

# TCT Challenging case forum

## Hybrid Exclusion of a Subclavia Lusoria Aneurysm after bilateral carotid bypass

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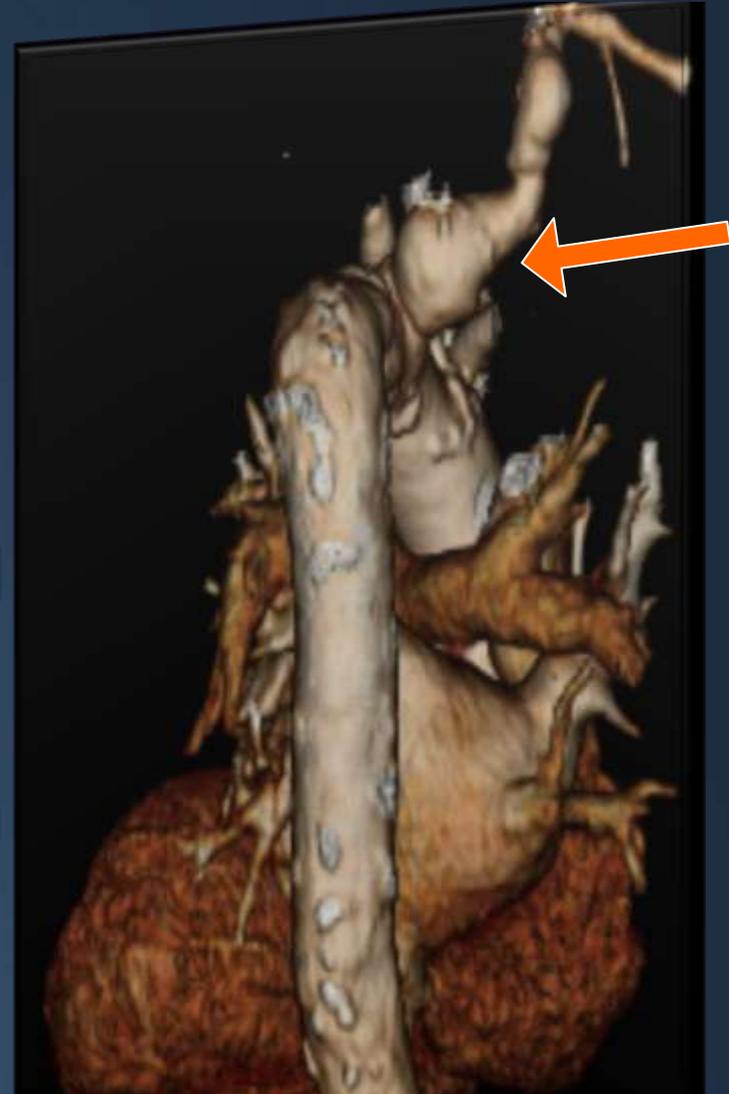


# Disclosures

- **Disclosures: NONE**
- **Off-label use of some products may be discussed**

# Subclavia Lusoria Aneurysm

- **72 y/o female** presented to an outside hospital with symptoms of rt. hand numbness, dysarthria, dysphagia & chest pain
- CT of the neck and head revealed an anomalous origin of right SCA (**Subclavia Lusoria**) with a **28 mm aneurysm**.



