



# Fantom: performance gains and clinical data for a next-generation BRS

Lukasz Koltowski

1st Department of Cardiology  
Medical University of Warsaw



# Potential conflicts of interest

**Speaker's name: Lukasz Koltowski**

**I have the following potential conflicts of interest to report:**

Receipt of grants / research supports: REVA Medical

Receipt of honoraria or consultation fees: Medtronic, REVA Medical

## Patient

- Younger patients
- Low atherosclerosis burden

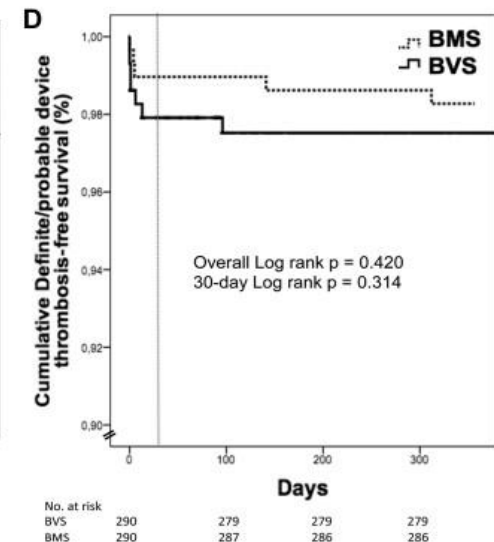
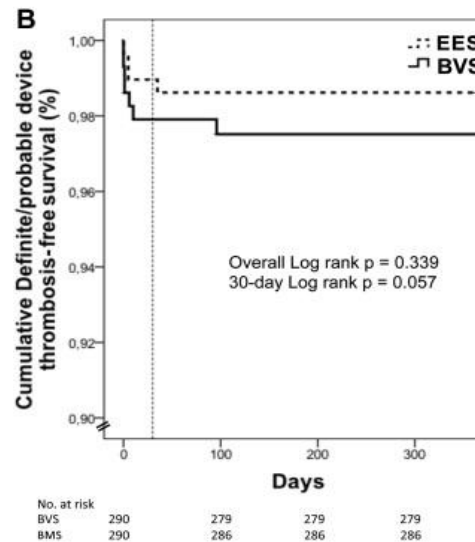
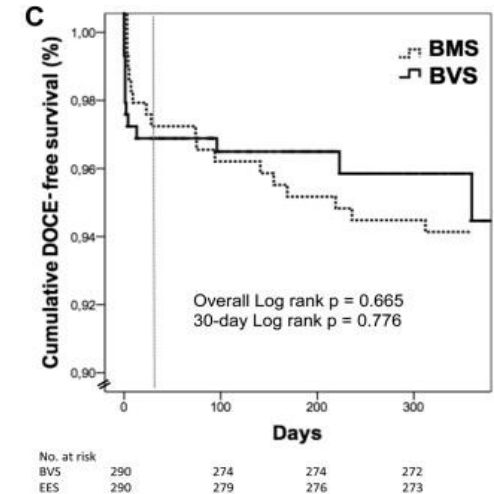
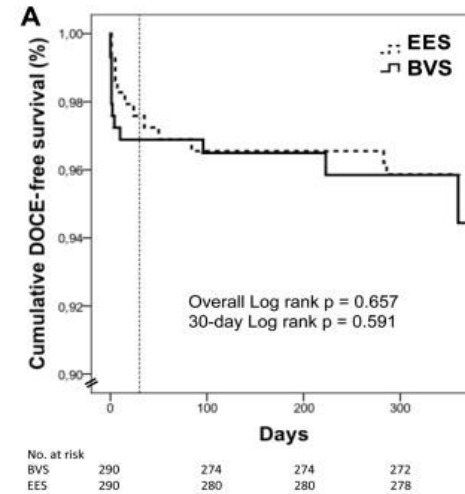
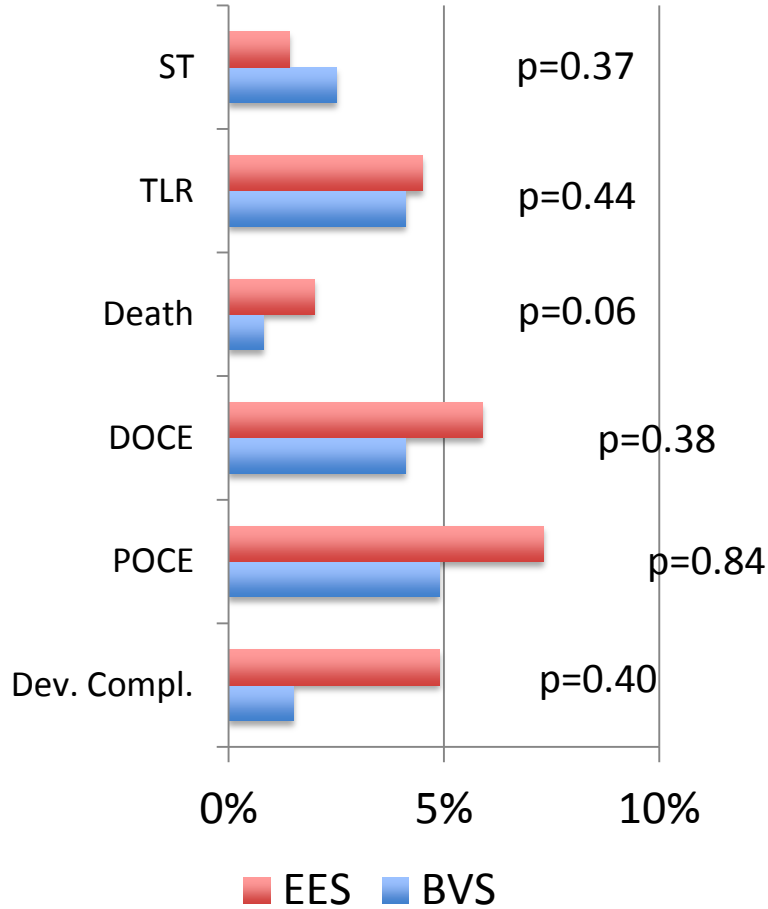
## Lesion

