IVUS Virtual Histology Usage in Transfemoral and TransCarotid Artery Stenting

Clinical and Filter Findings

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Disclosure

Speaker name: Inkyong Parrack

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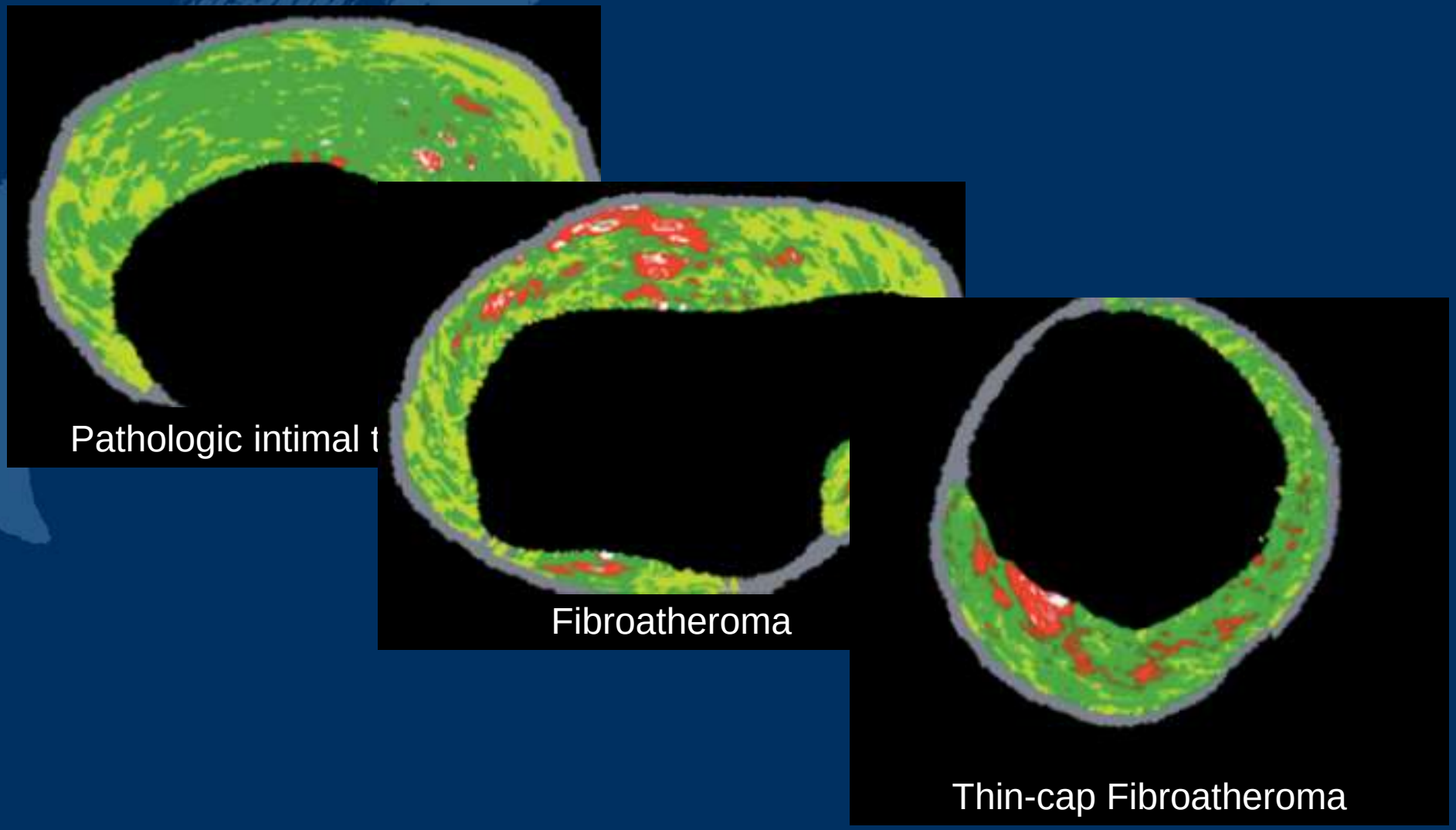
I have the following potential conflicts of interest to report:

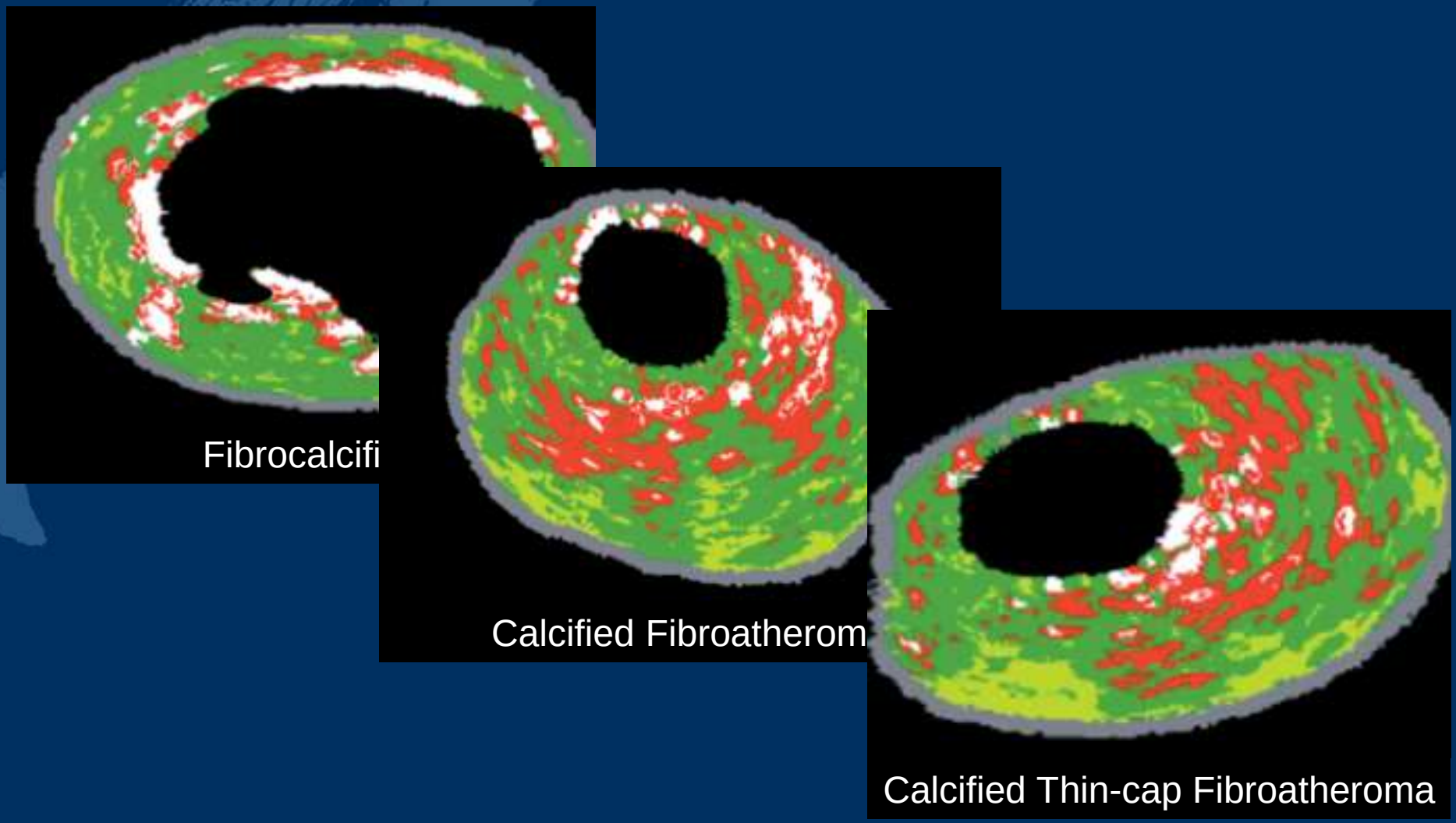
- ☐ Consulting
- ☐ Employment in industry
- ☐ Stockholder of a healthcare company
- ☐ Owner of a healthcare company
- ☐ Other(s)

