Intravascular Lithotripsy vs. Coronary Atherectomy for Calcified Lesions

Michael S. Lee, MD, FACC, FSCAI
Interventional Cardiology

Case Presentation

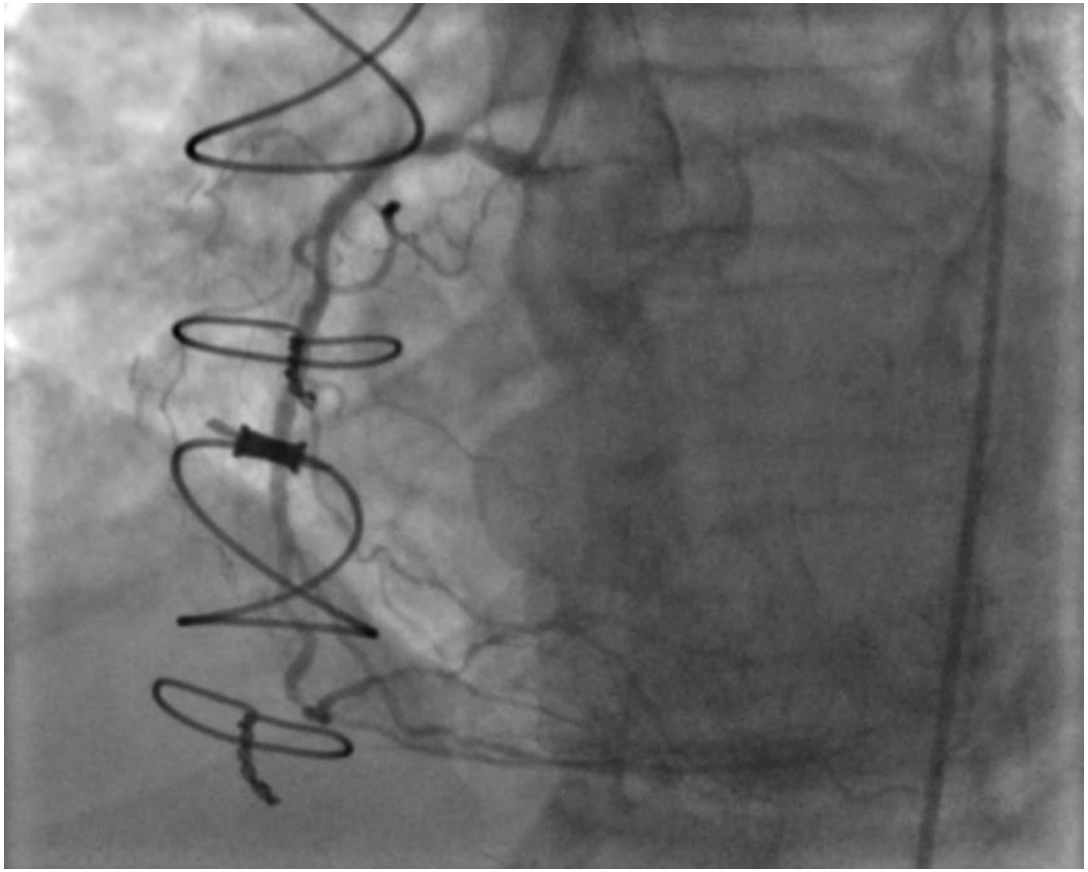
65-year-old female with diabetes and hypertension presents with angina

PMH:

- CAD s/p CABG
  - LIMA-LAD
  - SVG-RCA (occluded)
  - SVG- Diagonal
  - L Radial-OM (occluded)