- Proximal segments
- Lipid-rich soft plaque
- Less calcifications
- More focal/shorter lesion

## Scaffold

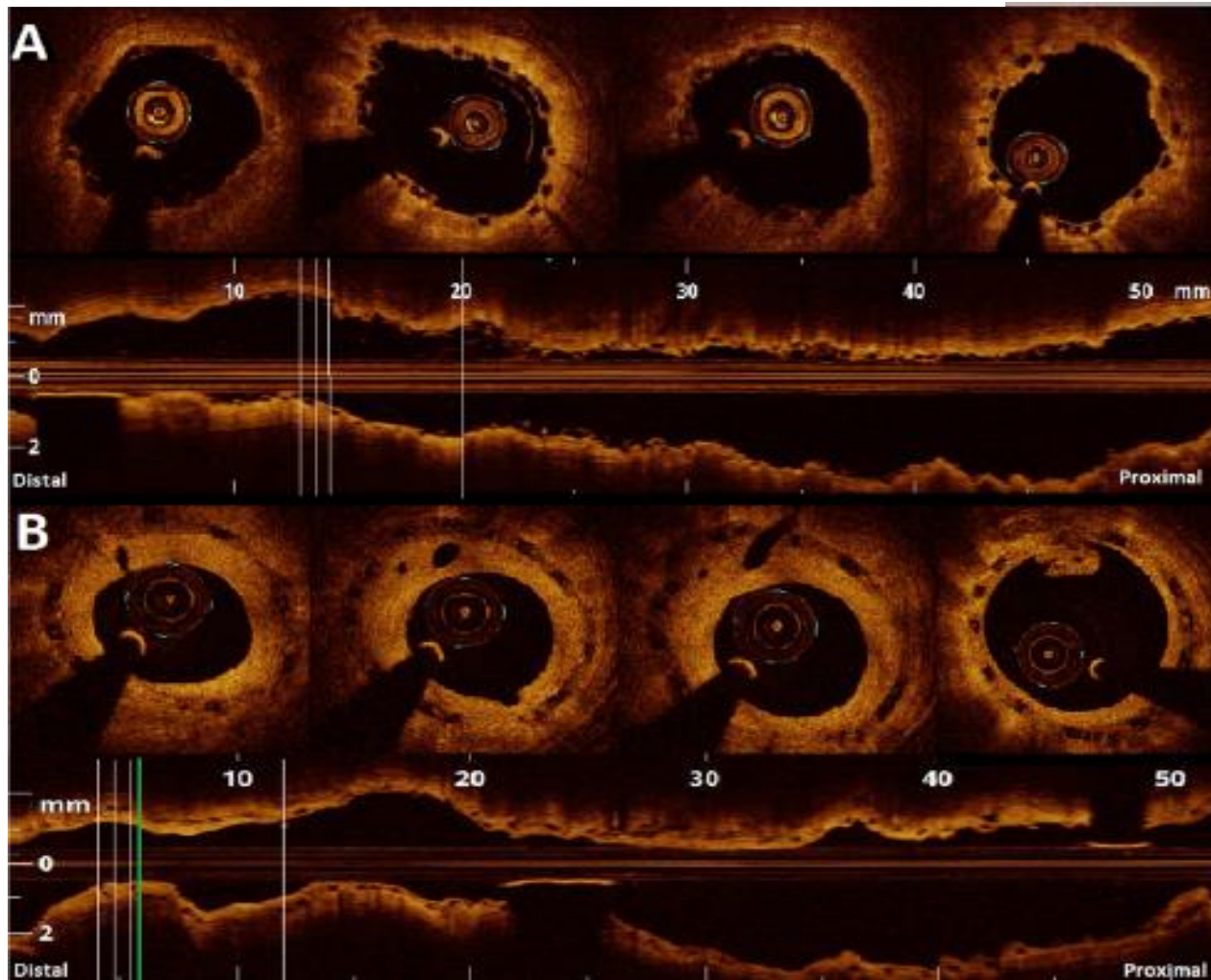
- Snow shoe effect

# BRS in STEMI BVS-RAI & BVS-EXAMINATION



# Still, BRS in STEMI needs improvement

In-scaffold neovascularization 24 months after bioresorbable vascular scaffold implantation in STEMI patient



