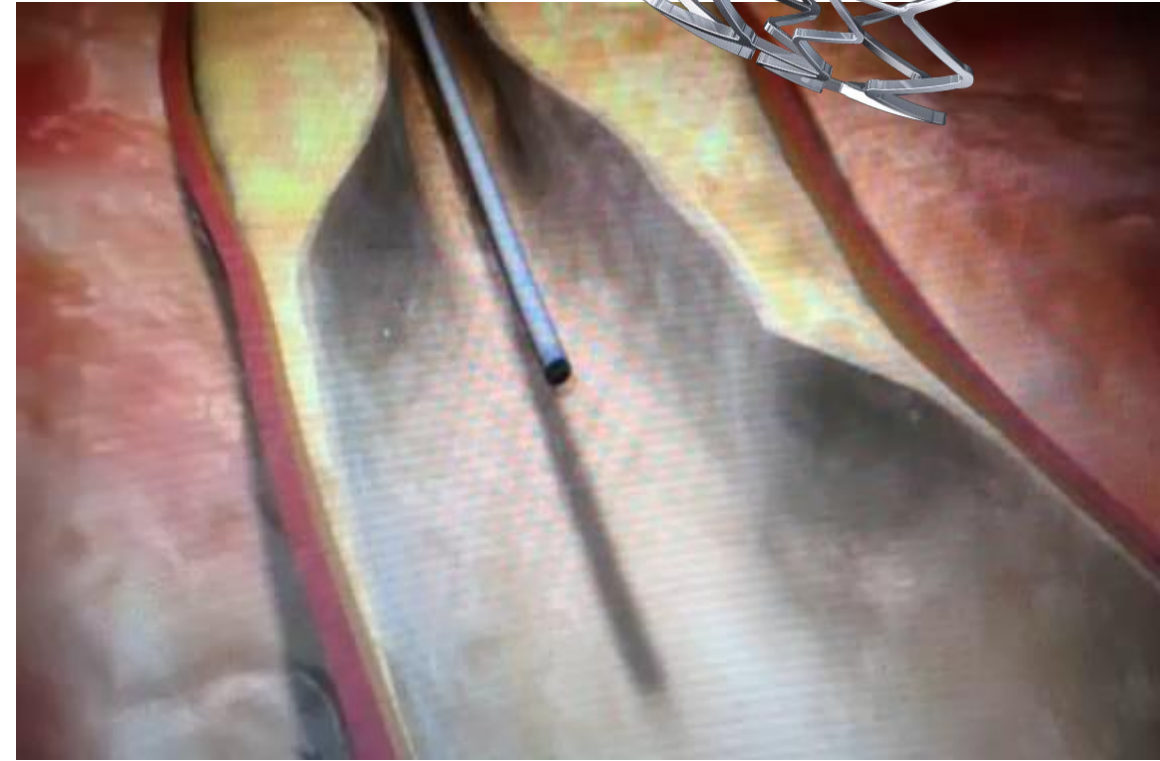
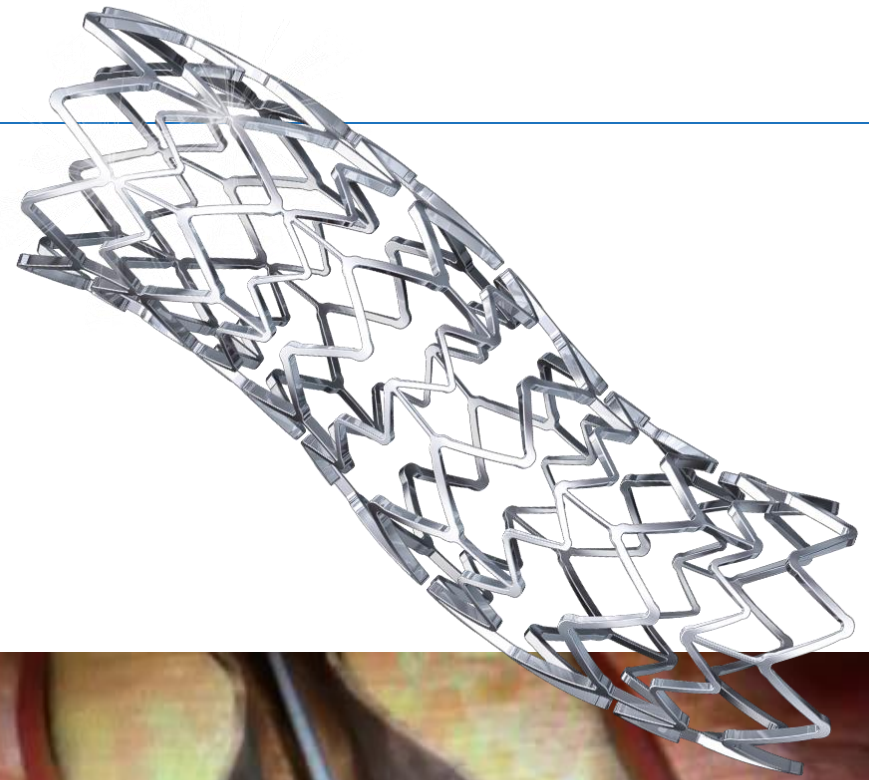