- ☒ I do not have any potential conflict of interest

Virtual Histology Assessment in CAPITAL Study



Virtual Histology Assessment in CAPITAL Study



Our CAS technique and IVUS

- Minimal touch technique
  - No arch angiogram
  - Selective carotid angiogram, single shot
  - Emboshield filter
- IVUS
  - Virtual histology at the area of maximal burden
  - Used to confirm proximal/ distal extent of plaque
  - 8-10 x 40mm Xact stent
  - Post-stenting angioplasty balloon selection
- Carotid artery ultrasound in PACU

Findings

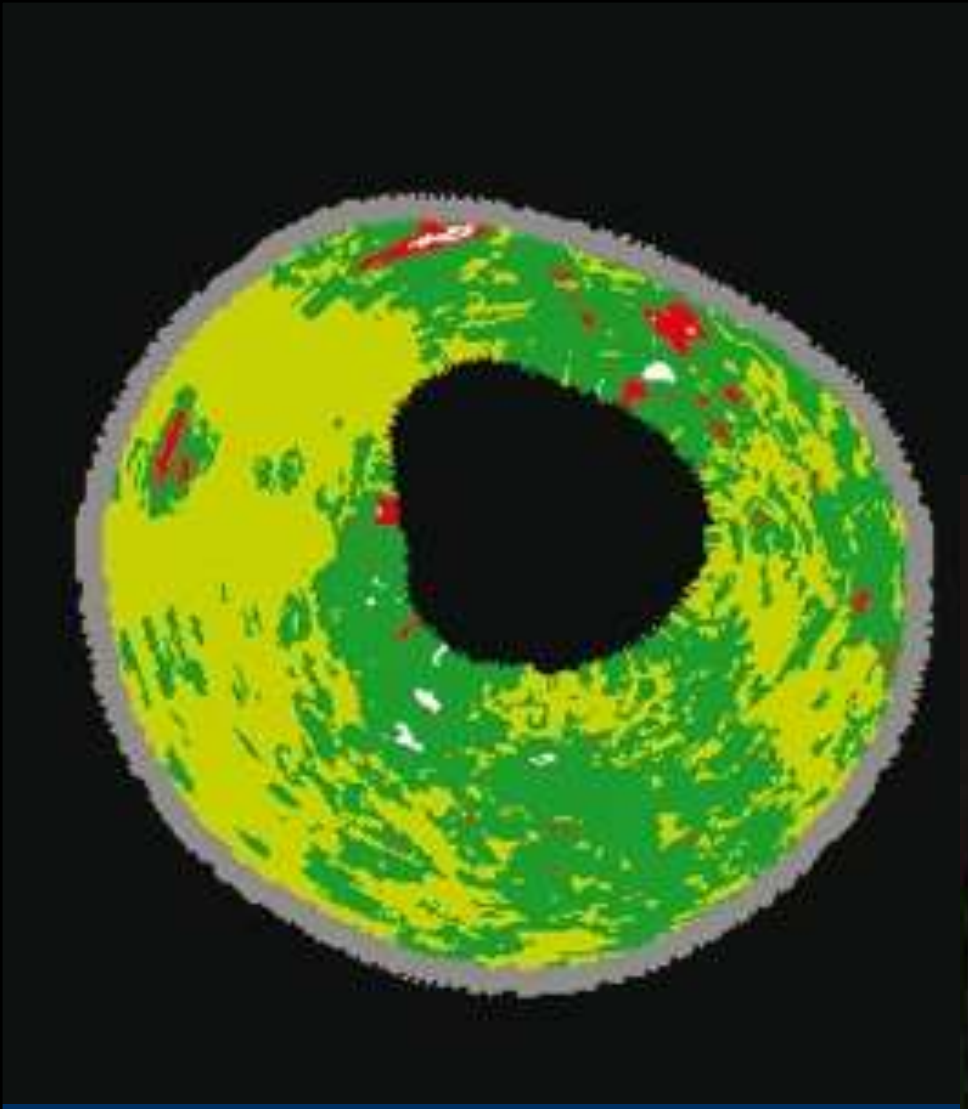
- No difference in peri-procedural stroke
- Use of larger diameter balloons for post-stent
- Lower contrast usage
- Lower incidence of >50% diameter –reducing in-stent stenosis on follow-up
  - 11% vs 7% at 1 month
  - 24% vs 6% at last surveillance, mean 36 months
- Lower reintervention rate
  - 3% vs 7%