## 1. Snow shoe effect



**Surface coverage**

32% (2.5 mm)

27% (3.0 mm)

27% (3.5 mm)

**Greater thickness**  
**Smaller surface coverage**



**Surface coverage**

33% (2.5 mm)

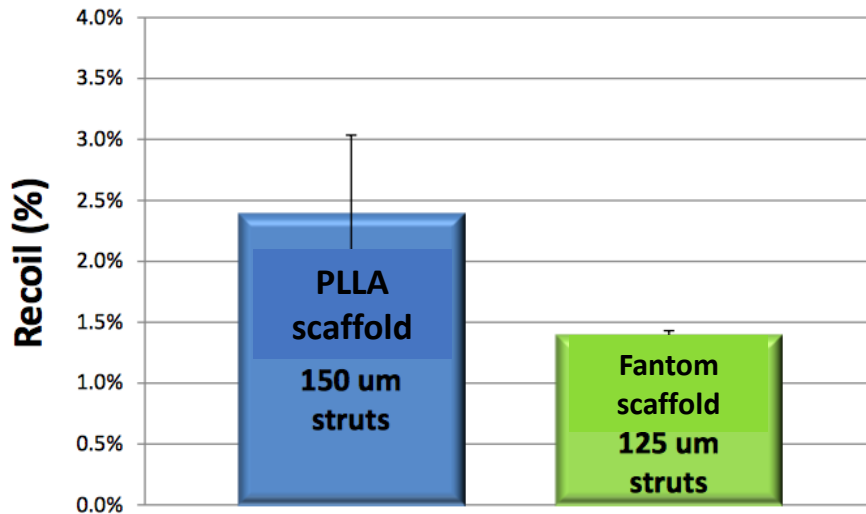
31% (3.0 mm)

27% (3.5 mm)

**Lower thickness**  
**Greater surface coverage**

## 2. Low recoil & high radial strength

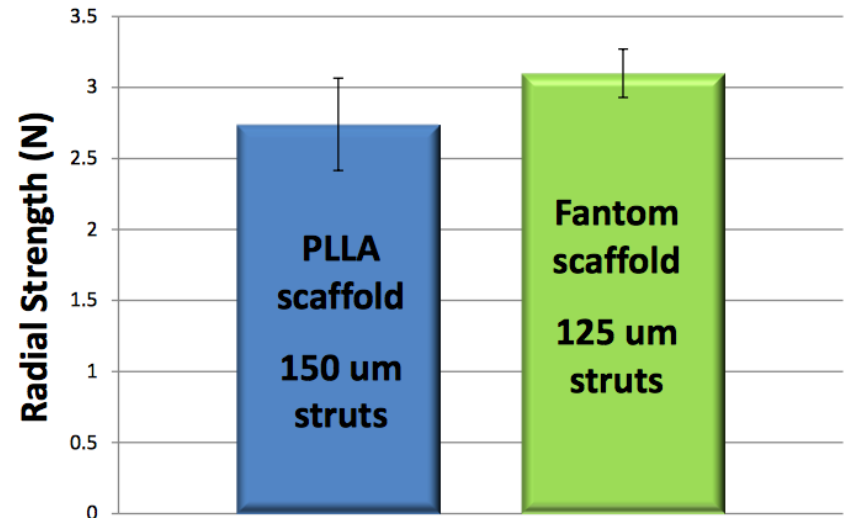
**Recoil**



**Low recoil**

Tested on final scaffold 4.0% 3.5% 3.0% 2.5% systems (crimped, 2.0% sterilized and deployed) at 37°C in H2O