# Advanced Imaging Techniques



# Modern Stenting

- Metallic Alloy – cobalt chromium
- Polymer
- 'Drug'
- Maximal 'axial' strength and durability
- Minimal metal



# Bioresorbable Stents – the Next Generation

Polylactic acid or Magnesium frame

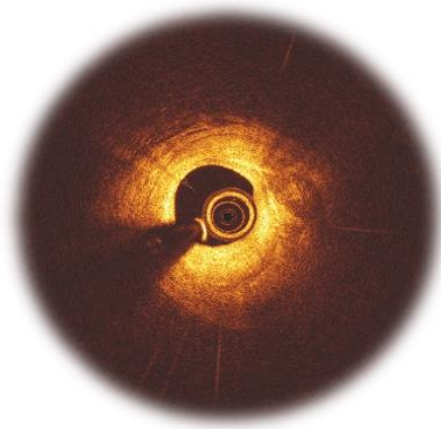
Restoration of vessel anatomy, restoration of vasomotion

Sufficient radial strength

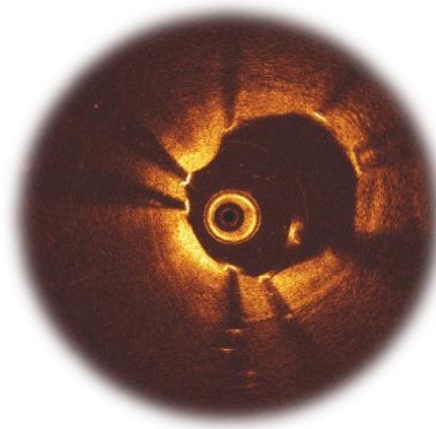
Needs to be biocompatible, low thrombogenicity



**PRE-PROCEDURE**

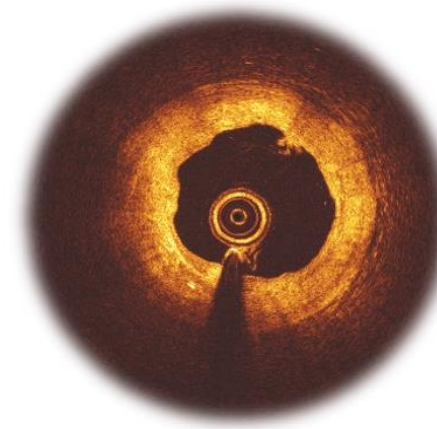


**POST-PROCEDURE<sup>2</sup>**



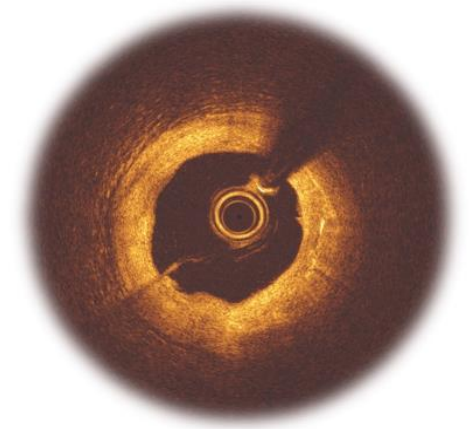
Immediately after implantation, struts are well apposed to the vessel wall.

**6M-FOLLOW UP**



While the Magnesium resorption is completing, endothelialization progresses.

**12M-FOLLOW UP<sup>2</sup>**



The resorption is completed. No struts appear in OCT.