Coronary Angiography of RCA

No competitive flow

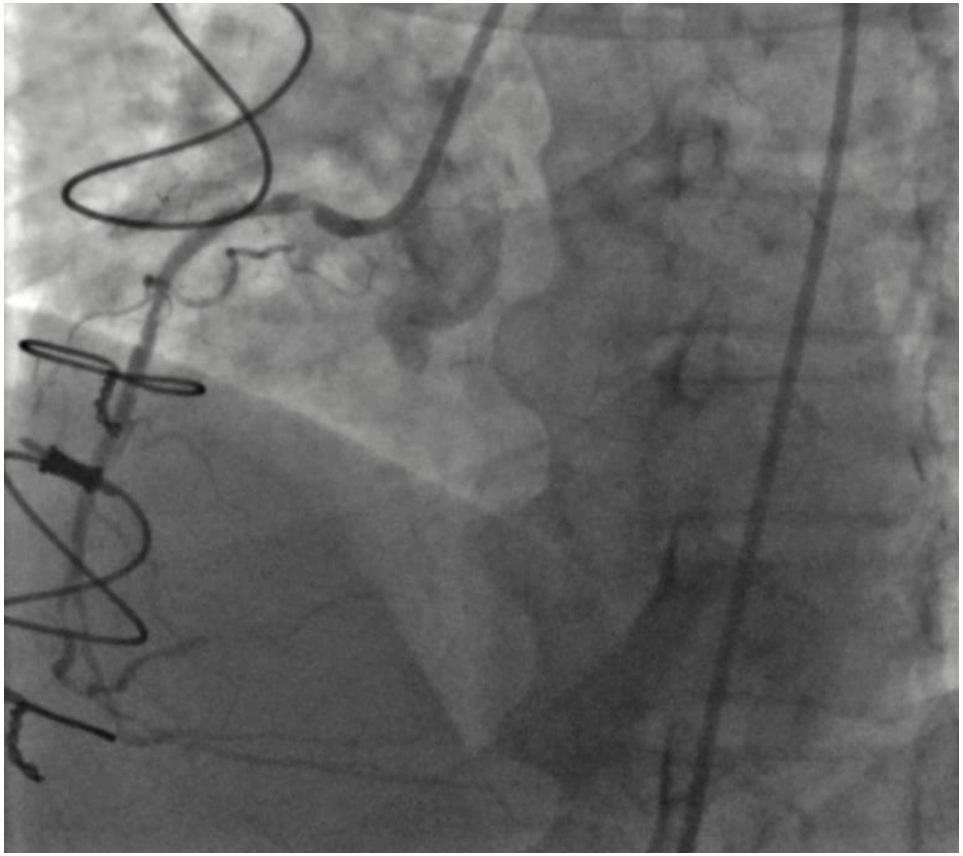


PCI with 2.5 x 20 mm DES
No IVUS or OCT performed

Follow up

- Initially had symptom improvement enrolled
- 4 months, developed recurrent exertional dyspnea and chest tightness
- Referred for coronary angiography

