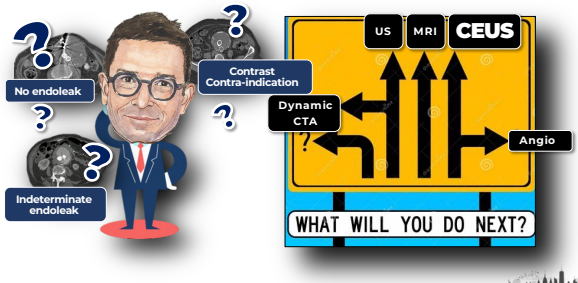
How to Improve Endoleak Detection And Finding Its Source With Contrast Enhanced Sonography

Thanila A. Macedo, MD
Associate Professor of Radiology
Director of Non-Invasive Vascular Imaging
McGovern Medical School at UT Health
Department of Diagnostic Imaging & Interventional Radiology | UTHealth Houston McGovern Medical School

Faculty disclosures

Thanila A. Macedo

- **Off-label use of CEUS**
- **Investigational use of devices**
  Cook Fenestrated and Branched Grafts
- **Consulting, research grants, scientific advisory board**
  None



US Contrast

- Introduced in Europe 1996
- Microbubbles
  - Sulfur Hexafluoride stabilized by lipid type A shell
  - 2.5 micrometers mean diameter (red cell is 8 micrometers)
- ***No cardio-hepatic or nephrotoxic effects***
- Contraindication: prior hypersensitivity reaction to the contrast

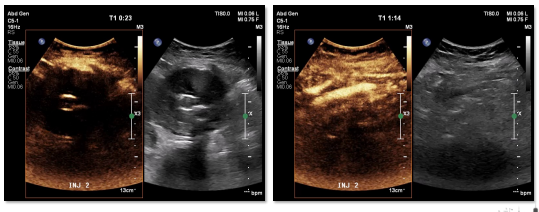
2014 FDA approved cardiac

2016 Liver Peds VUR

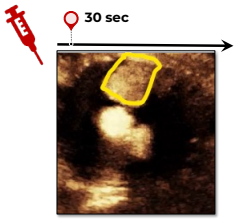
NOT FDA Approved for vascular

Endoleak Characterization

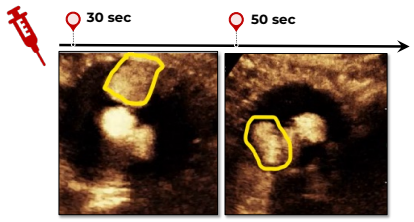
EVAR with sac enlargement and endoleak on CTA II ?IB



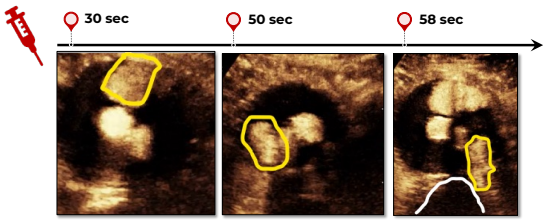
Endoleak Characterization



Endoleak Characterization

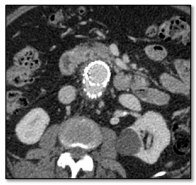


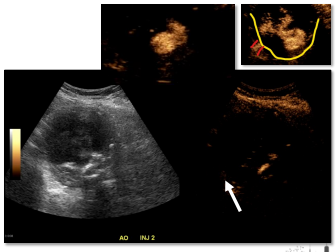
Endoleak Characterization



Endoleak Characterization

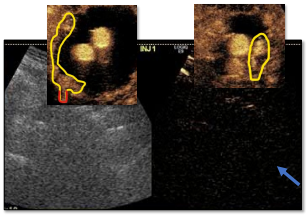
Routine CTA delayed phase
? Type II, III or IB





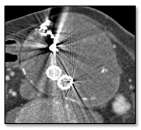
Renal dysfunction

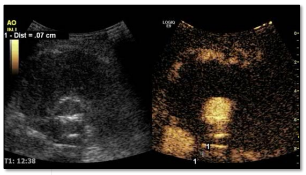
89 y with renal dysfunction prior CT without contrast slowly enlarging sac



Type II endoleak IMA and lumbar

Enlarging AAA, no endoleak on CTA





Intraoperative CEUS

Post-embolization residual endoleak

Post-additional embolization resolved

Conclusion

- CEUS is a problem solving technique
- Helpful in treatment planning to diagnose and characterize endoleak type
- Timing and location of contrast and CT correlation is used to identify source
- Intraoperative CEUS is a valuable tool to confirm successful endoleak treatment

Thank You!

Department of
Diagnostic Imaging & Interventional Radiology

UTHealth Houston
Heart & Vascular

thanila.macedo@uth.tmc.edu
thanila84@gmail.com