Role of MDCT in PCI Planning
"Focus on CTO Treatment"

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Acknowledgements

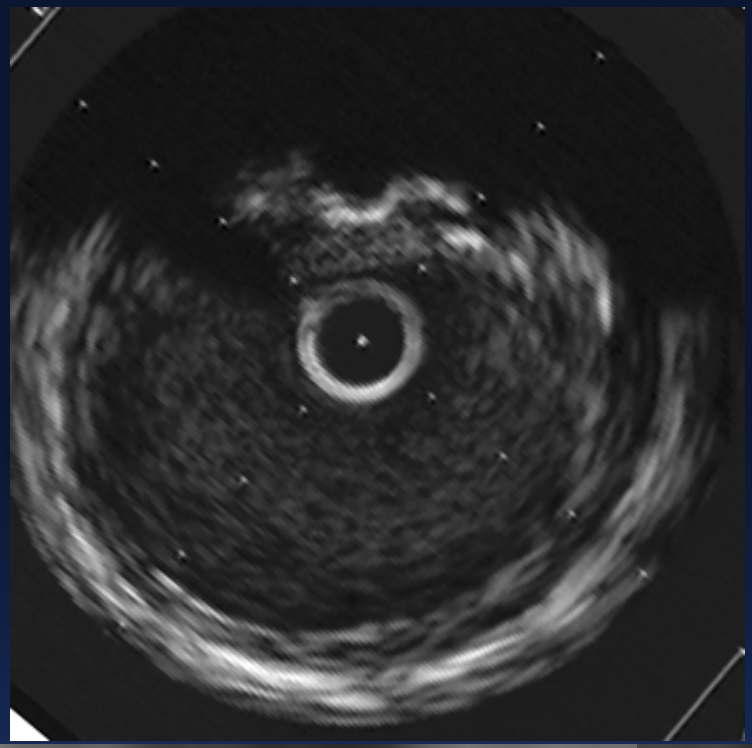
- ***Michael Poon, MD***
Professor of Radiology and Medicine (Cardiology) SUNY-Stony Brook School of Medicine, NY