5 months post PCI

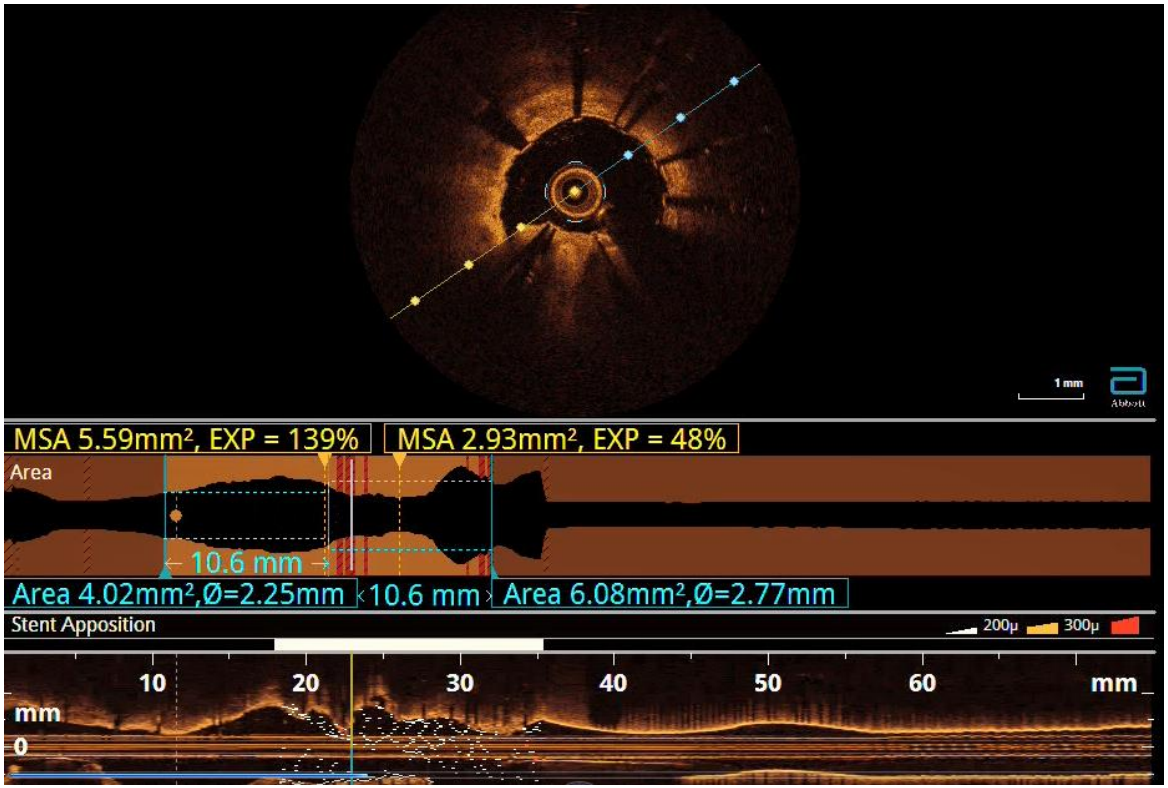


OCT

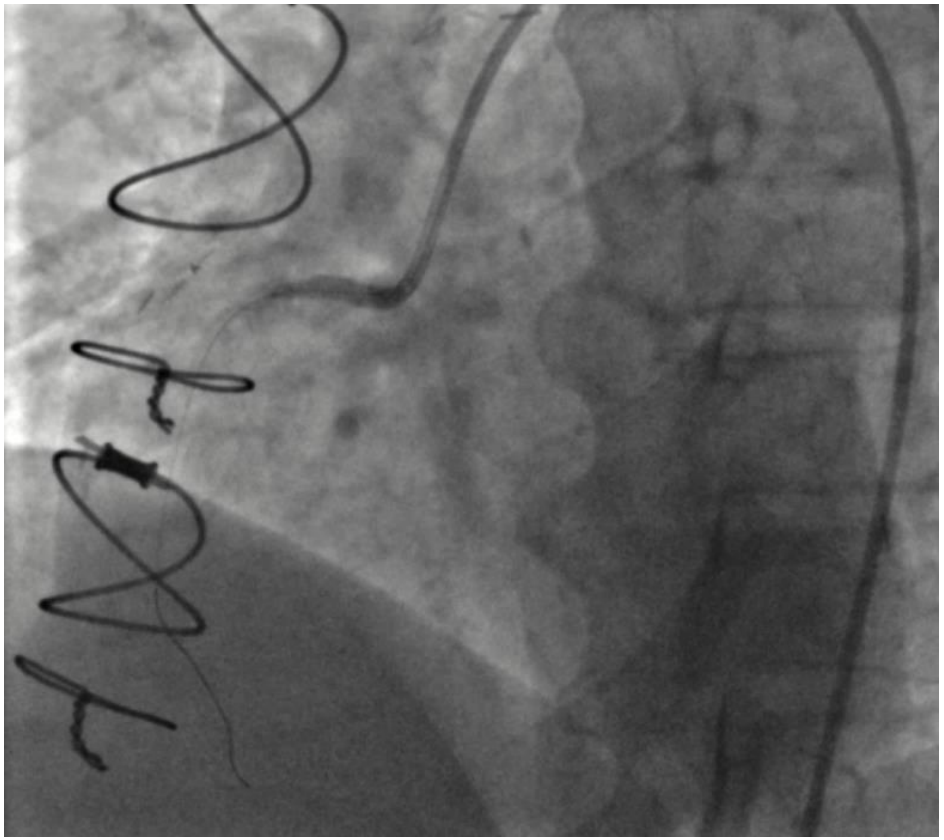
-Stent is underexpanded with MSA 2.93 mm^2

-No significant neointimal hyperplasia.