# 'Blood Thinners' - Advice & Scenarios

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## POST CORONARY STENTING

- Dual Antiplatelet therapy, Aspirin/Clopidogrel for 12 months

## DAPT 'INTERRUPTION'

- Clopidogrel can be 'interrupted' after 1 month

## FOLLOWING MI

- Dual Antiplatelet therapy, Aspirin/Ticagrelor for 12 months

## FOLLOWING TAVI

- Dual Antiplatelet therapy for 6 weeks, then Aspirin alone

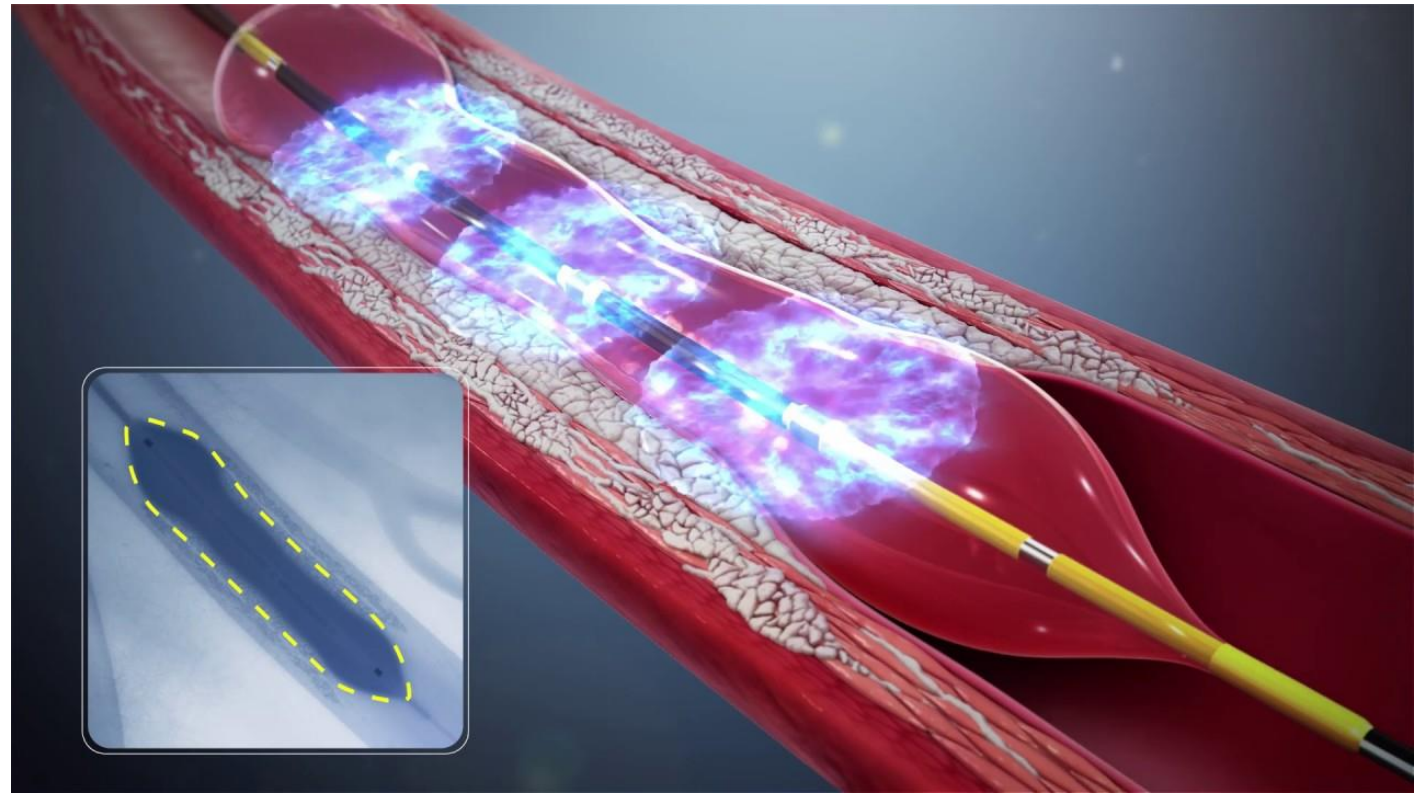
## STENTING & ATRIAL FIBRILLATION

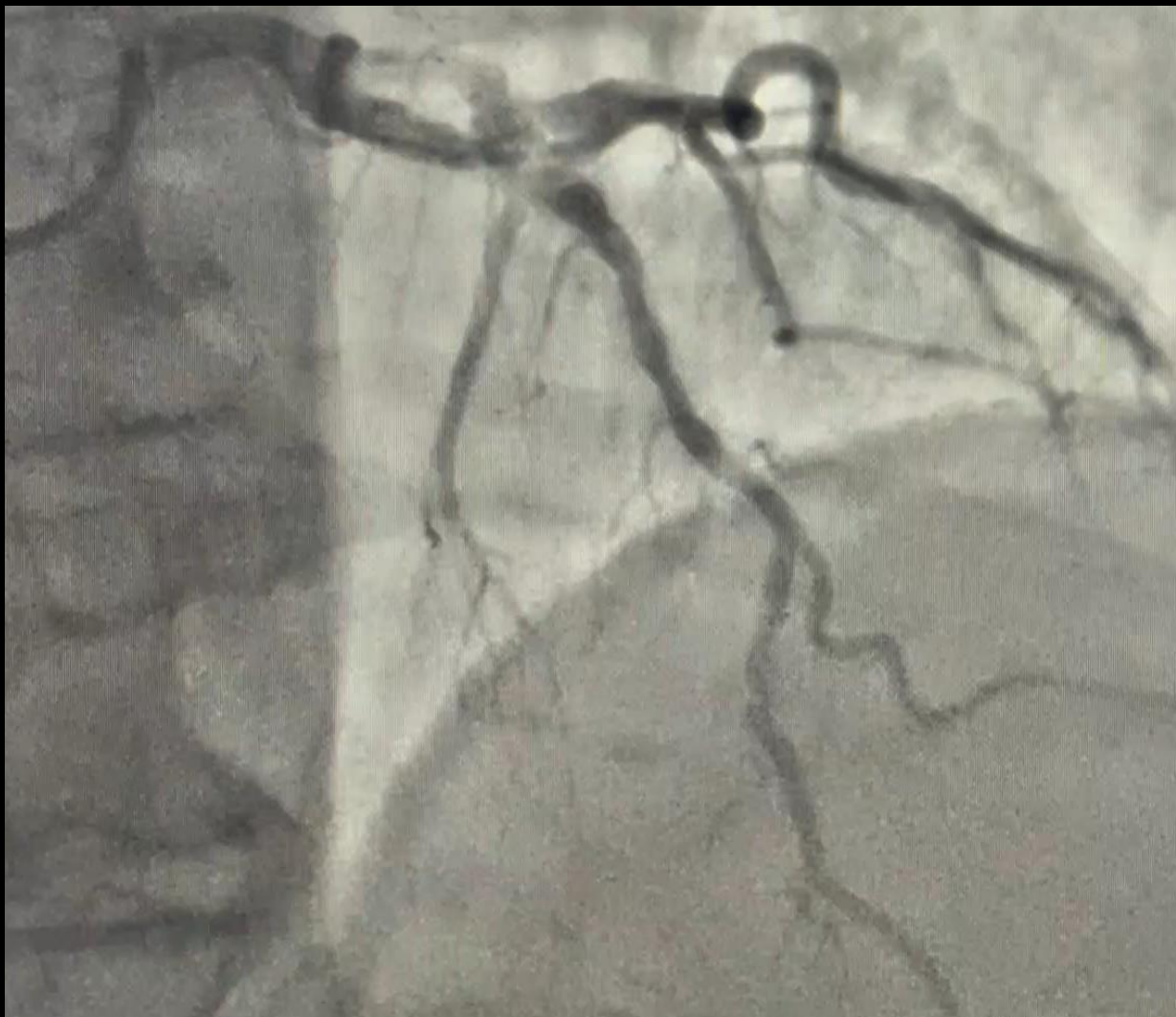
- NOAC and Clopidogrel for 6 months, then NOAC alone