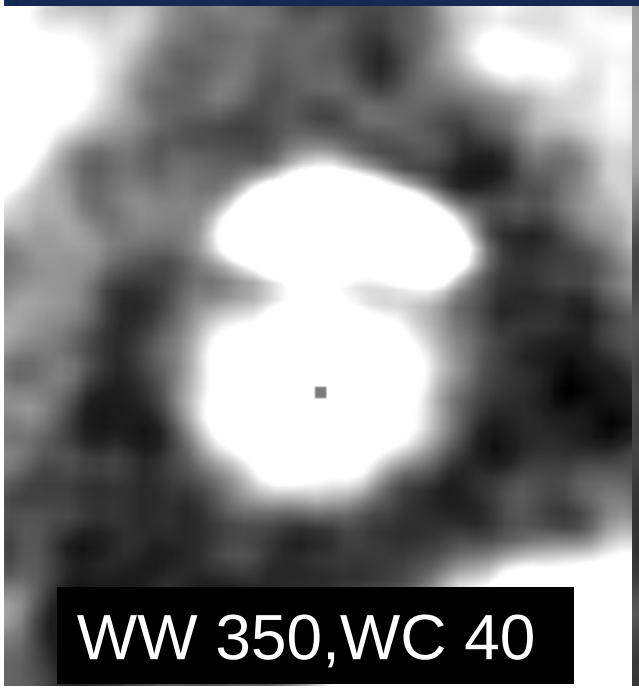
- ***Masahiko Ochiai, MD***

Professor of Showa University, Japan

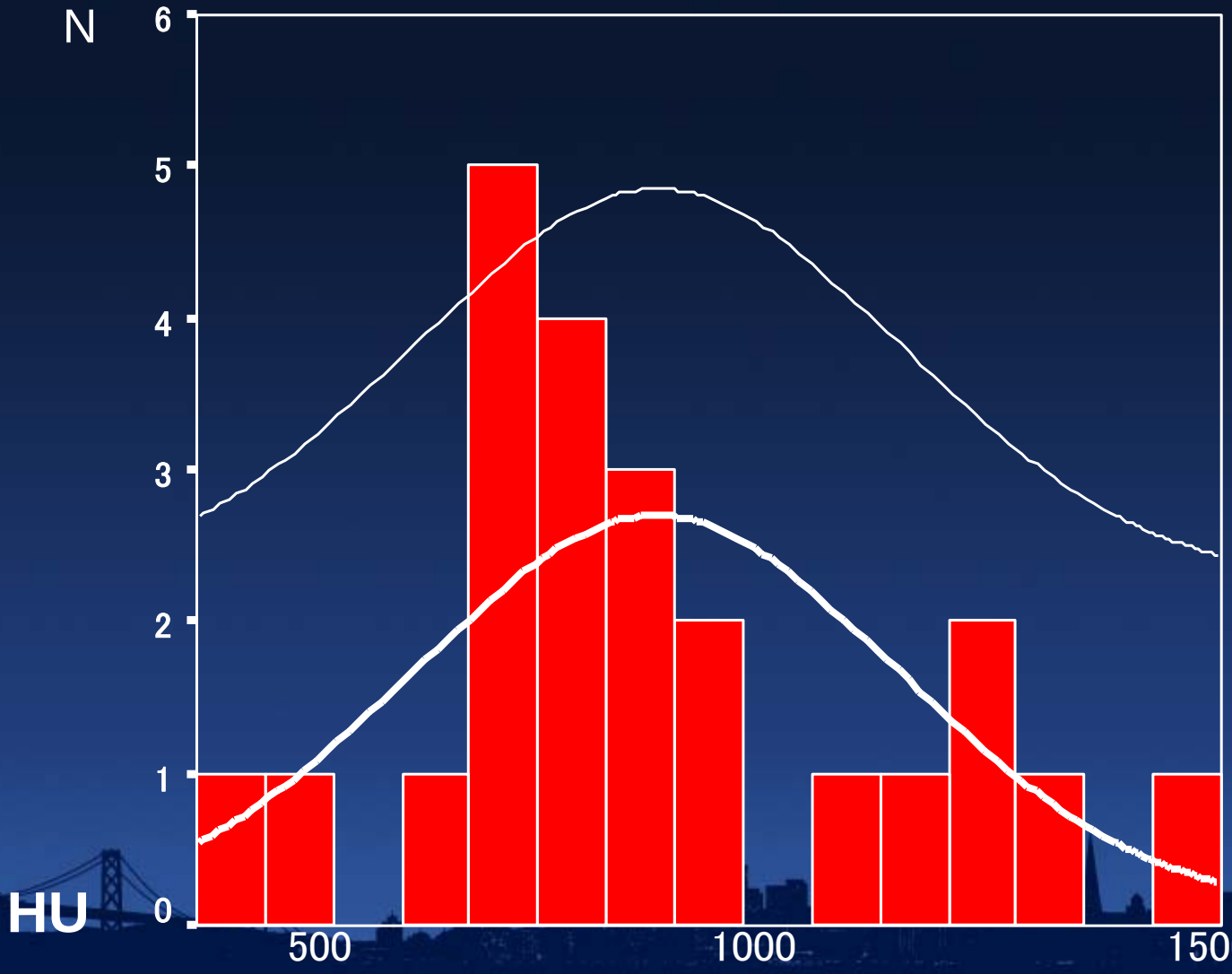
Calcification

Appropriate WW/WC





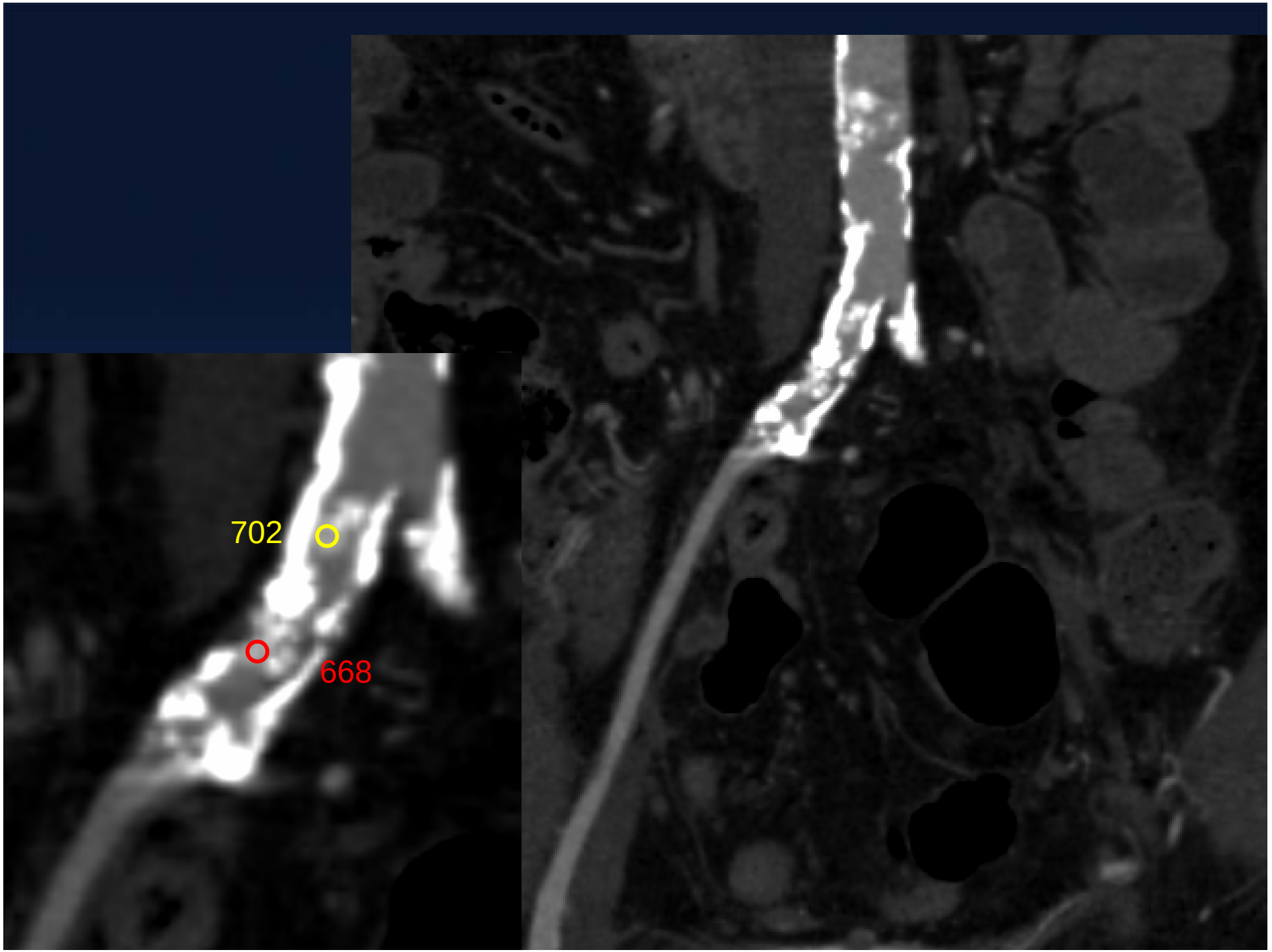