-Severe 270-360° of calcium throughout stented area

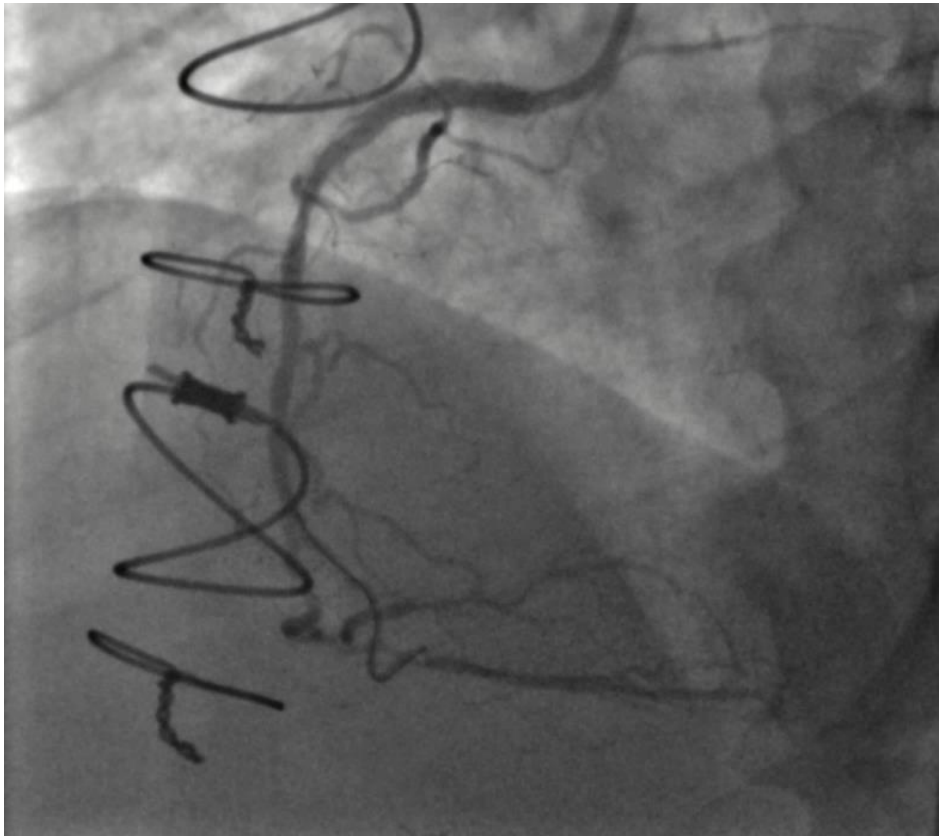


POBA
Incomplete balloon