**Radial Strength**



**Adequate radial strength**

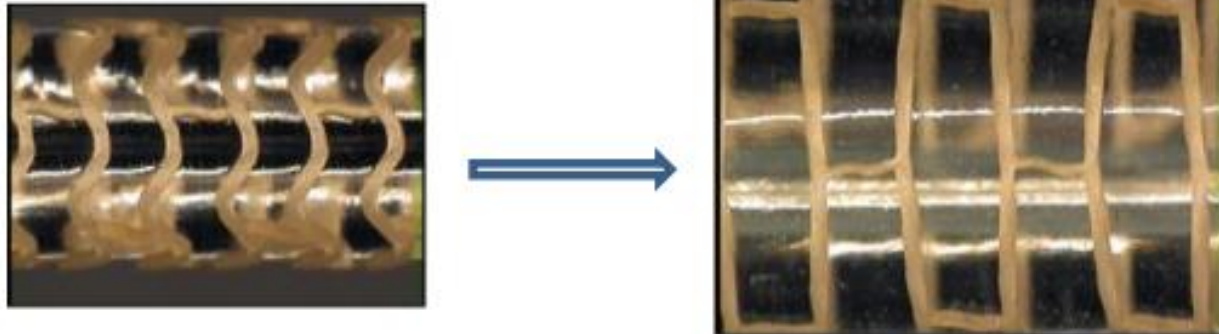
Force to permanently deform scaffold in IRIS compression in 37°C H2O

## Fantom in STEMI: Rationale

### 3. Substantial expansion range

- 0.75 - 1.0 mm depending upon device size
- Able to adjust for vessel taper & dilatation