Histogram of HU of calcium

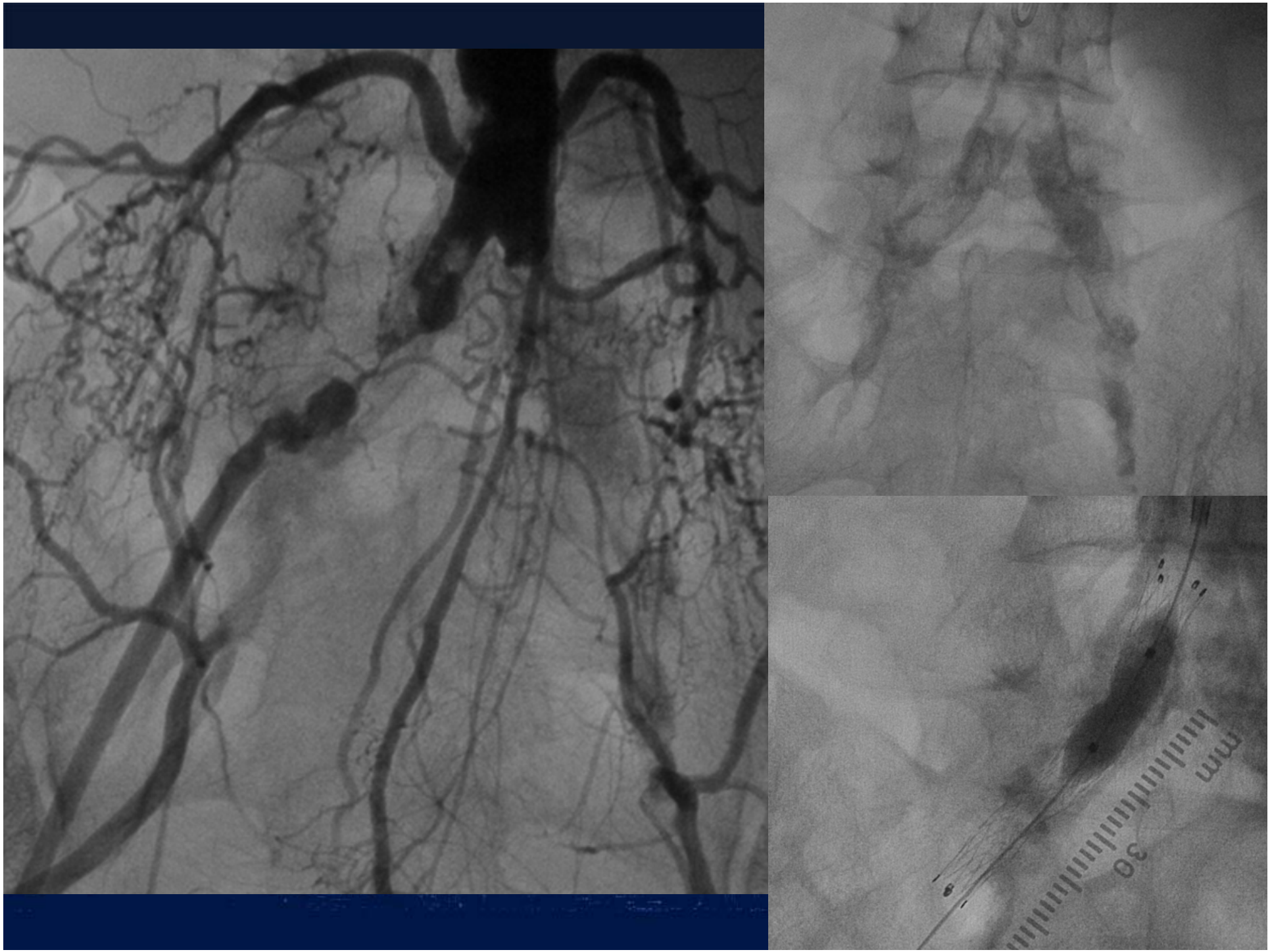


N = 23

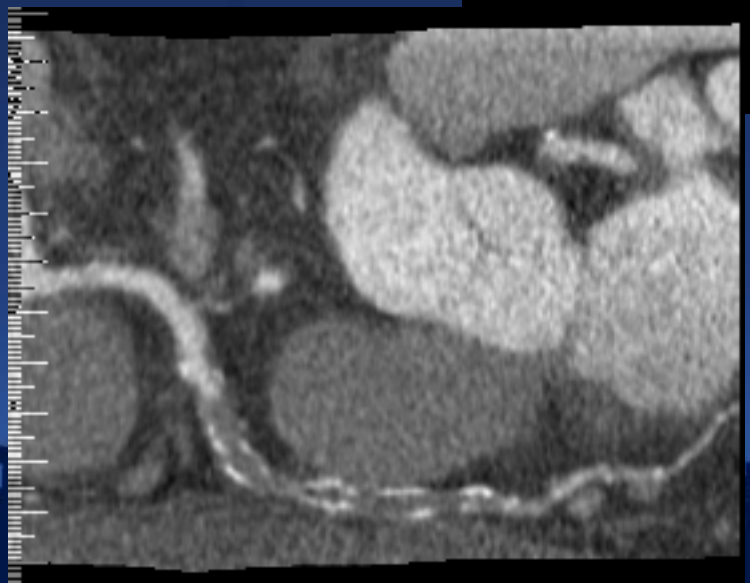
Mean = 789.6

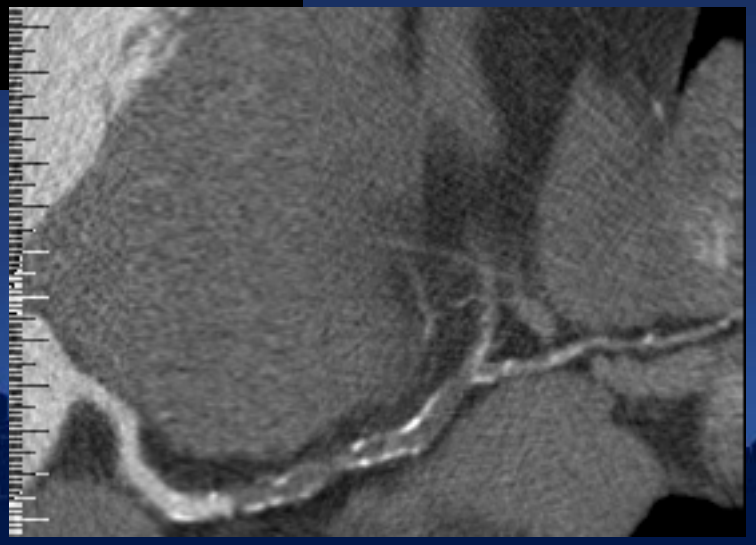
Std. Dev = 283.2

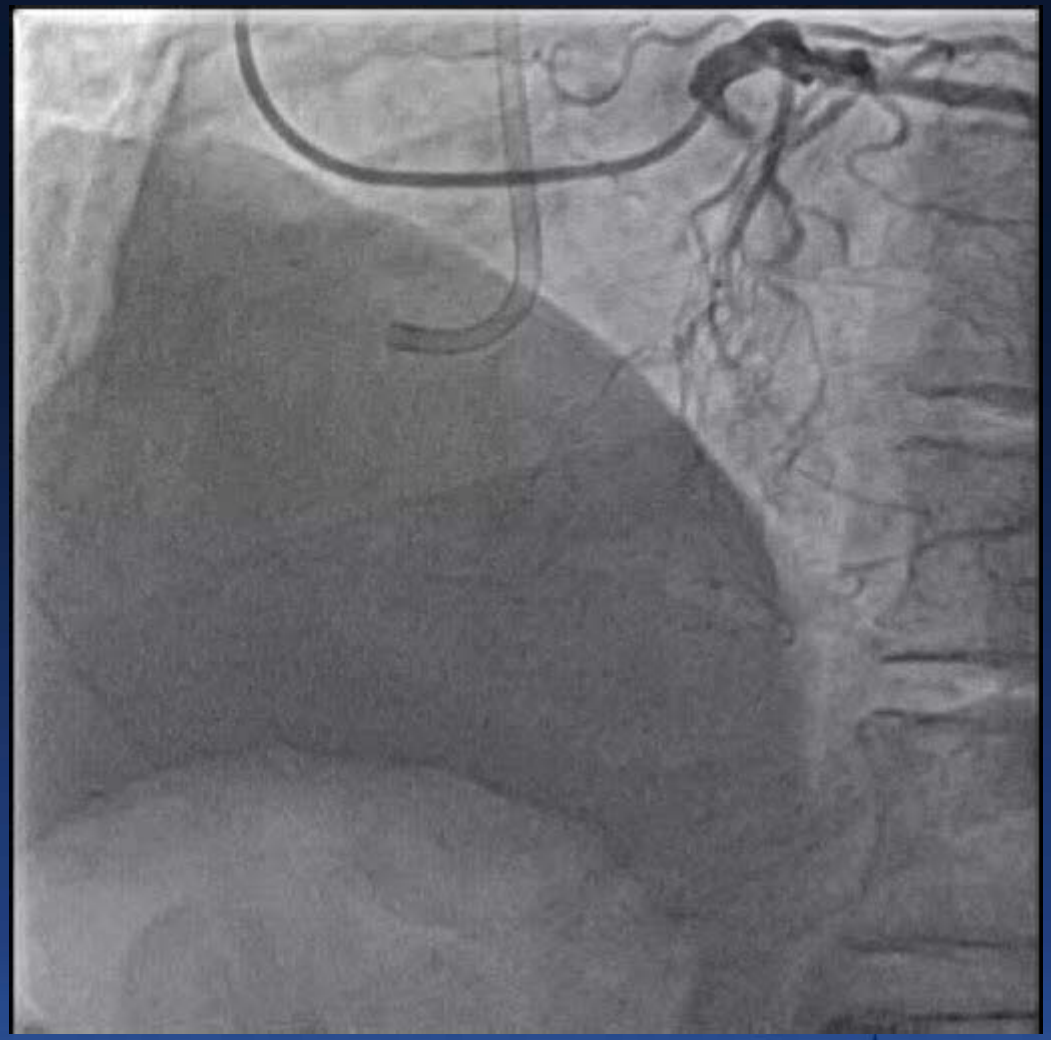

702
668