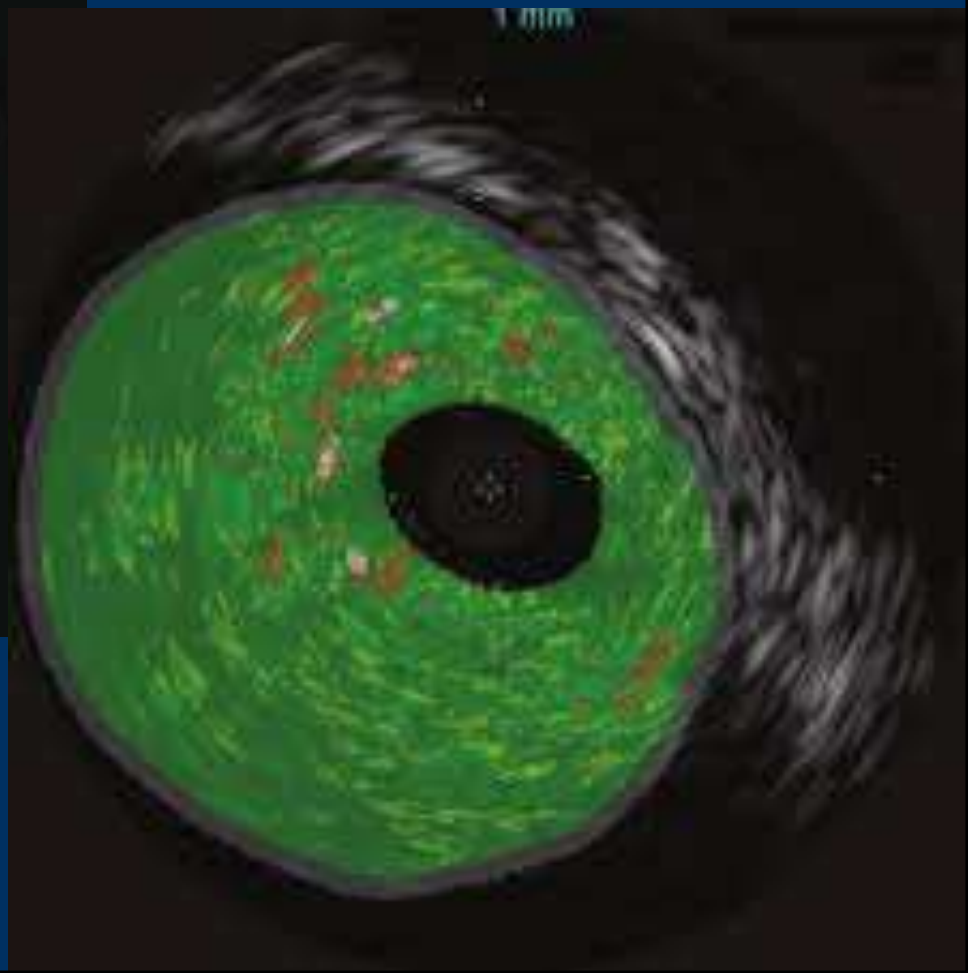
Findings

- Virtual histology variability
  - Most with fibrous plaque with some fibrofatty components
  - Few scattered necrotic core
    - > 10% necrotic core cutoff fibroatheroma rare
    - No notable necrotic core near the surface
- Very rare to find embolized plaque in Emboshield
  - Unlike CAPITAL study (4/30, 13%)
- VH did not produce any change in our practice or technique