### 3.0 mm Nominal Device

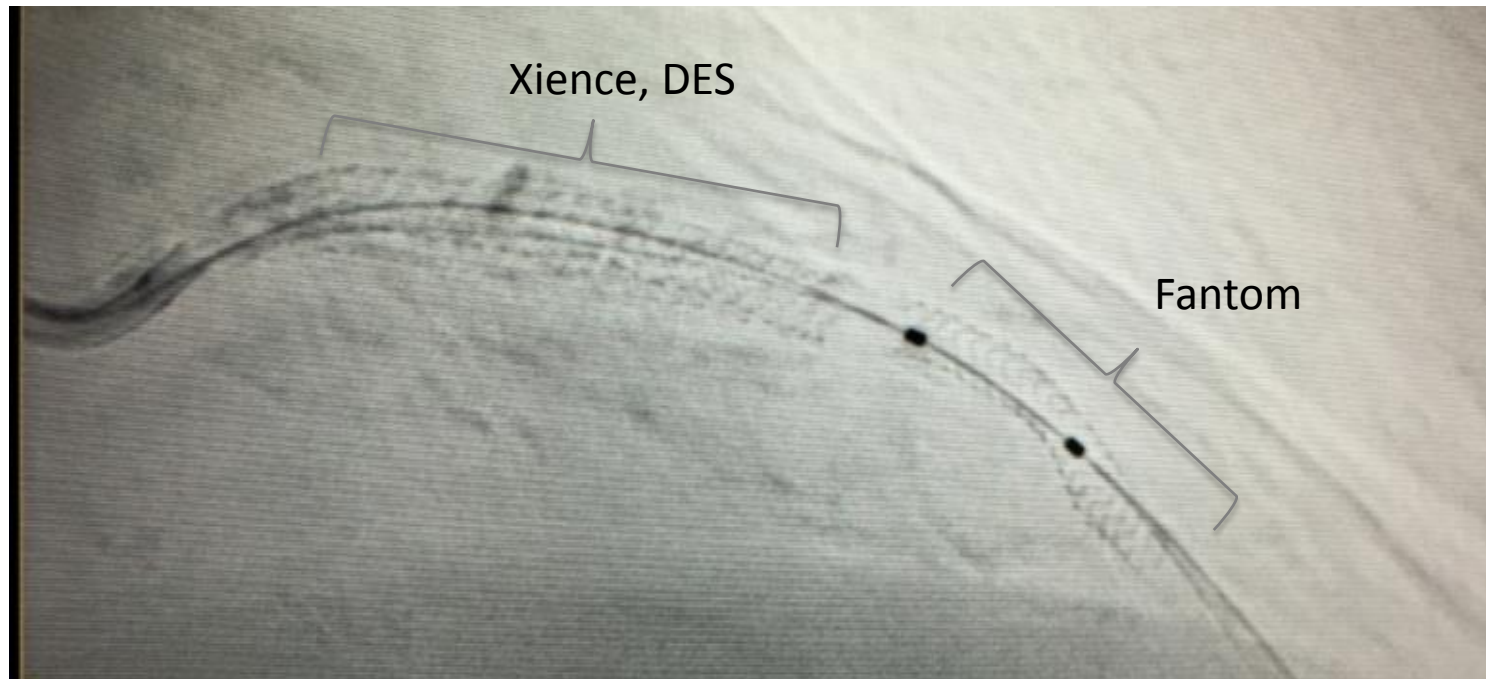


Polymer enables expansion to 3.75 mm without fracture

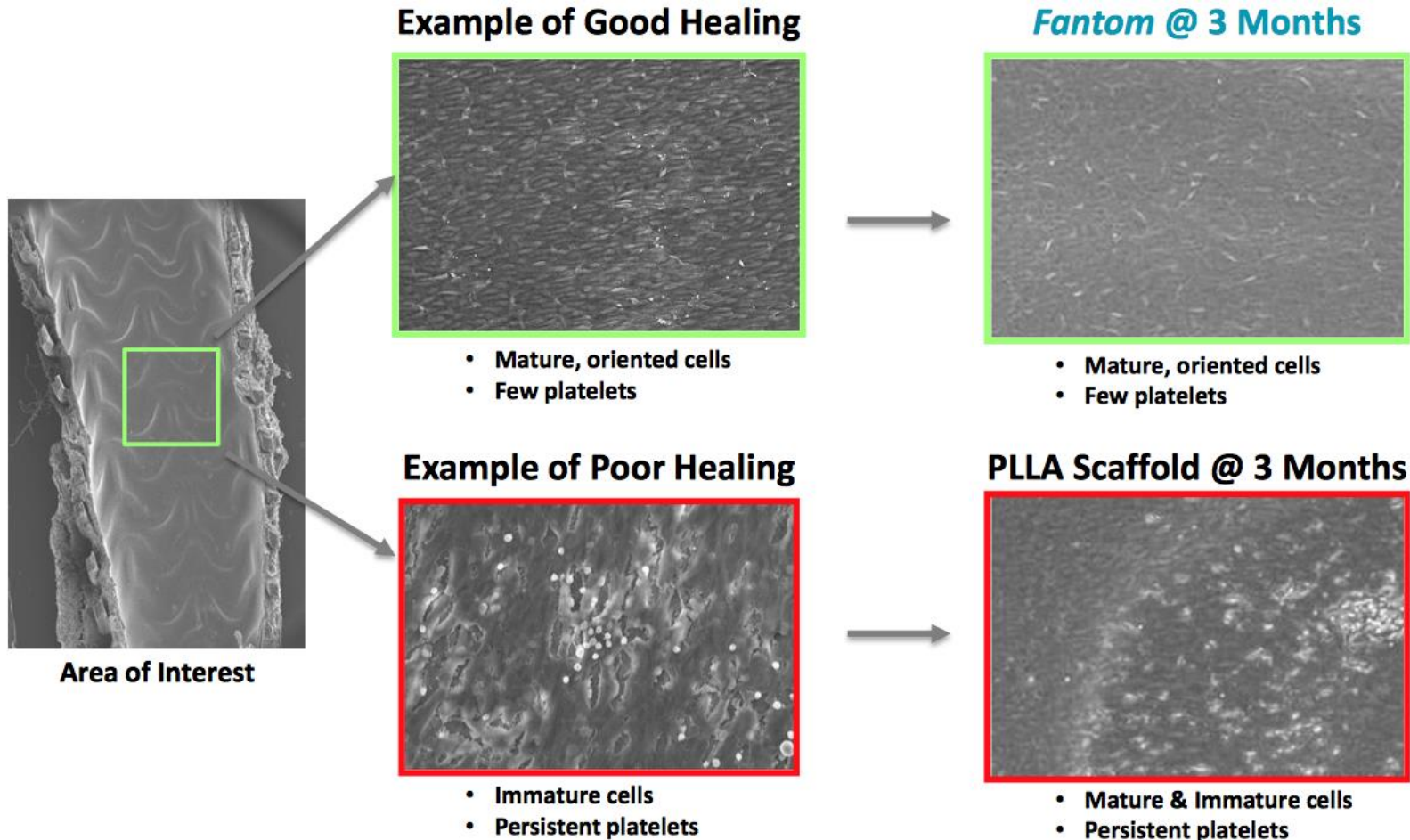


## 4. Radiographic Visibility

- Precise scaffold placement & lesion coverage
- Proper structural assessment after implantation
- Less dependent on IVUS/OCT imaging compared to other BVS