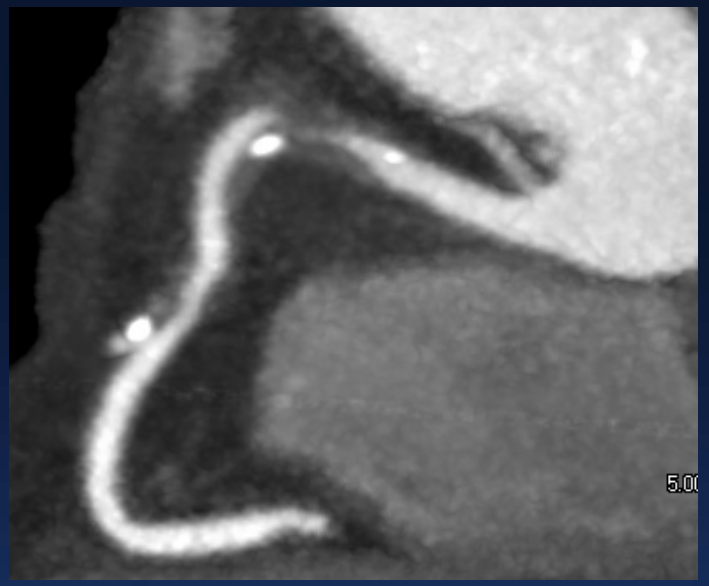
Chronic total occlusion

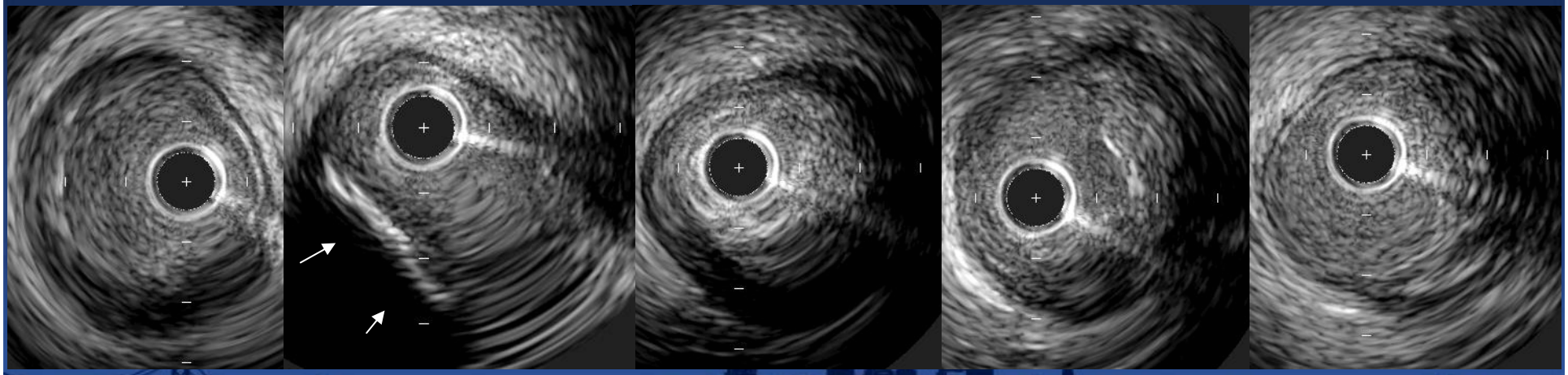


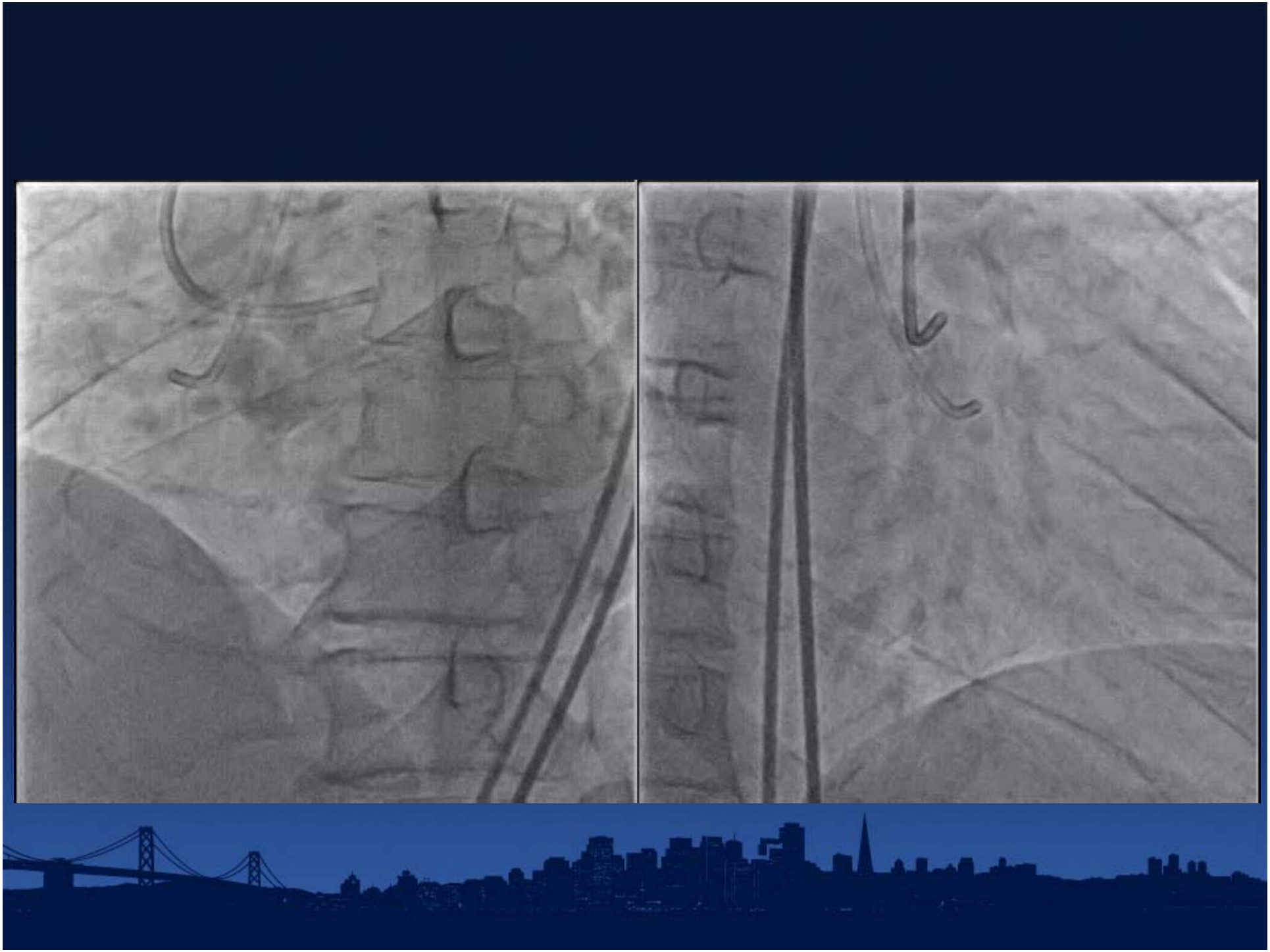




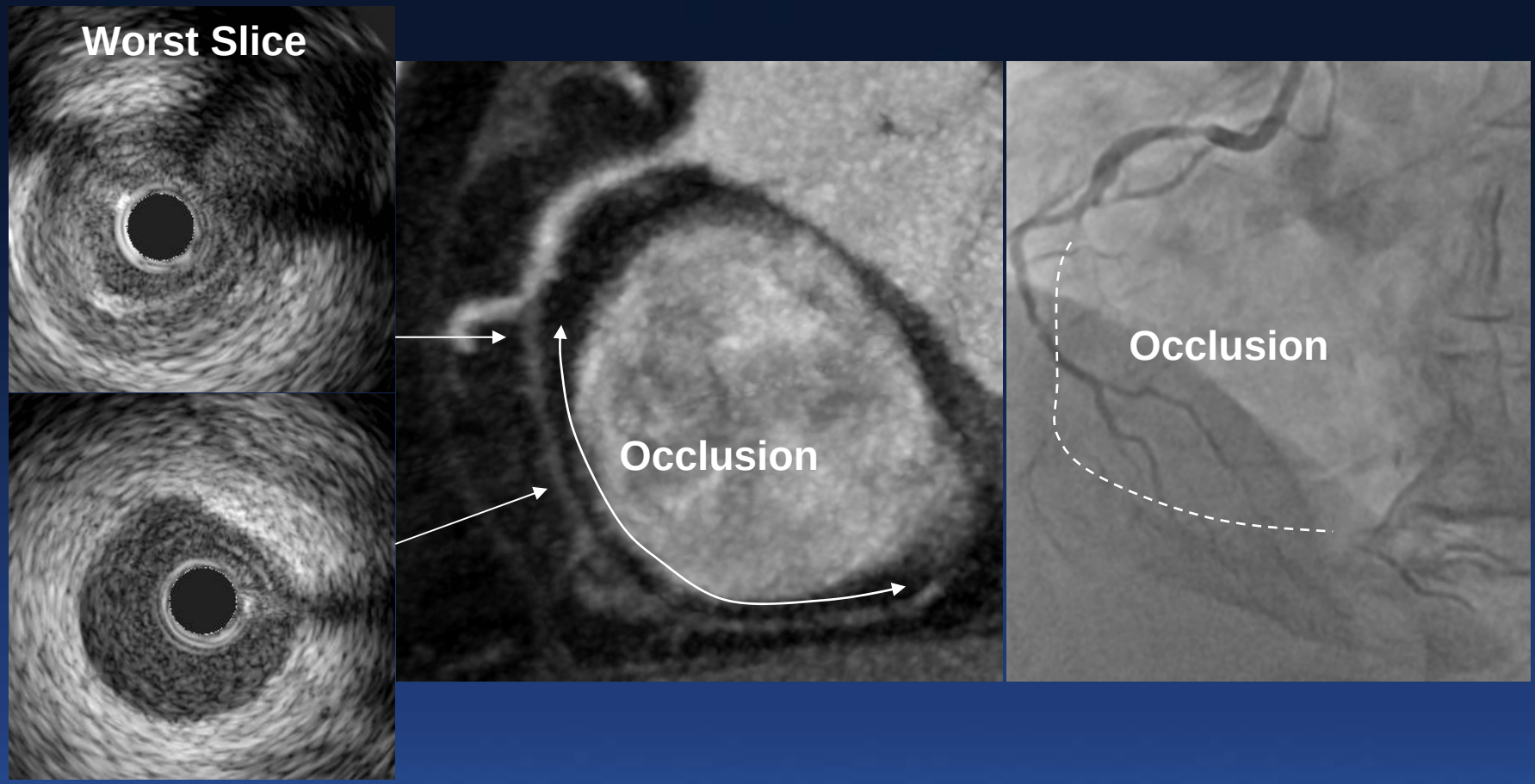
Very Short Occlusion