expansion of 3.0x15 mm NC balloon



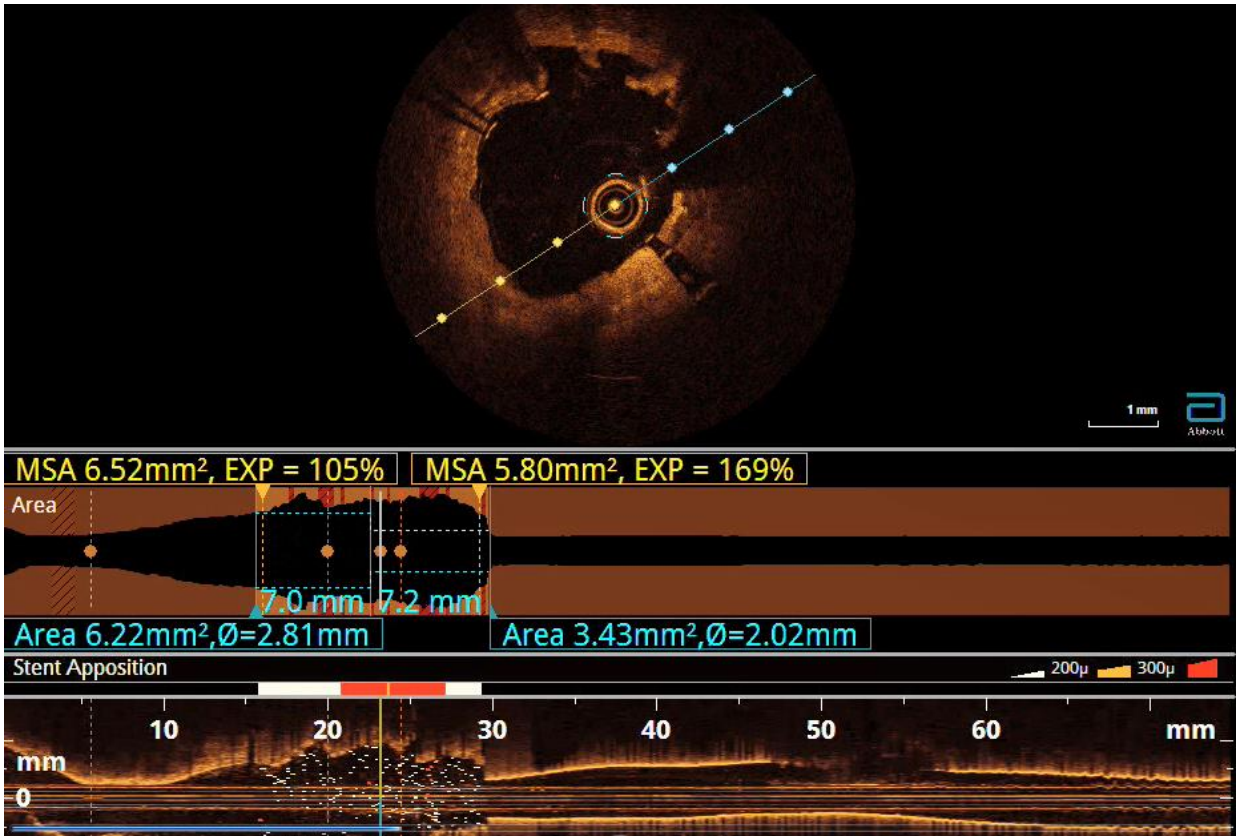
Post PCI with a 3.0 mm IVL balloon at 4 atm