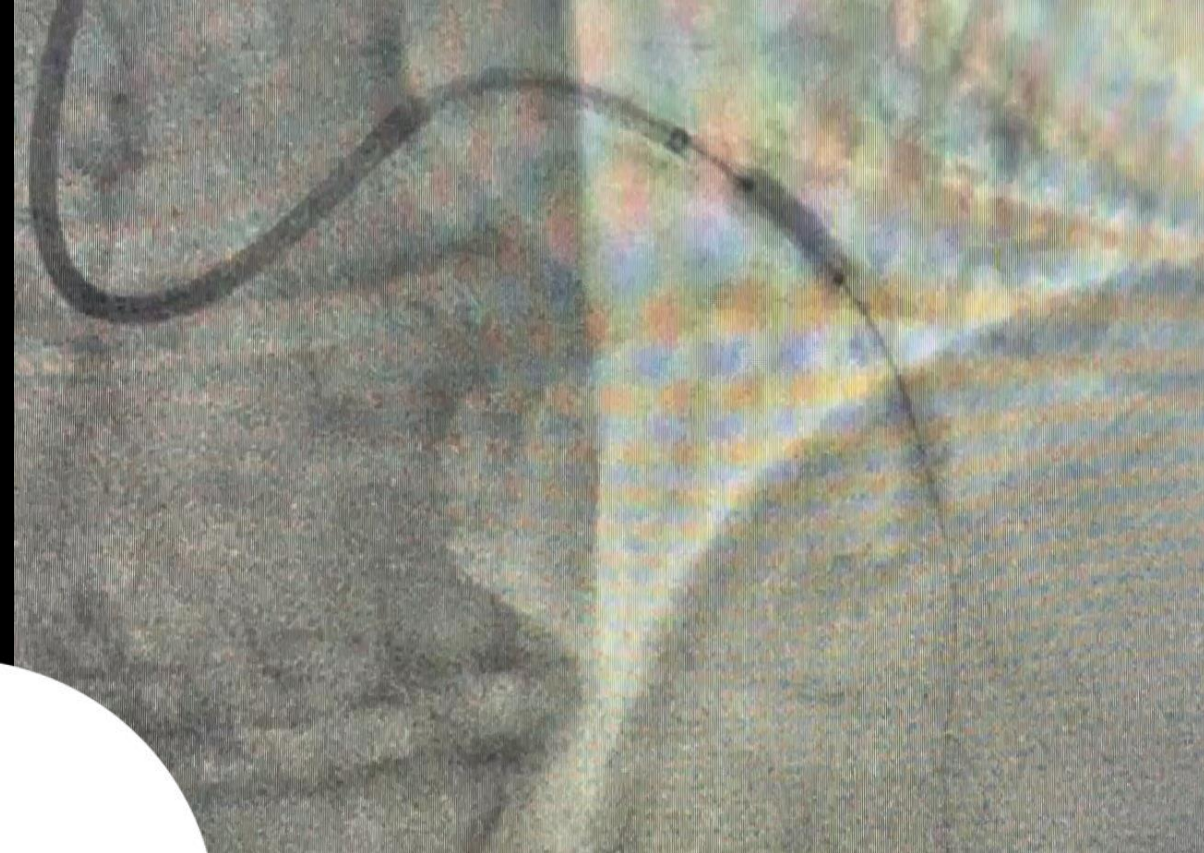
# Shockwave Angioplasty/Balloons



A balloon to deliver sonic pressure waves that can pass through soft arterial tissue to “preferentially disrupt” calcified plaque and optimize stent placement.



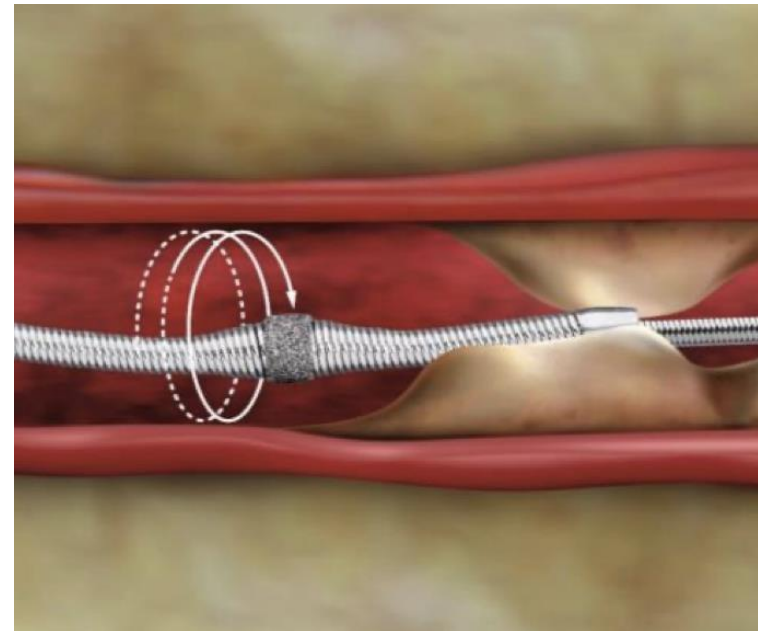
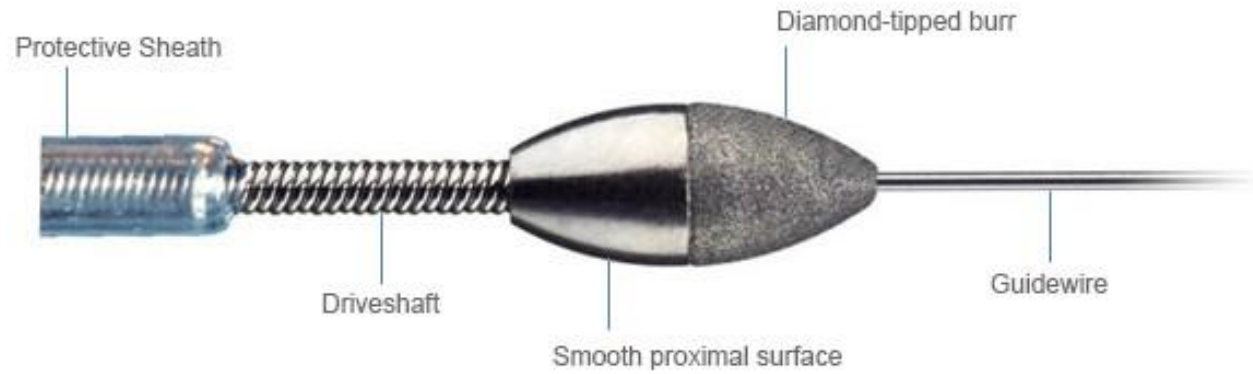