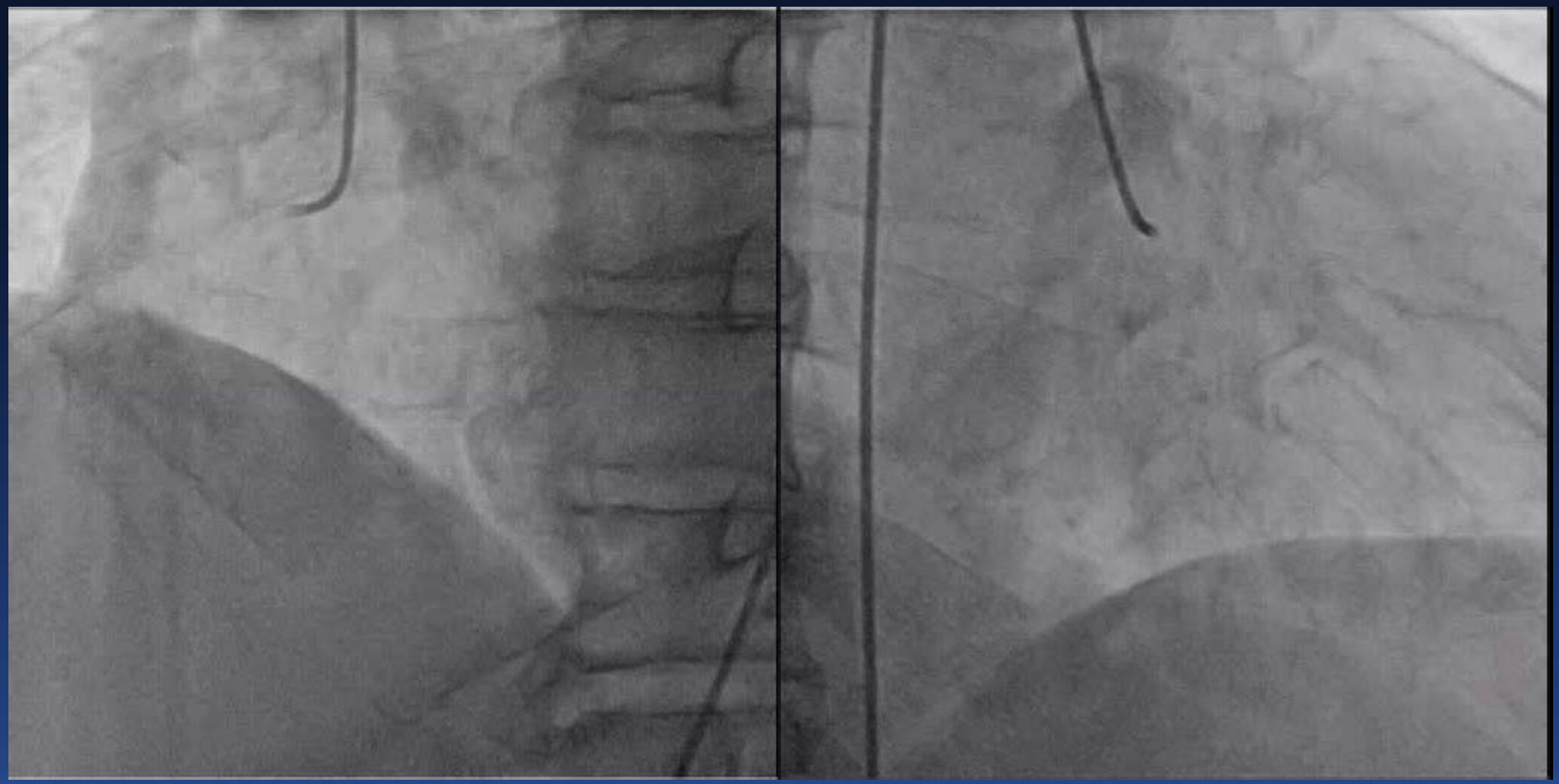




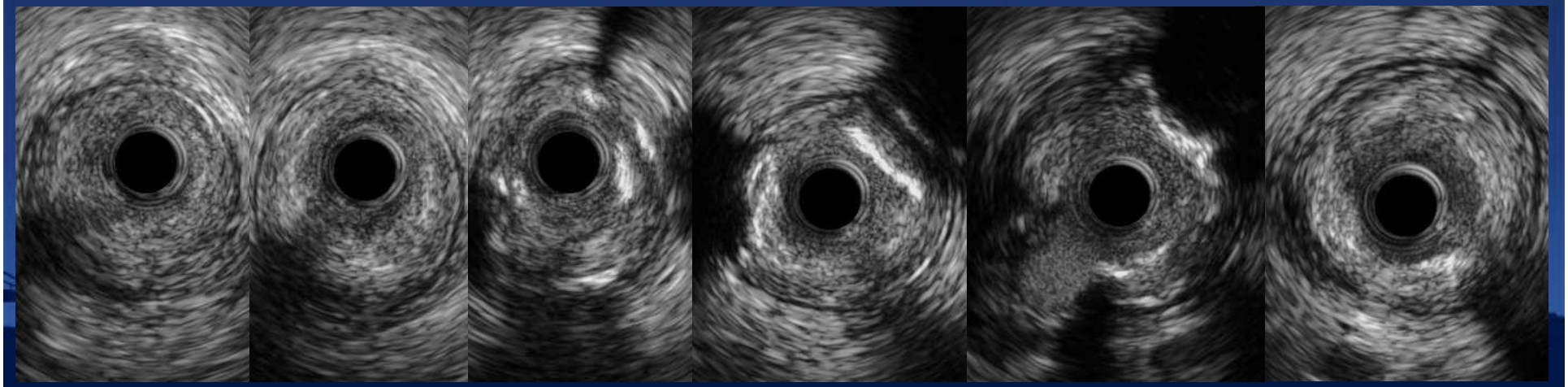


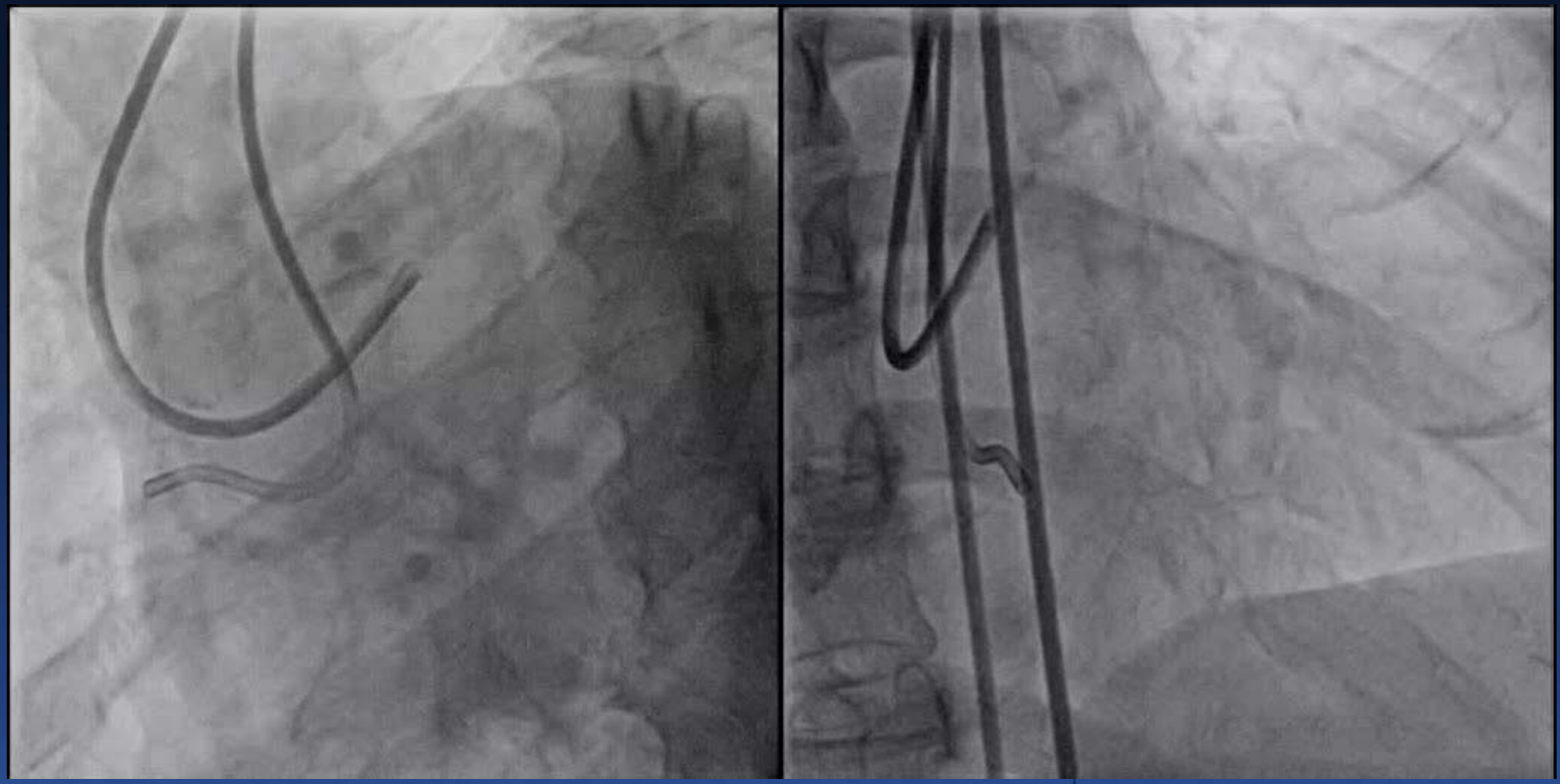
Collapsed Occlusion



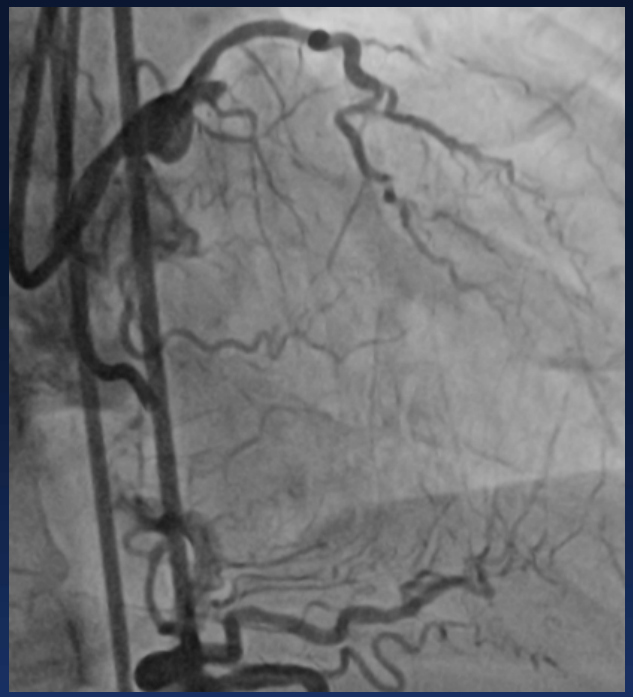


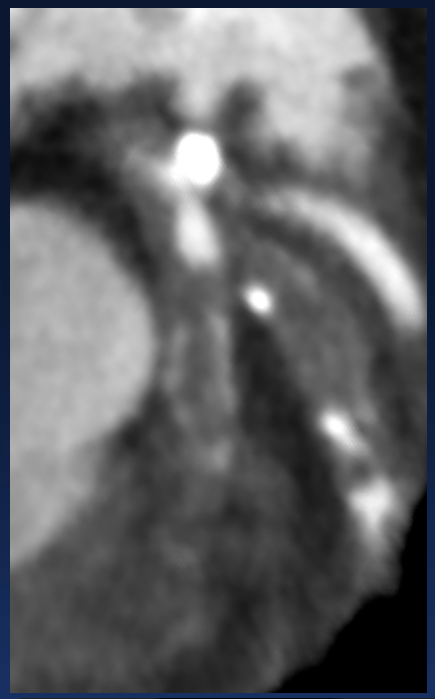
Thrombotic Occlusion?