Atherectomy might lead to burr entrapment

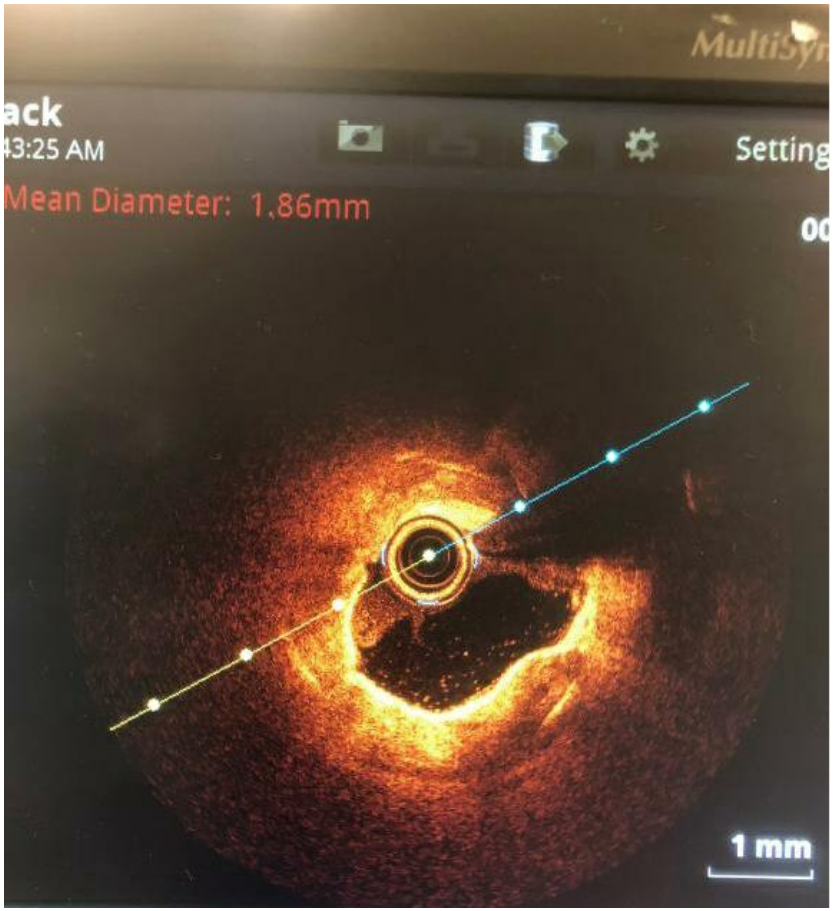


Post-IVL OCT

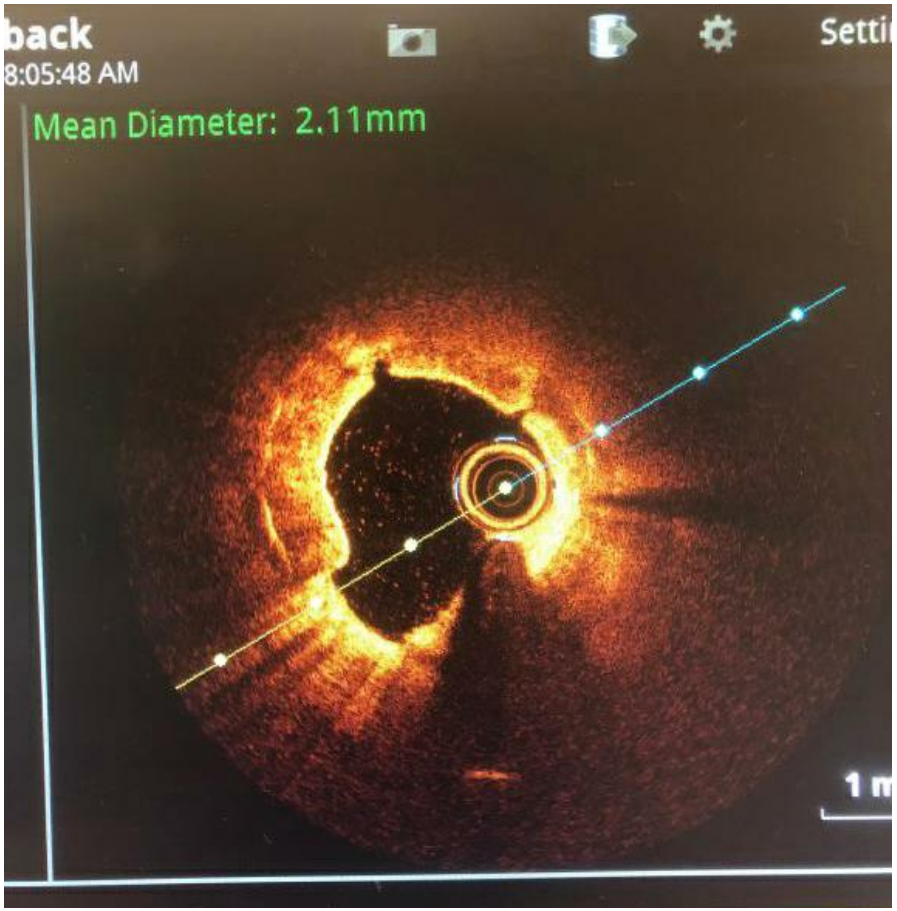
Optimal stent expansion
Maximal Stent Diameter 3.0mm
MSA 5.8 mm²