## 5. Improved healing profile



**Fewer residual platelets @3 months**

# First Fantom implantation in STEMI

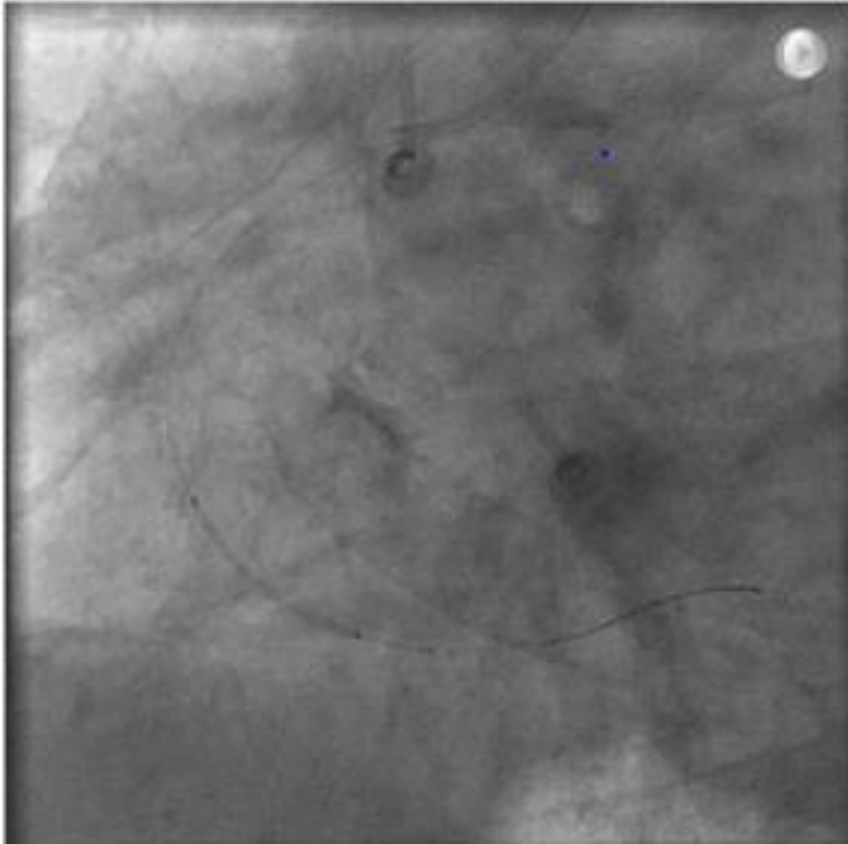
## Case:

- 2 hour CP
- ECG: STEMI inferior
  
- ASA
- Ticagrelor
- UFH
  
- Occluded RCA
- Large thrombus



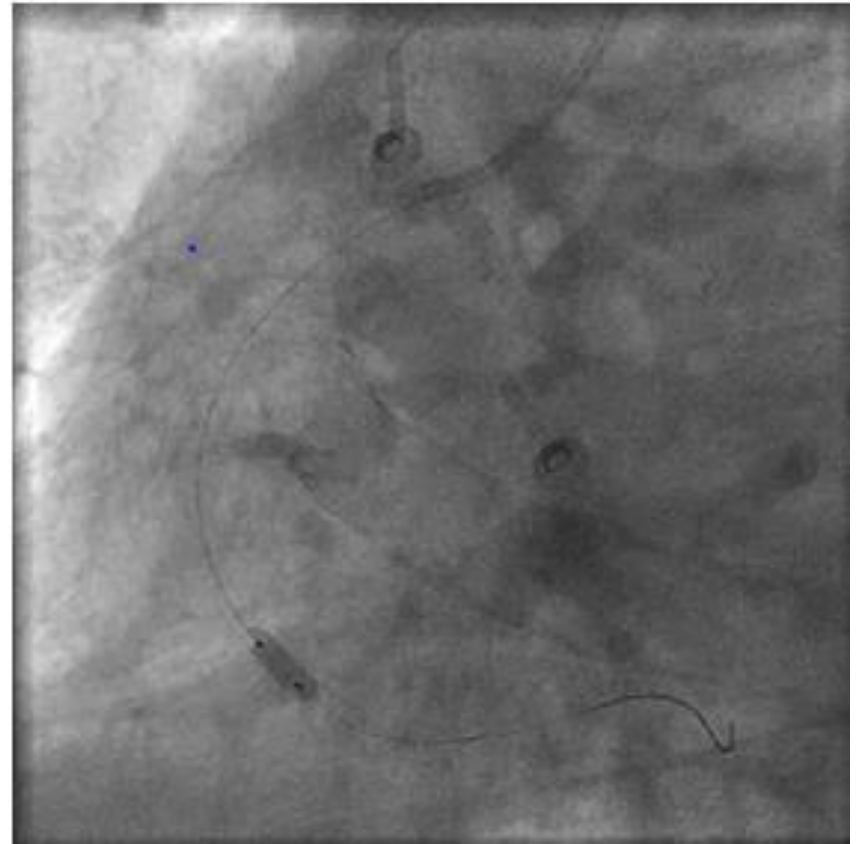
**[VIDEO]**

# First Fantom implantation in STEMI



Thrombectomy + pre-dilatation  
+ Fantom (3.5 x 24 mm)