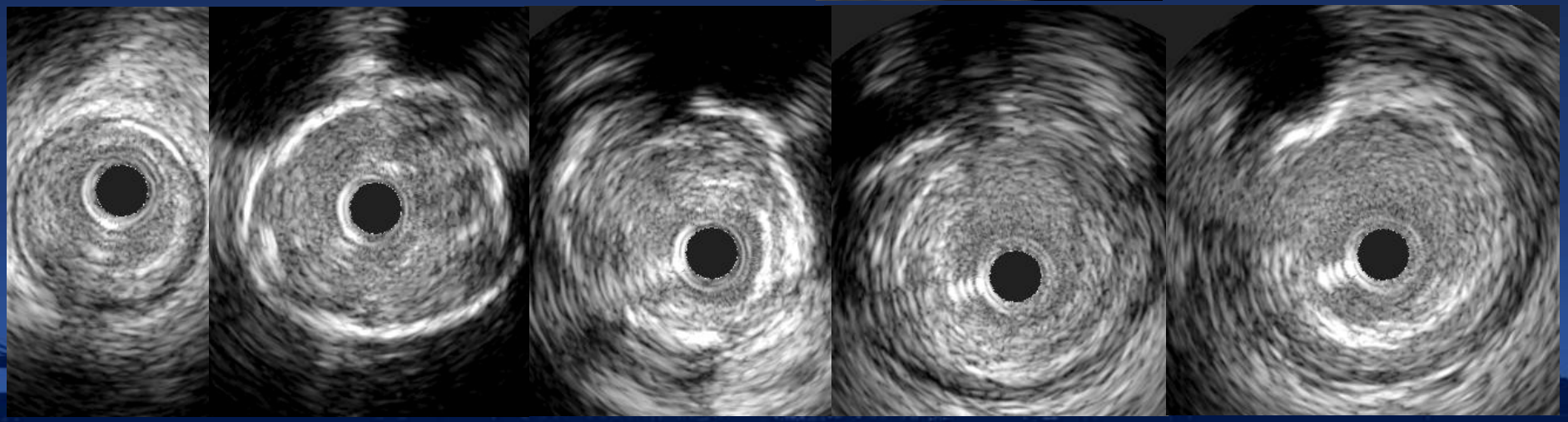


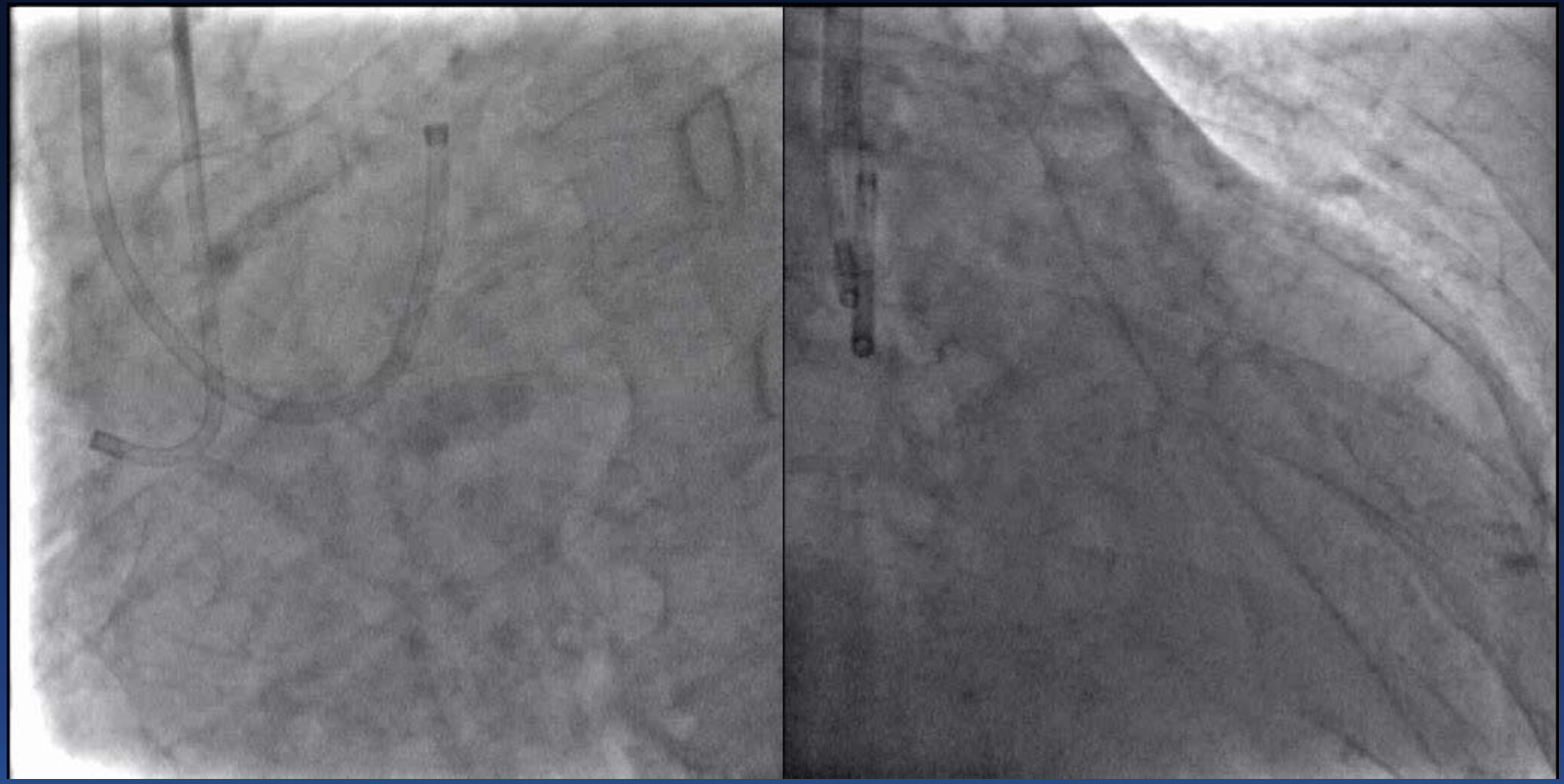


Stent like deep calcification

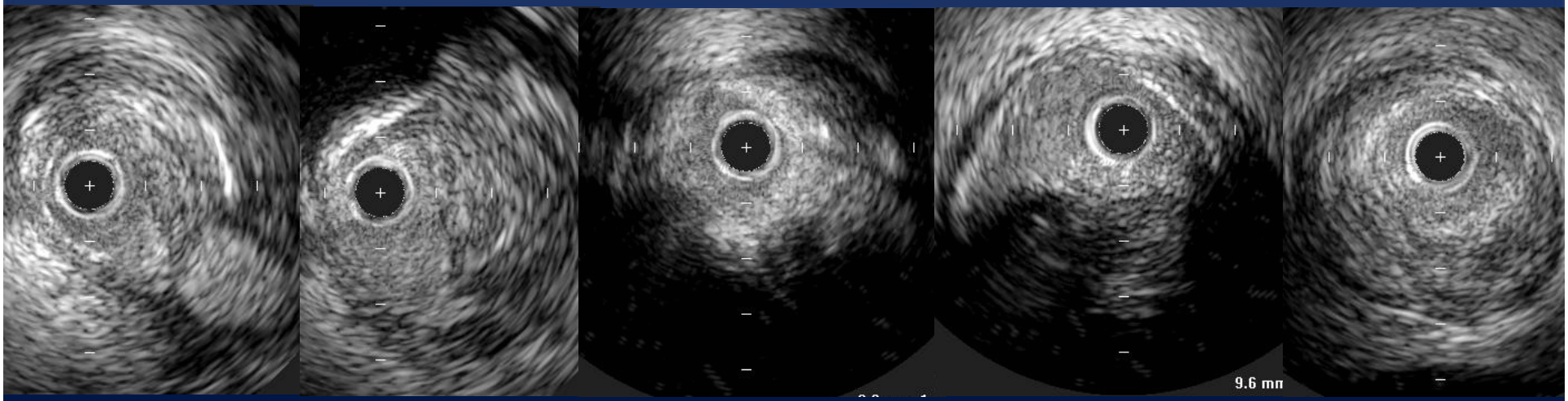


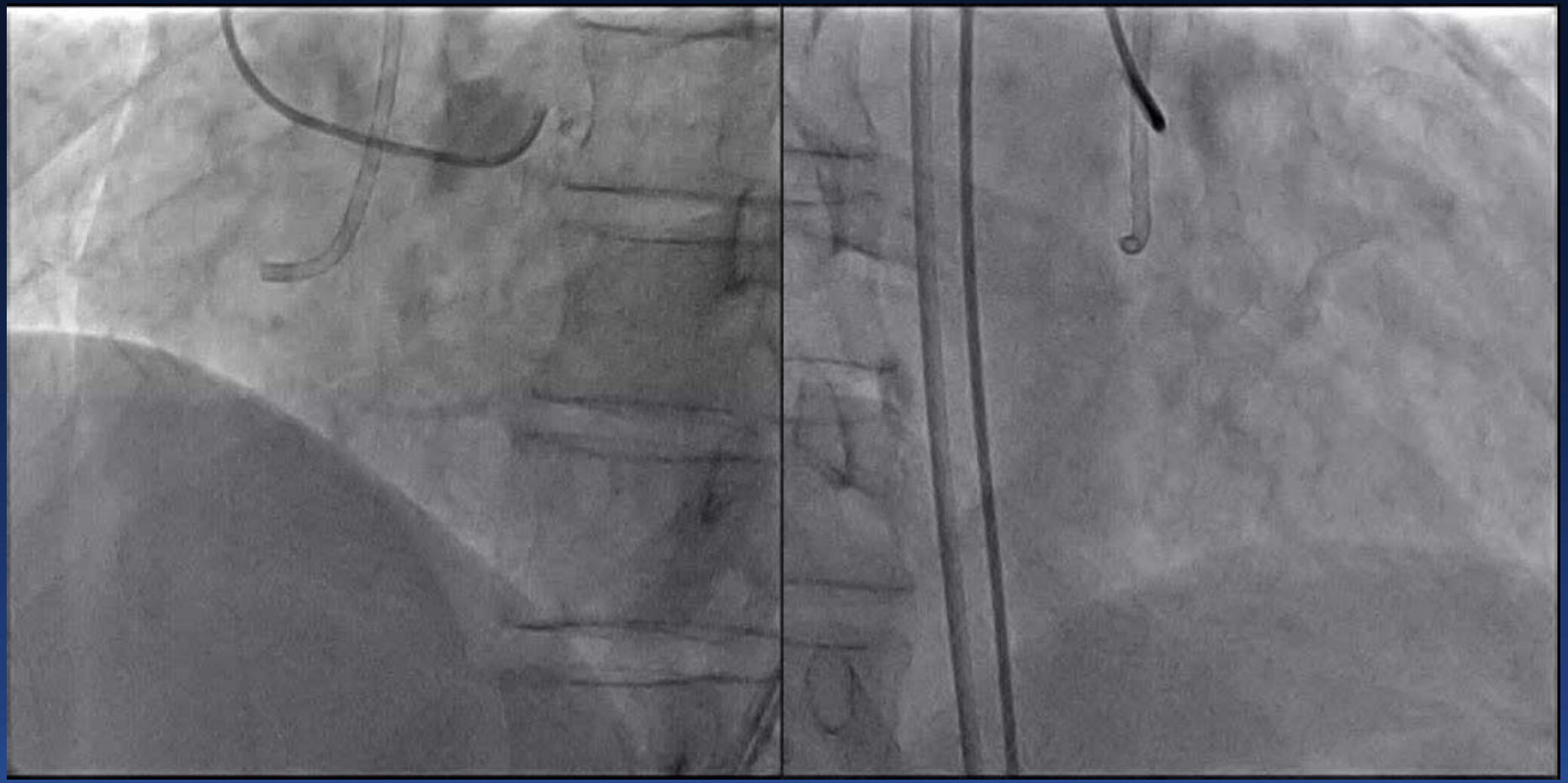




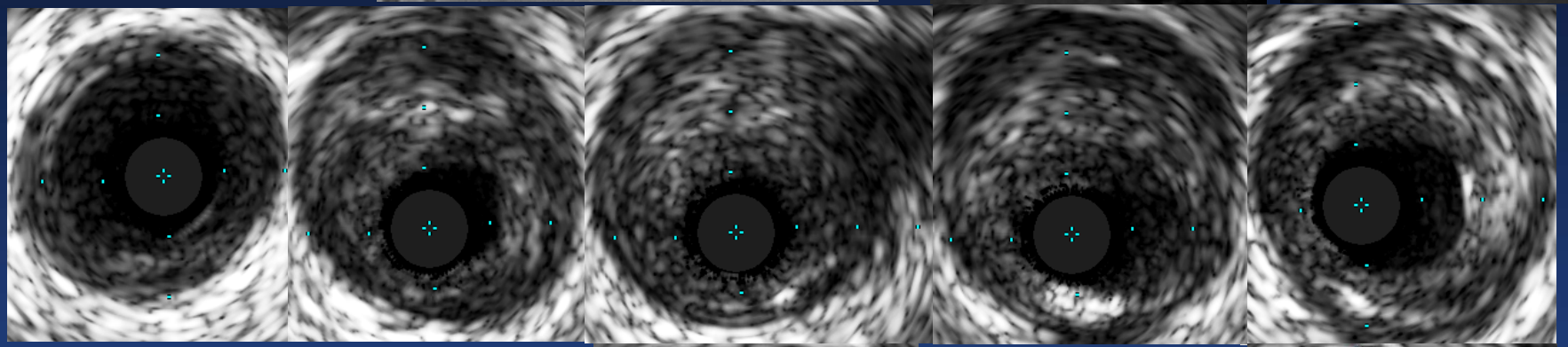


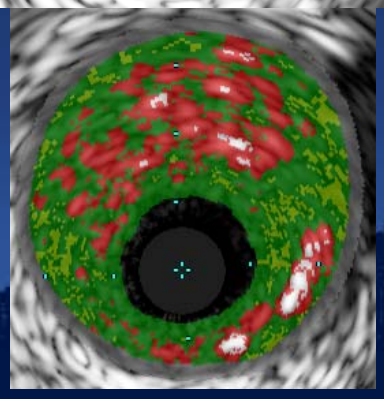
Thrombus with micro-channel?

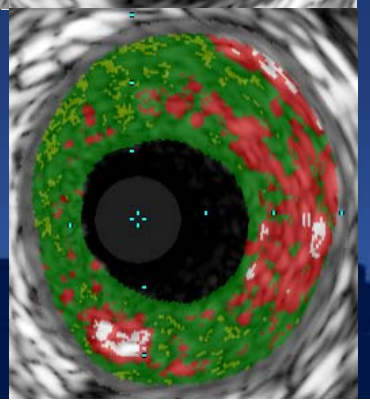




Necrotic Core?