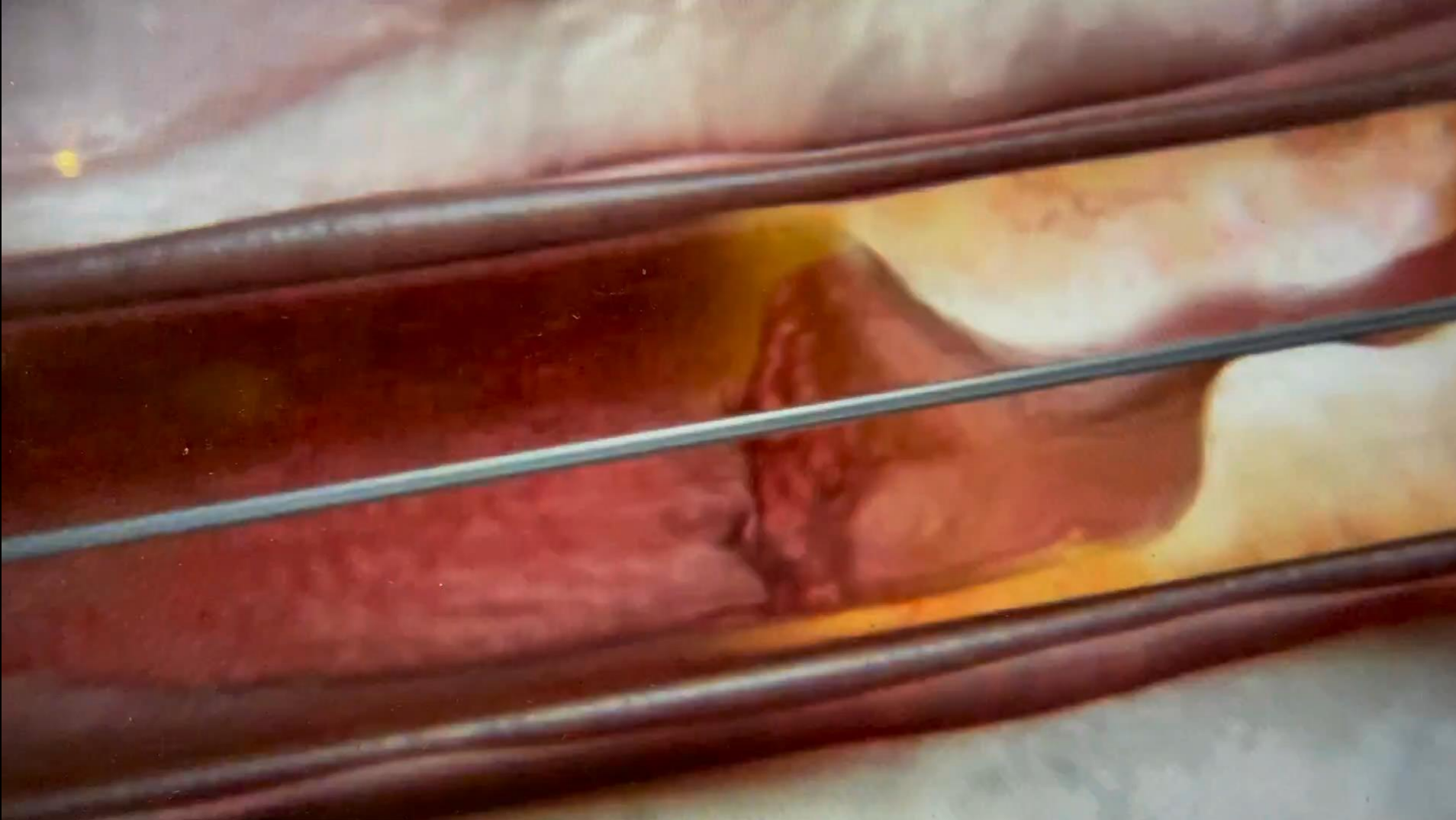




# Atherectomy

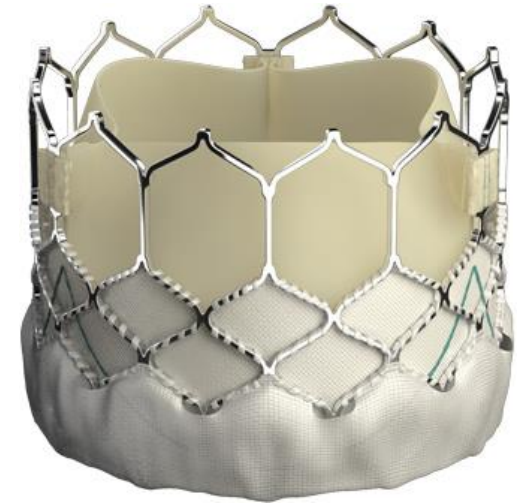