**[VIDEO]**

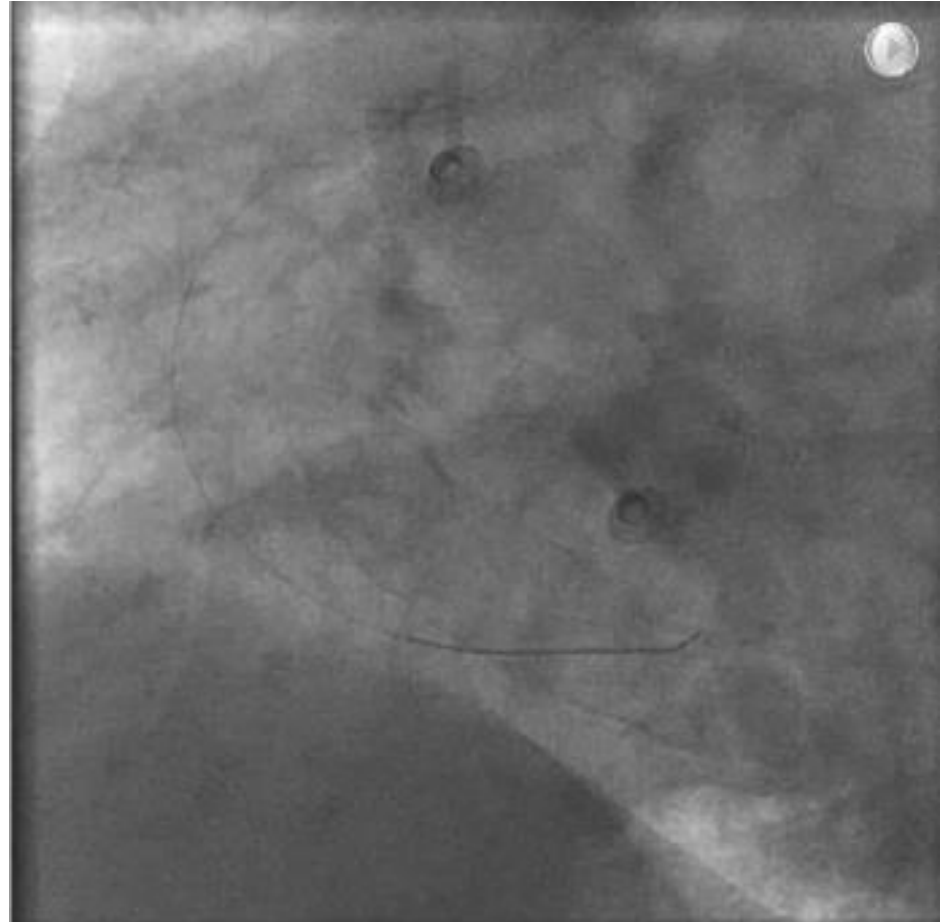


Post-dilatation NC 3,5 x 8 (20 atm.)