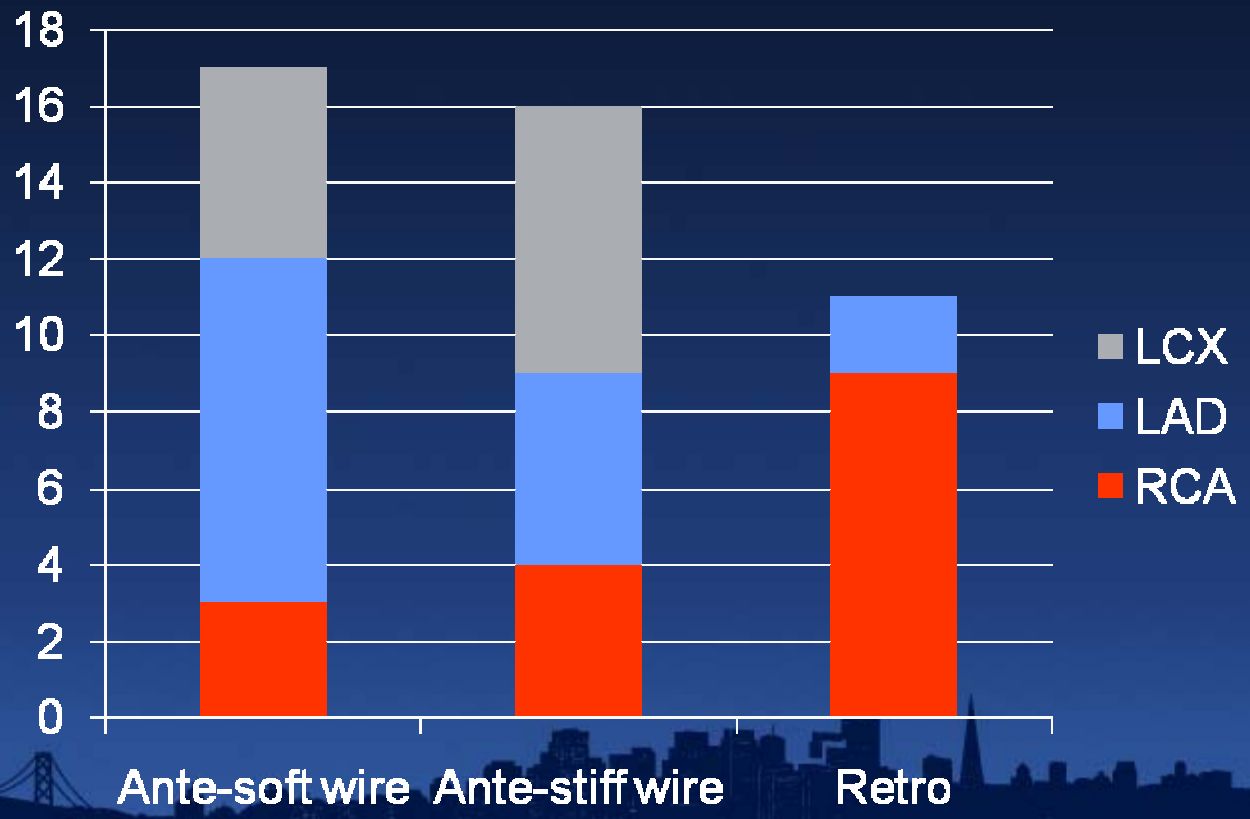






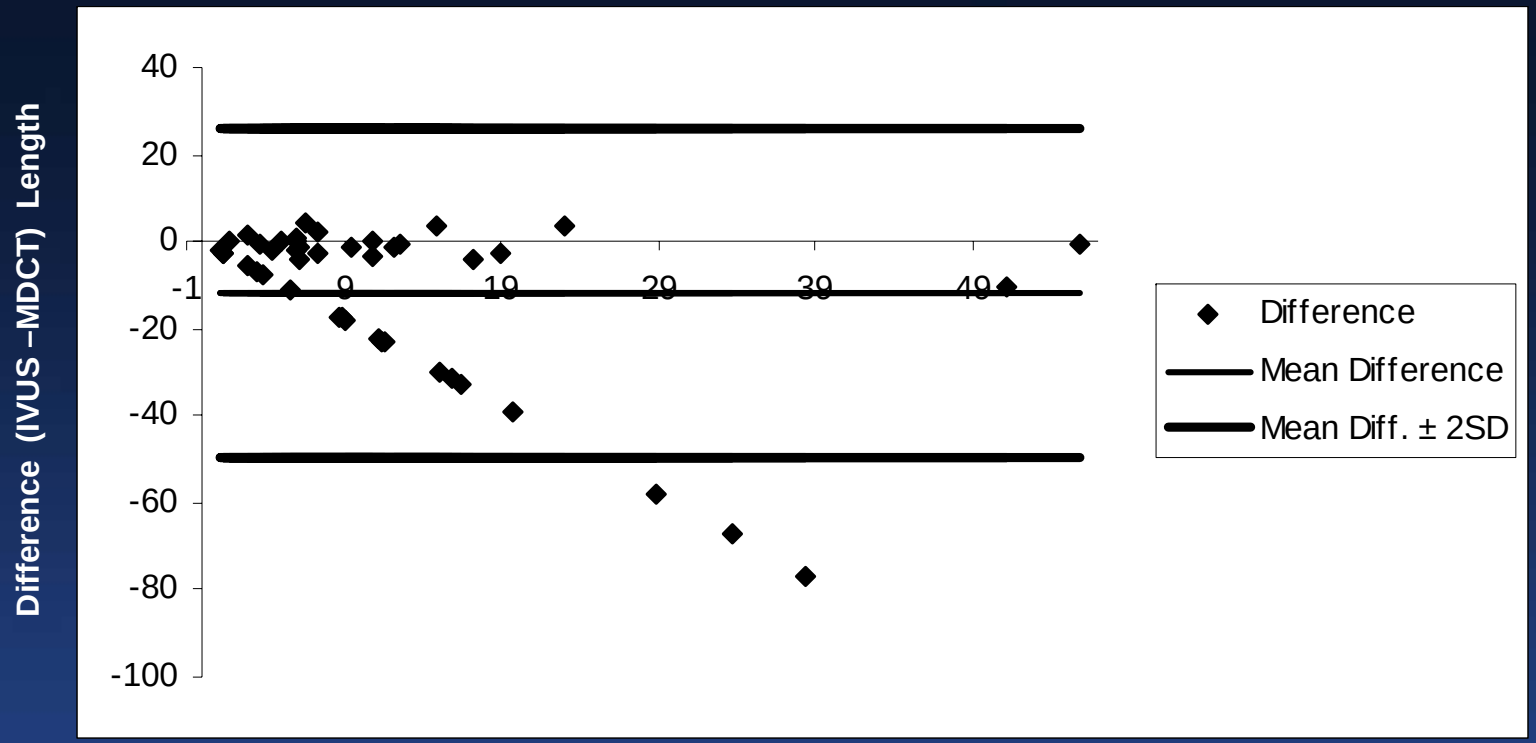
Comparison between IVUS and MDCT

- Single experienced CTO operator
- Consecutive successful 44 cases



Comparison between IVUS and MDCT

Occlusion Length: IVUS=12.4 ± 13.1mm, MDCT=18.5 ± 18.7mm

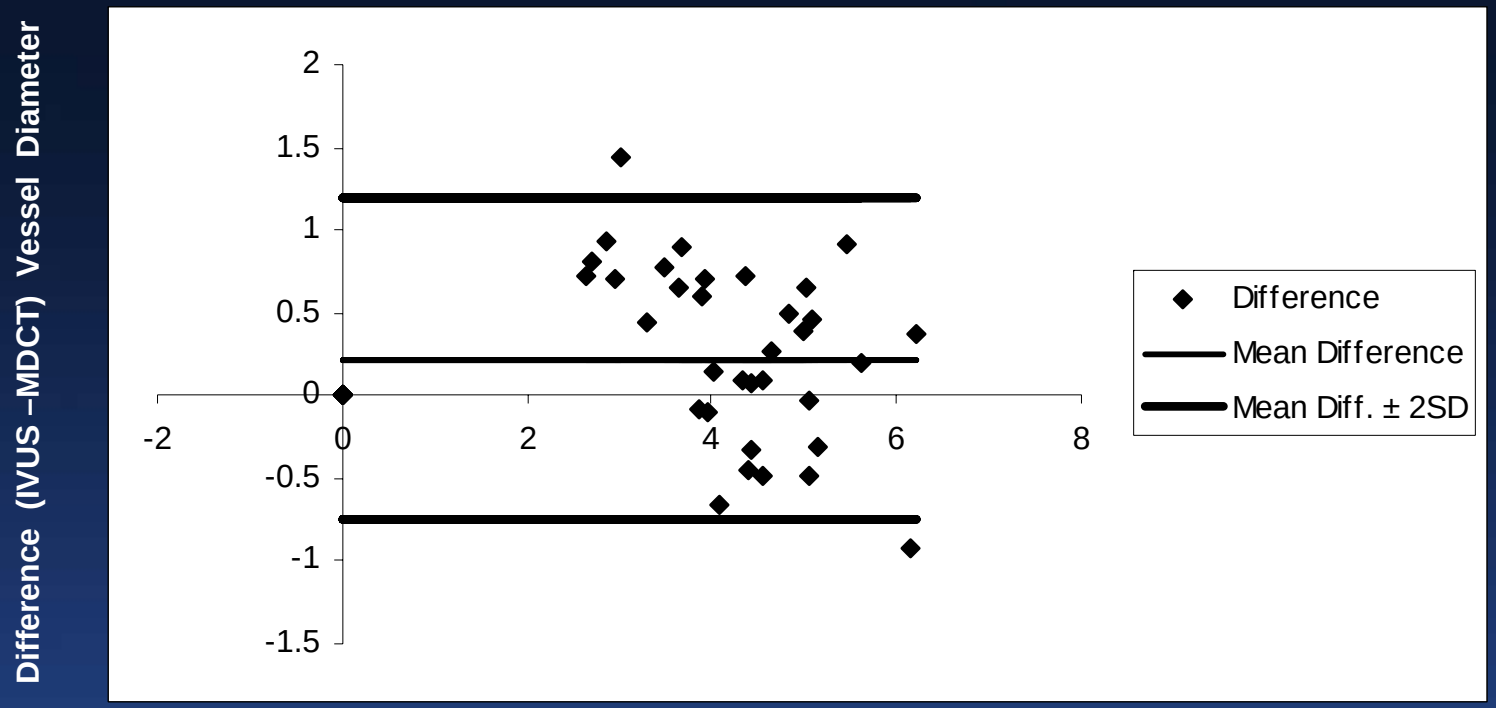


Mean of IVUS and MDCT length

mean difference -11.8mm

Comparison between IVUS and MDCT

Lesion Vessel Diameter: IVUS=4.4 ± 0.8mm, MDCT=4.2± 1.1mm

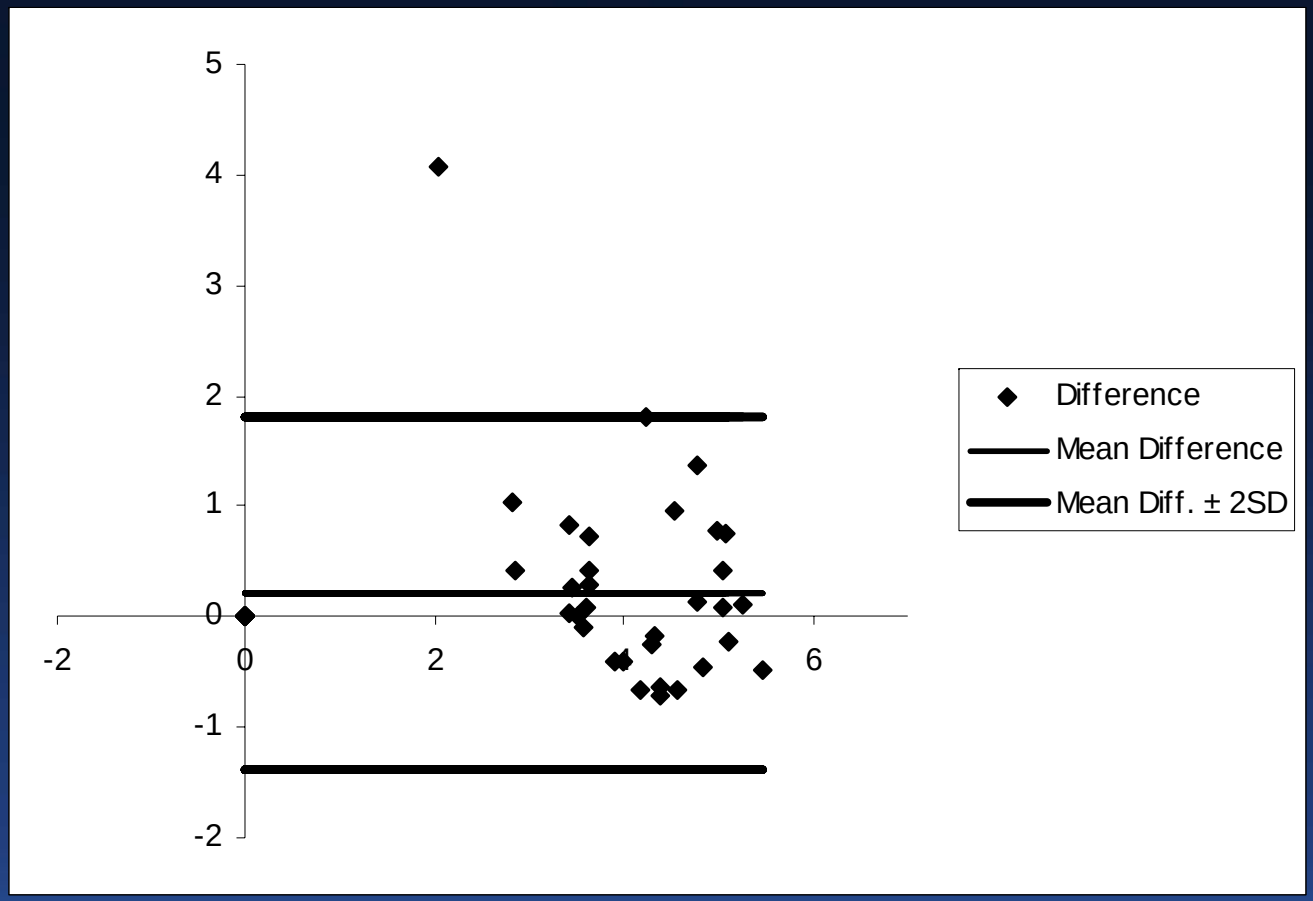


Mean of IVUS and MDCT Lesion Vessel Diameter

mean difference 0.22mm

Comparison between IVUS and MDCT

Proximal Vessel Diameter: IVUS=4.1 ± 0.8mm, MDCT=4.3± 0.7mm

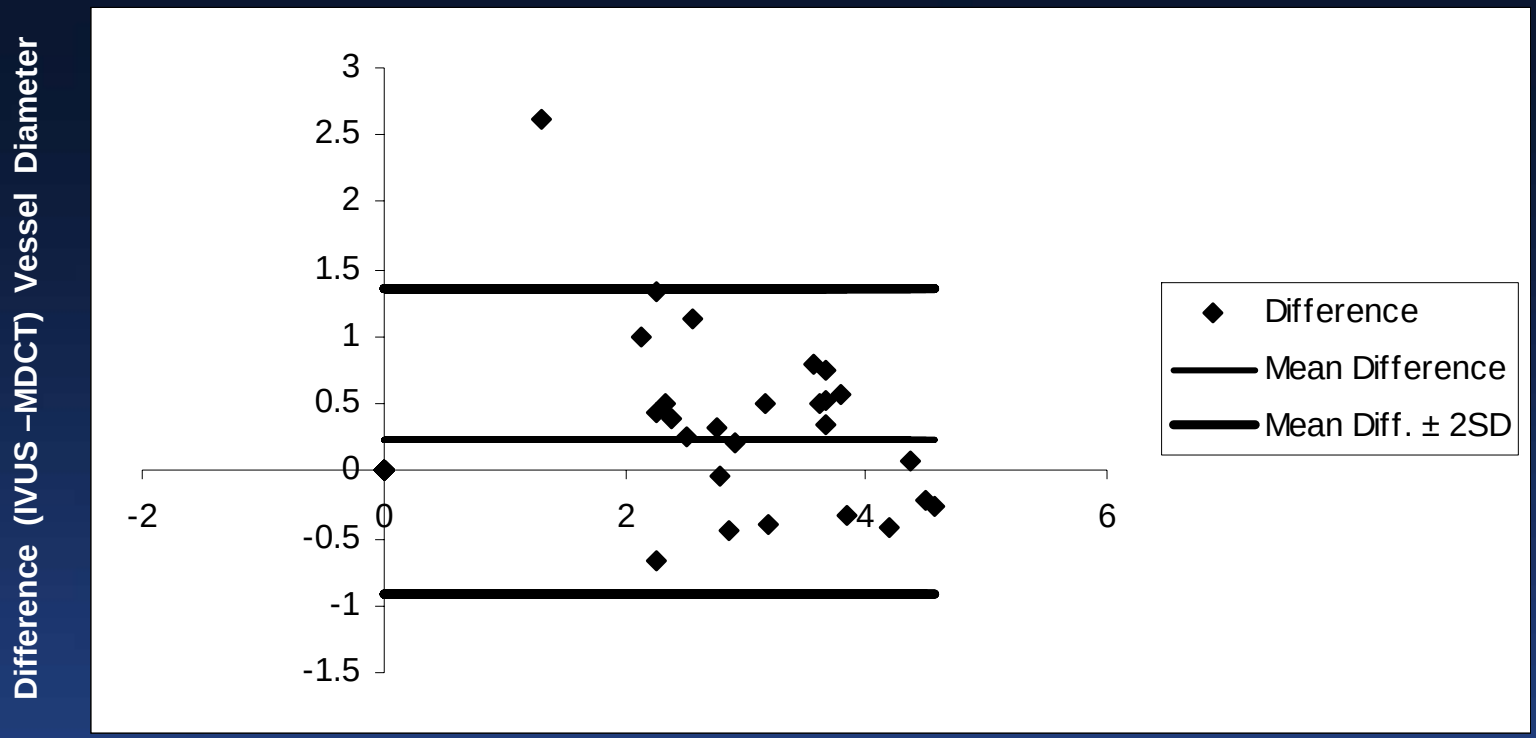