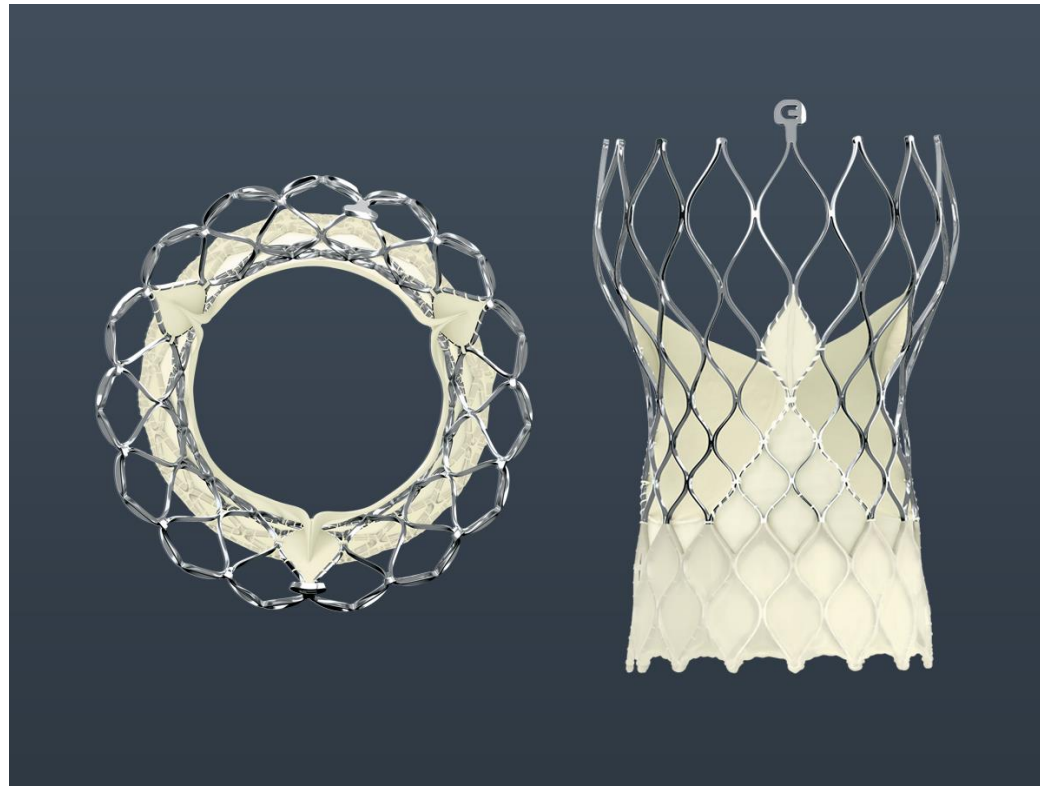
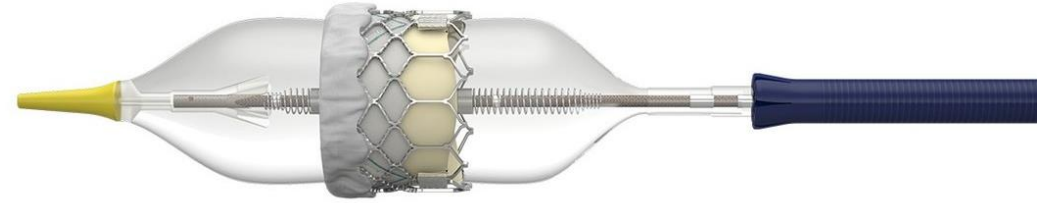