OCT of ISR



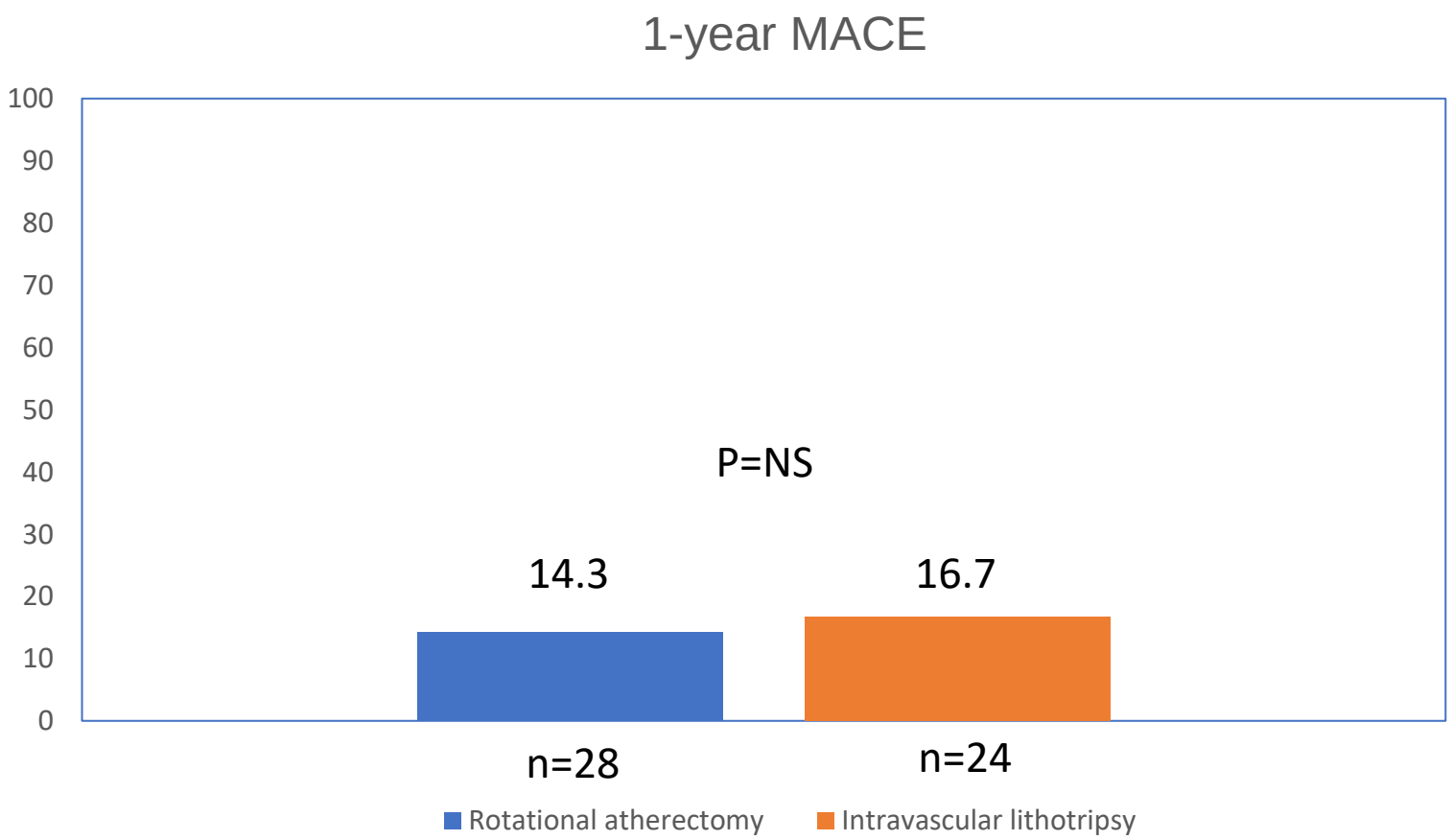
Calcified neoatherosclerosis



Calcium fracture after IVL

Atherectomy also might be a good option

Rotational Atherectomy vs. Intravascular Lithotripsy for Calcified In-Stent Restenosis
Single-Center Study



Farhat et al. Am J Cardiol 2023.

Conclusions

- Coronary IVL can be considered for ISR in the setting of stent under-expansion due to severe calcification
- More data are needed to determine the ideal treatment strategy for severely calcified ISR.