Mean of IVUS and MDCT Lesion Vessel Diameter

mean difference 0.21mm

Comparison between IVUS and MDCT

Distal Vessel Diameter: IVUS=3.3± 0.7mm, MDCT=3.1± 0.9mm

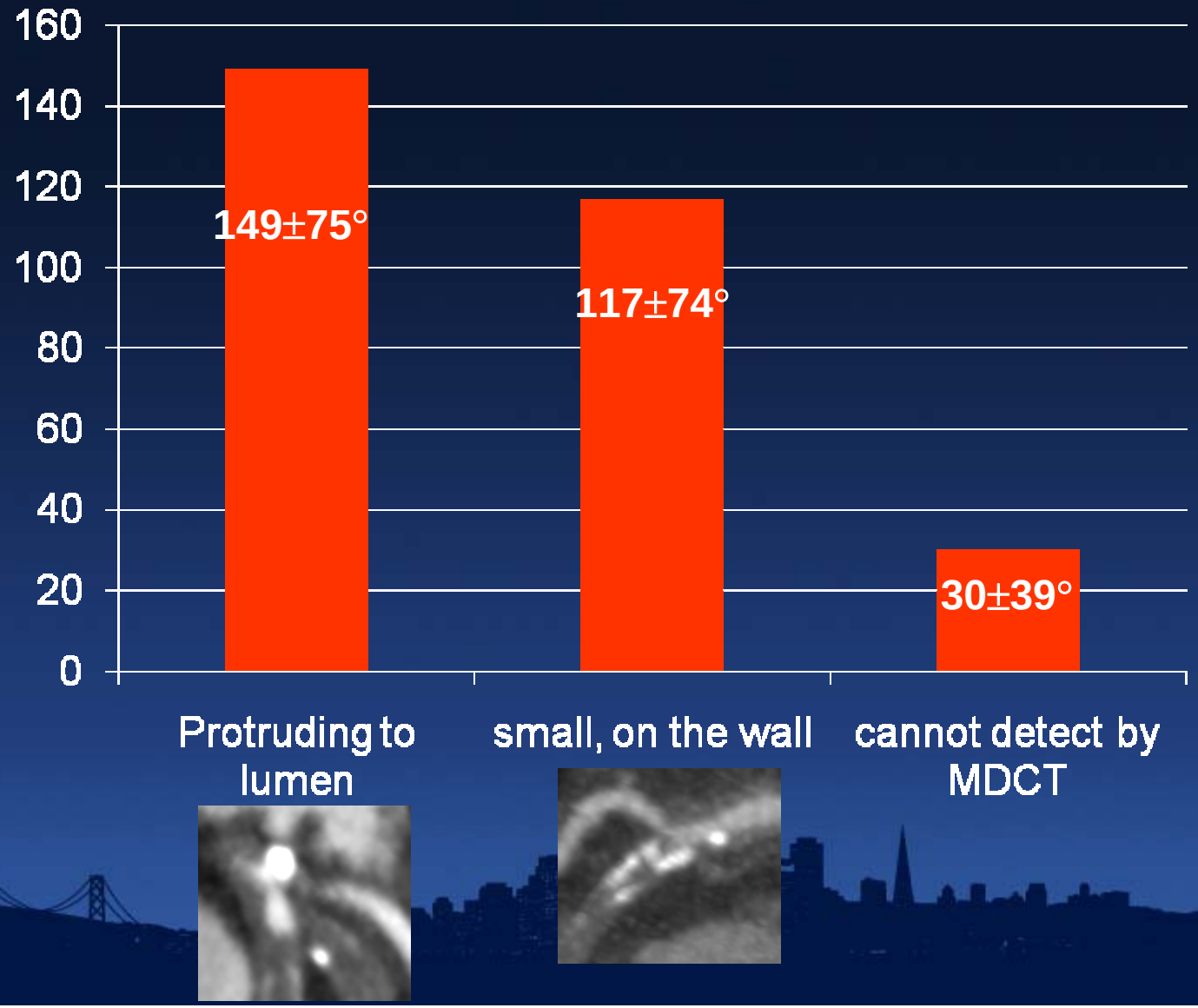


Mean of IVUS and MDCT Lesion Vessel Diameter

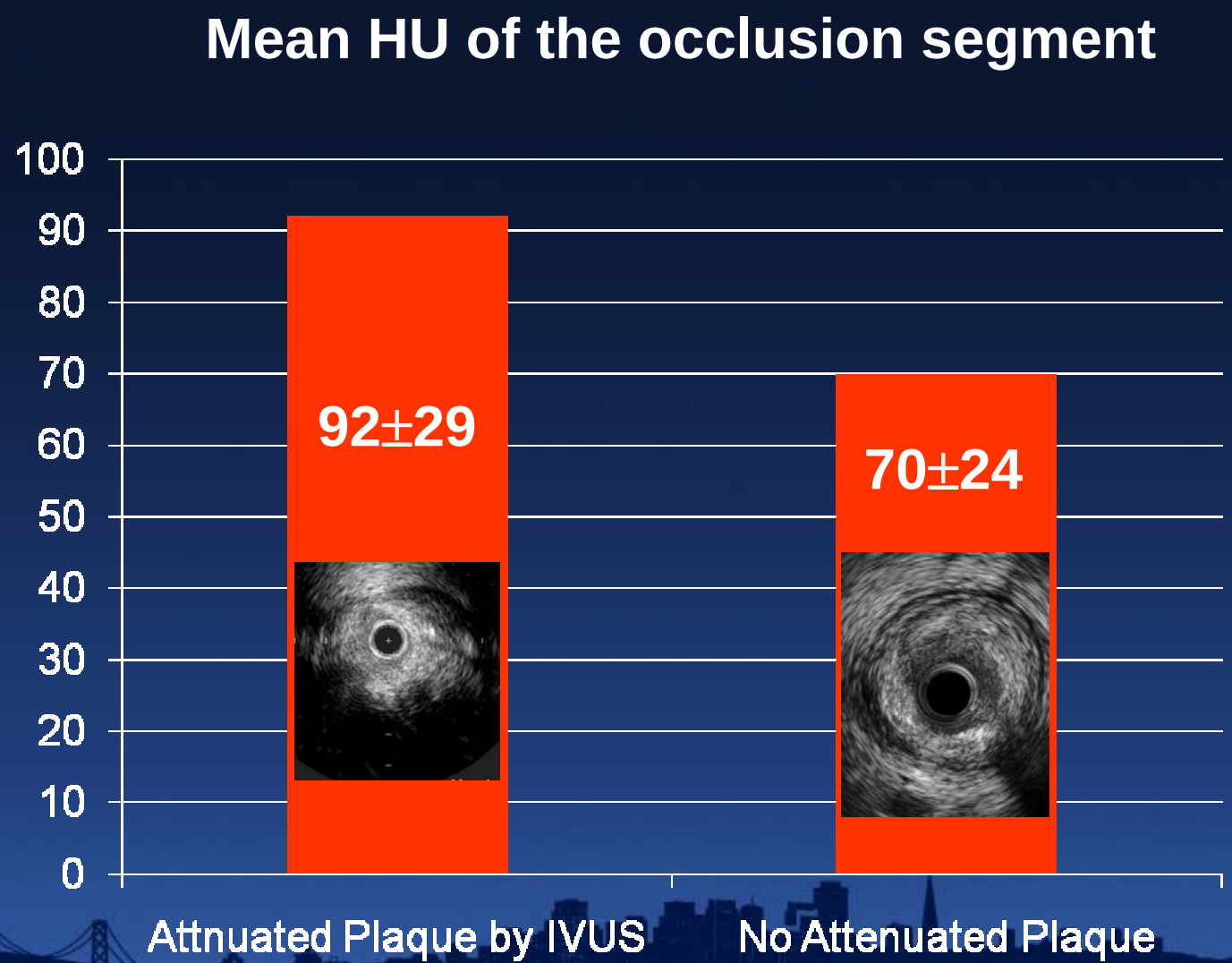
mean difference 0.22mm

Comparison between IVUS and MDCT

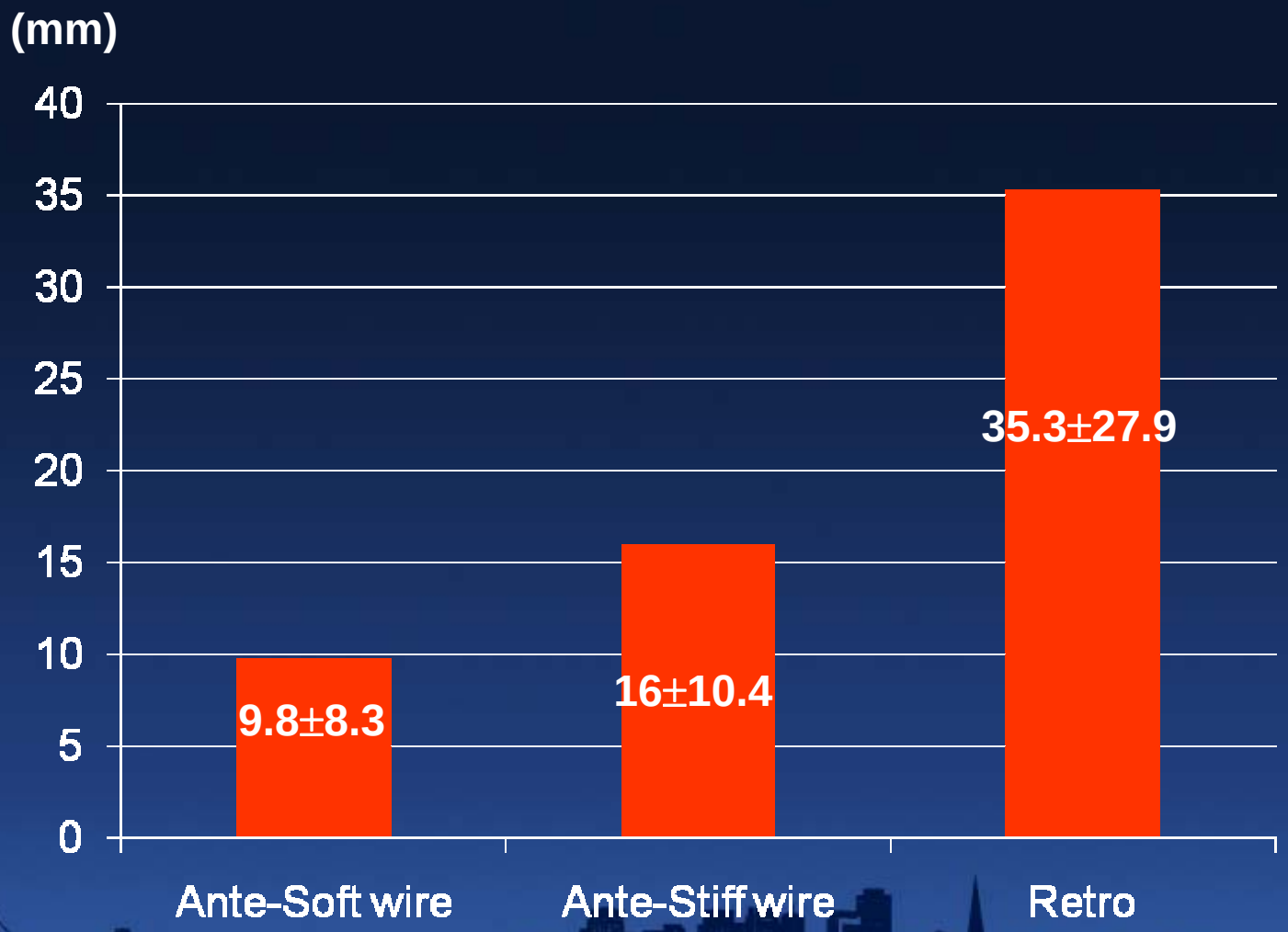
Maximum Arc of Calcification



Comparison between IVUS and MDCT



MDCT Occlusion Length



Predictors/Guidance for Wire Cross?

- Occlusion Length
- Calcification (protruding, restricted on the wall)
- Contrast Staining
- Vessel Collapse
- Angulation Distal to the Proximal Cap
- Hounsfield Unit (HU)?