**[VIDEO]**

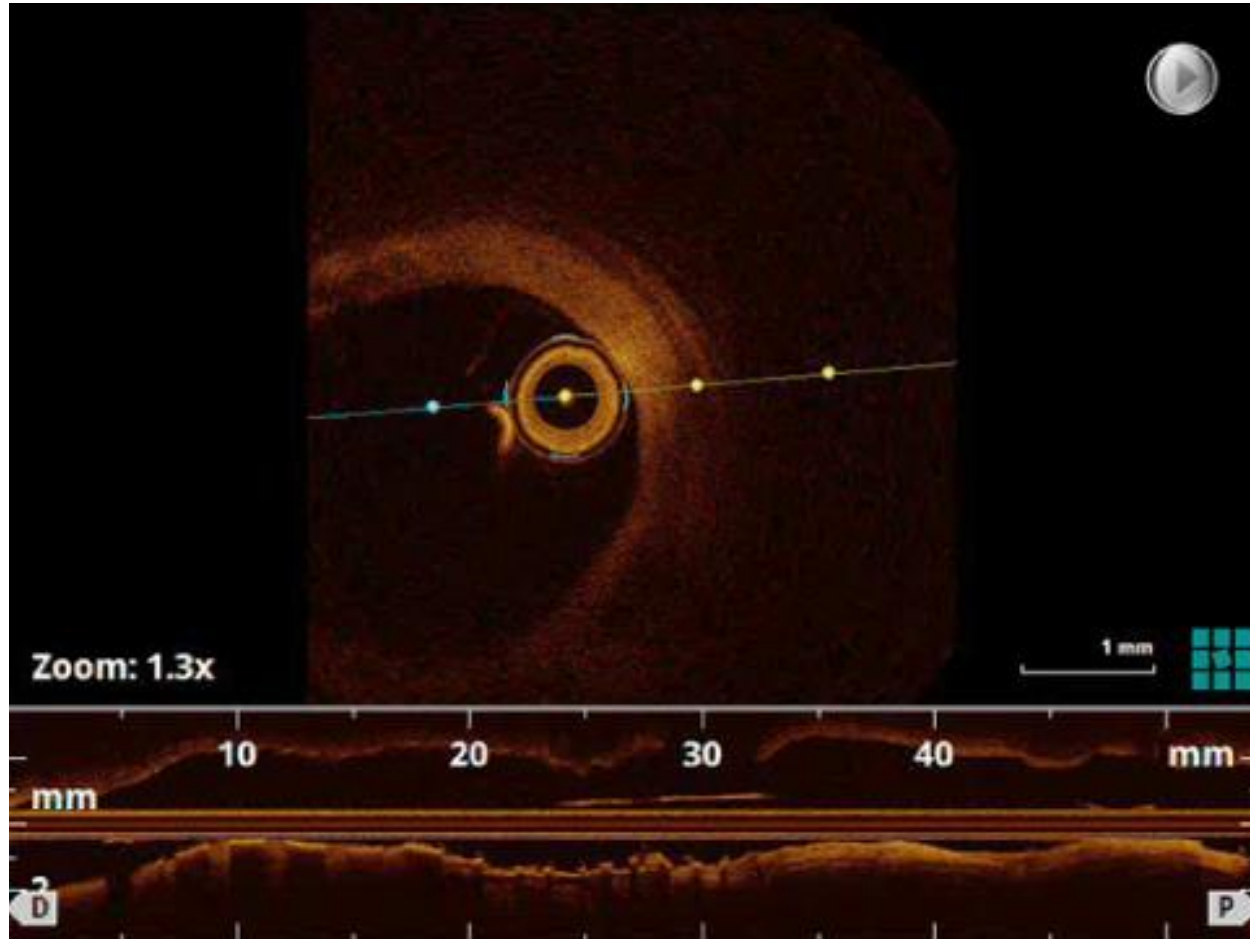
# First Fantom implantation in STEMI

- ST resolution
- No chest pain
- Procedural success
- OCT evaluation



**[VIDEO]**

# First Fantom implantation in STEMI



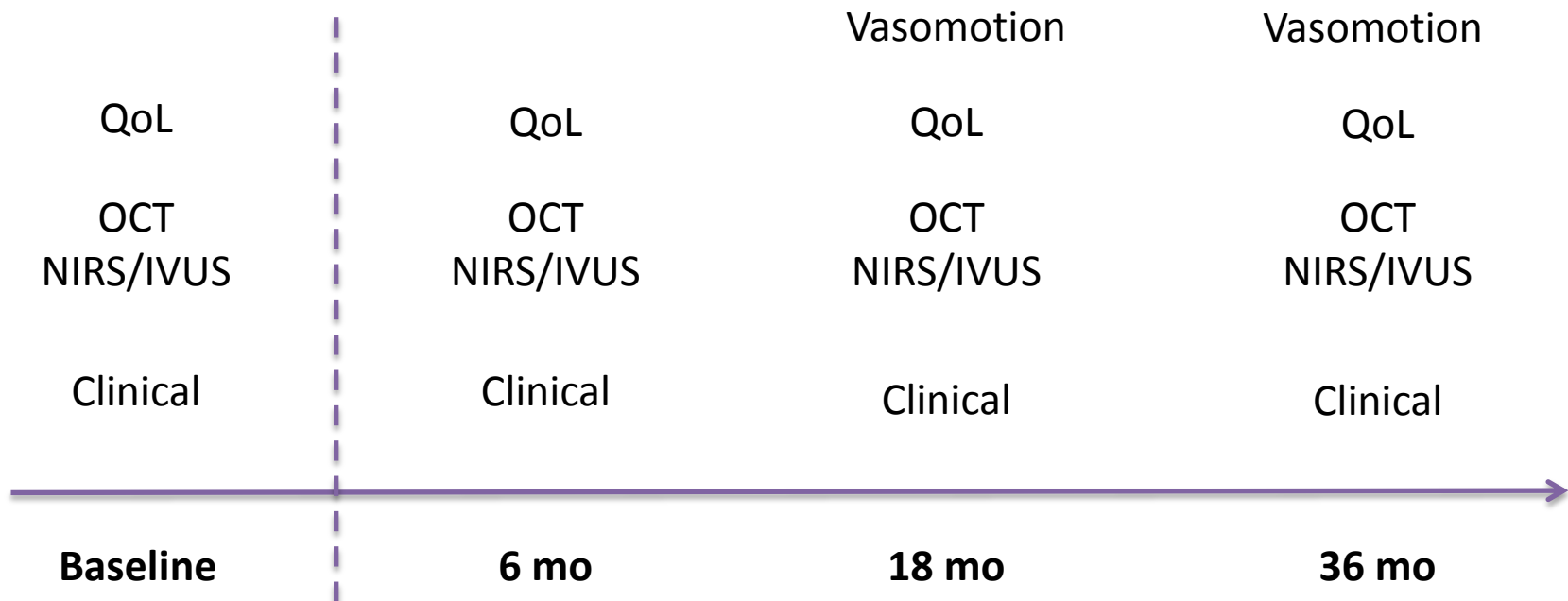
**[VIDEO]**

# FANTOM STEMI pilot study

## Design:

- Single-arm, prospective
- STEMI (de novo, 2.5-3.5 RVD, <20 mm, no bif., no calc.)
- Proper implantation technique (PSP, 1:1 NC)
- Intravascular imaging follow-up

## Study flow:



"In theory, theory and practice are the same. In practice, they are not."  
[Albert Einstein]

**Thank you.**