# Atherectomy

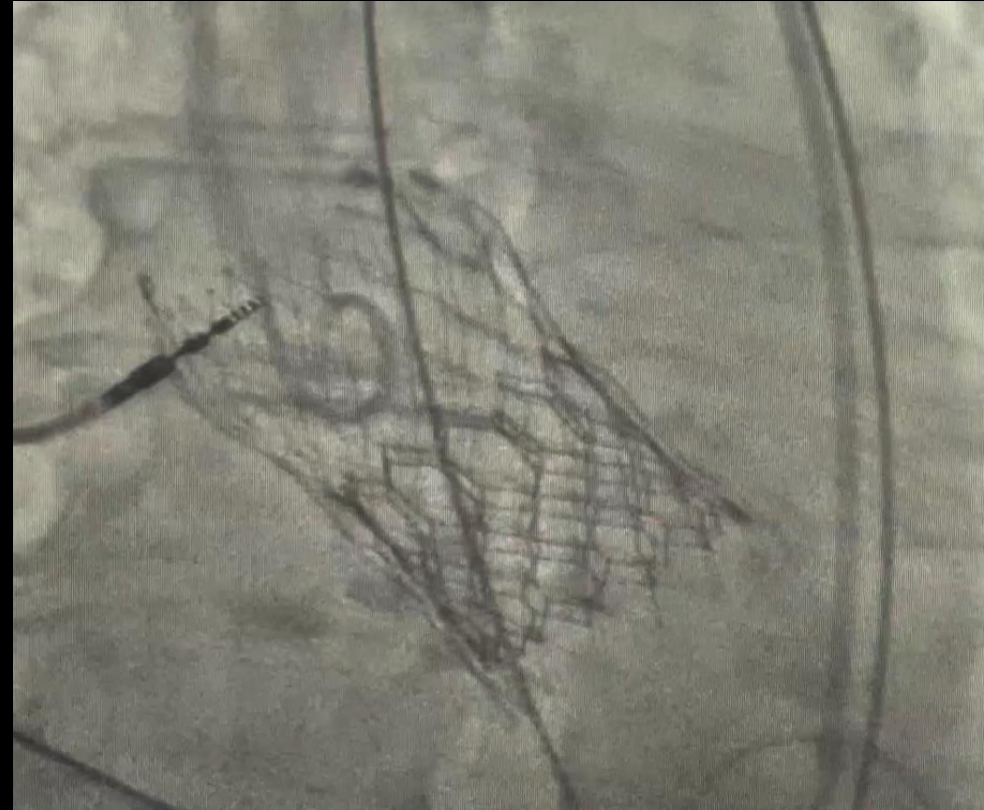
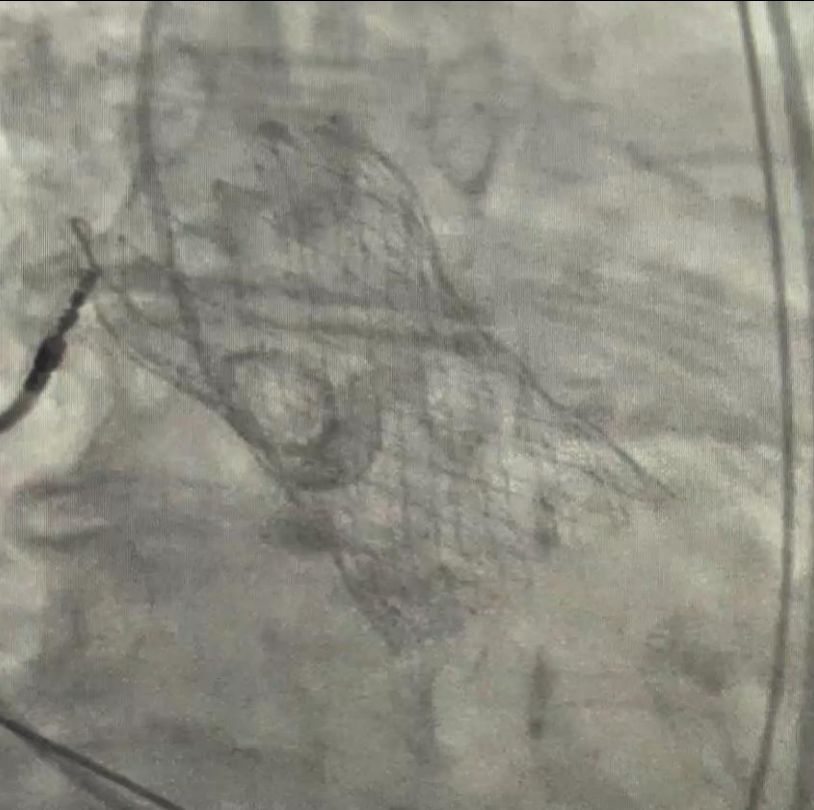


# TAVI / Structural Heart Advances

- Valve in valve
- Smaller delivery catheters
- Alternate access
- Other valve options



# TAVI



# Mitral Valve Therapies



# Future Expectations

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## OVERALL:

- Bioresorbable stents
- Broader valve therapies
- Renal denervation
- Continued evolution in non-invasive imaging techniques
- Continued push in preventative approaches

## AT BEACON HOSPITAL:

- 3<sup>rd</sup> State of the Art Cath Lab
- Full service team
- BHRI – clinical trials allowing us to provide cutting edge treatments and new developments



# Beacon Cardiology

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- 25 Cardiology Consultants (Dublin and Limerick)
- 3 State of the Art Cath Labs
- Rapid Access Cardiology Clinic
- Cardiac Testing & Diagnostics - ECG, Echo, Stress Tests, Holter
- Radiology – CT coronary angiogram, Cardiac MRI
- Paediatric Cardiology Service
- Cardiothoracic Surgery
- Intensive Care – 8 ICU 6 HDU
- Cardiology Clinic Limerick – Consultation & Testing
- Multidisciplinary – Fantastic Nursing Staff, Cardiac Physiologists, Radiographers, Cardiac Clinical Nurse Specialists and Cardiac Physiotherapists, Cardiologists