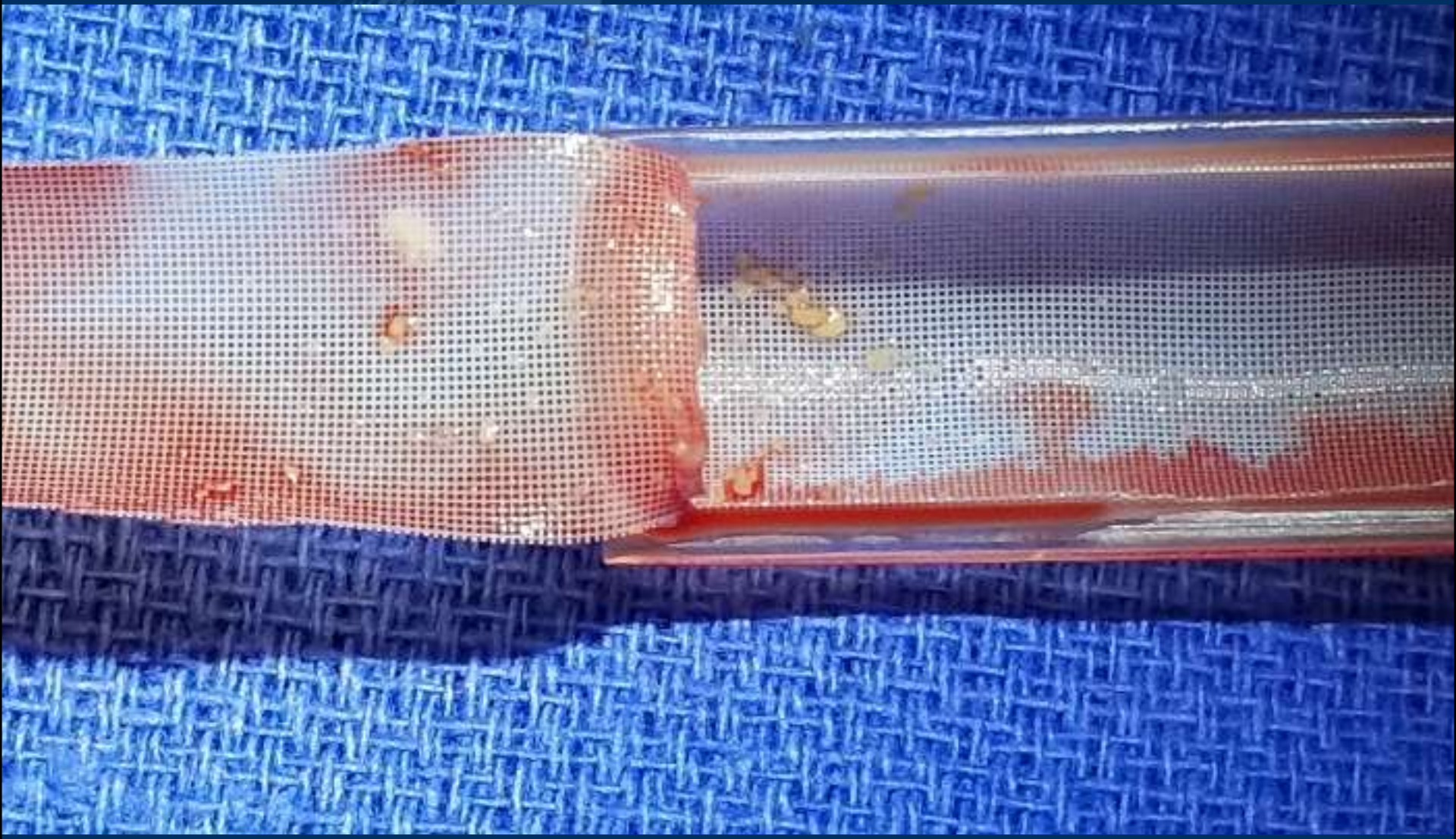
TransCarotid Artery Stenting

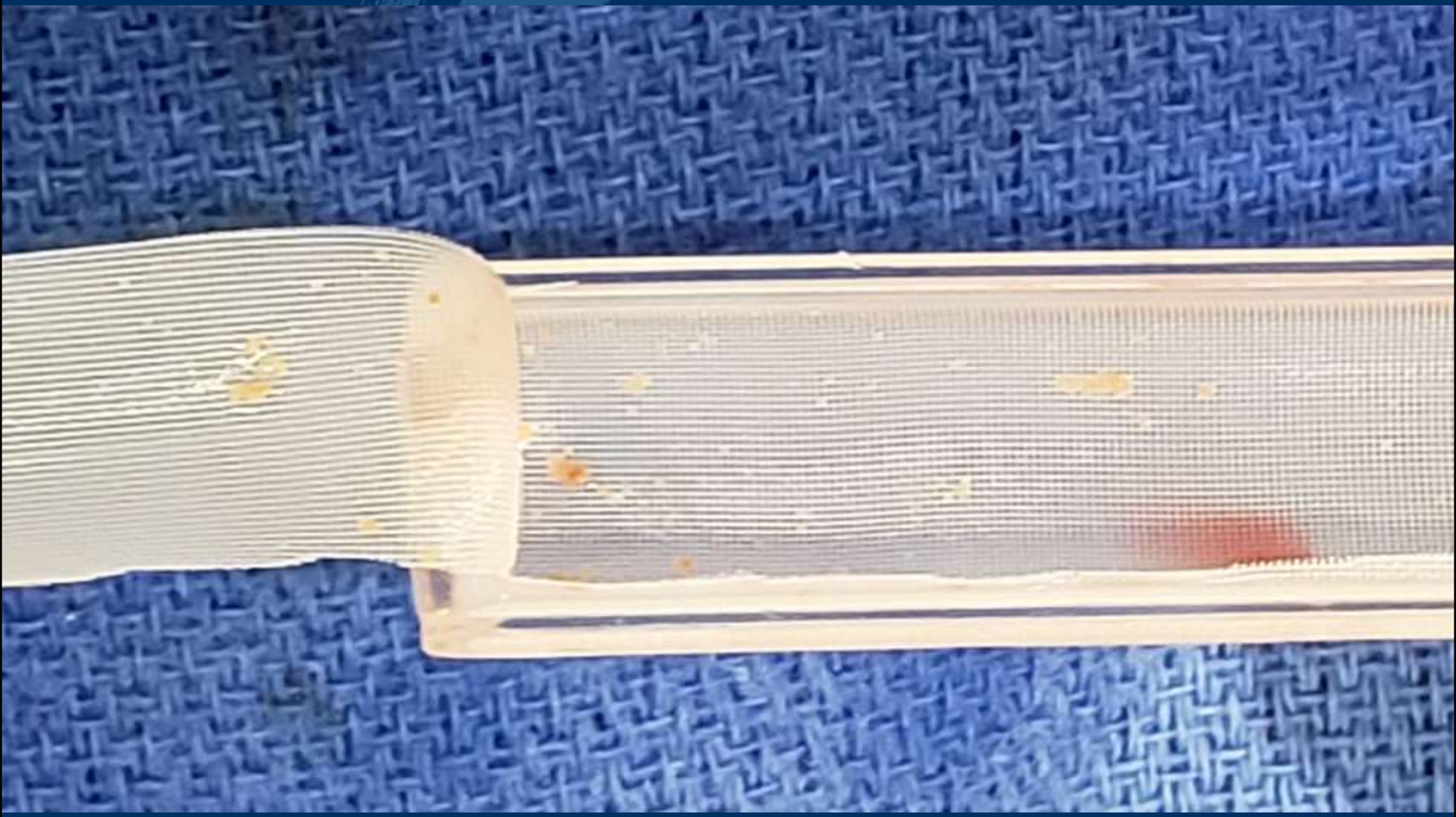
- Low stroke rate (ROADSTER 1.4%, minor stroke)
- Embolized plaque caught – every case had debris in the filter
- Plaque visible, not microdebris





Evaluation of Carotid Artery Plaque Using IVUS Virtual Histology
Tamakawa et al
Interv Neuroradiol. 2007 Mar; 13(suppl 1): 100-105.



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Virtual Histology Future

- Yet to find easily recognizable intraop utilization
- Increase number
  - Cases with drastic plaque burden
  - Correlating findings on VH-IVUS
- Translate to pre-stent planning for transfemoral CAS

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