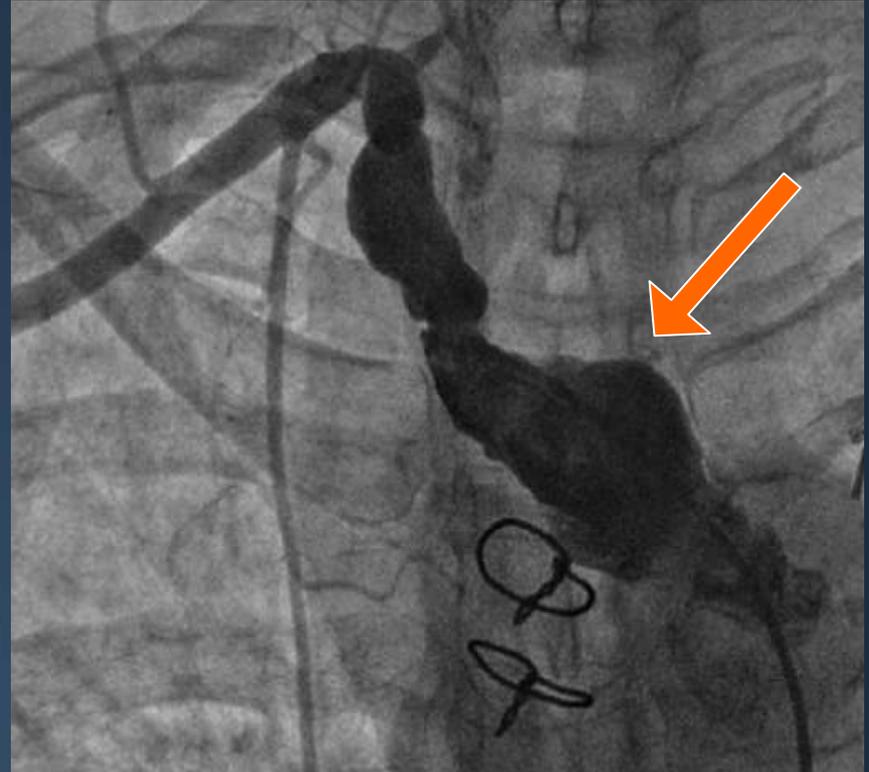
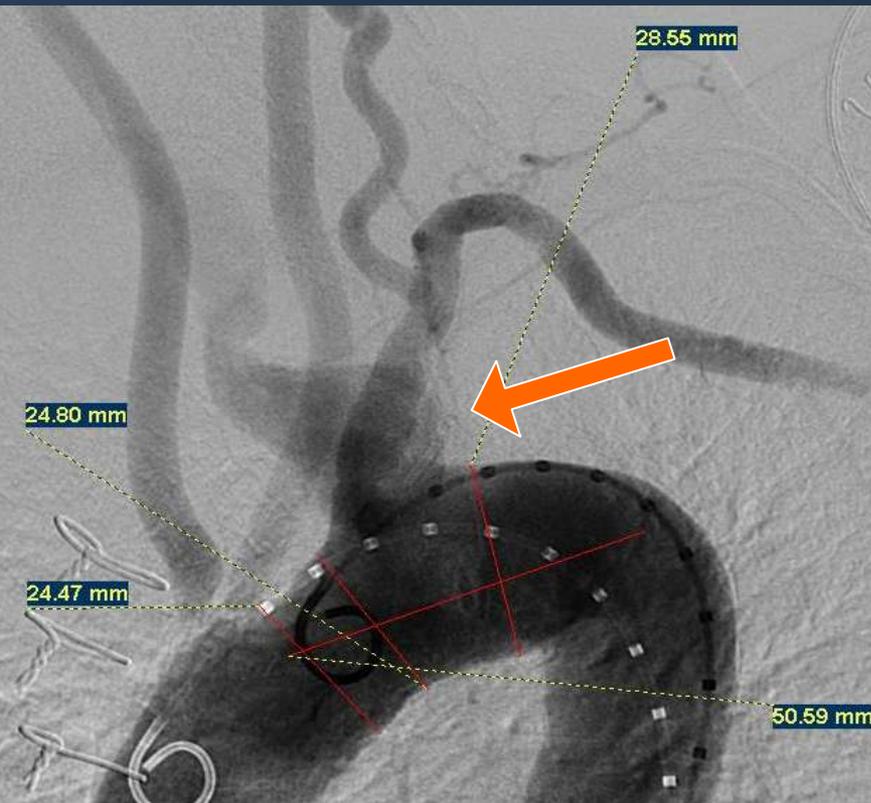
# Clinical Background

- **PMHx:** h/o CVA right sided >3months ago, HTN, CAD, s/p CABG x 3 (5yrs prior), Hyperlipidemia, PVD, Infrarenal AAA (3.4 cm)
- **PSHx:** Hysterectomy 1975, Lung Surgery 1971, PCI to RCA, 3 vessel CABG
- **FamHx:** Brother/MI & Aortic Dissection
- **SocHx:** nonsmoker
- **Meds:** On antiplatelet RX, statin,  $\beta$ -blocker, ARB

# Pertinent physical exam & Imaging studies

- BP: Rt brachial 129/70 Lt 130/70
- HEENT: **Rt Neck & subclavian bruit**
- Neuro: CN II-XII intact, 5/5 strength
- **Tests:**
  - **Nuclear perfusion:** Reversible basal and mid anterior ischemia (mild). LVEF 51%
  - **Carotid Duplex:** Mild b/l disease
  - **CT head:** multiple small old infarcts

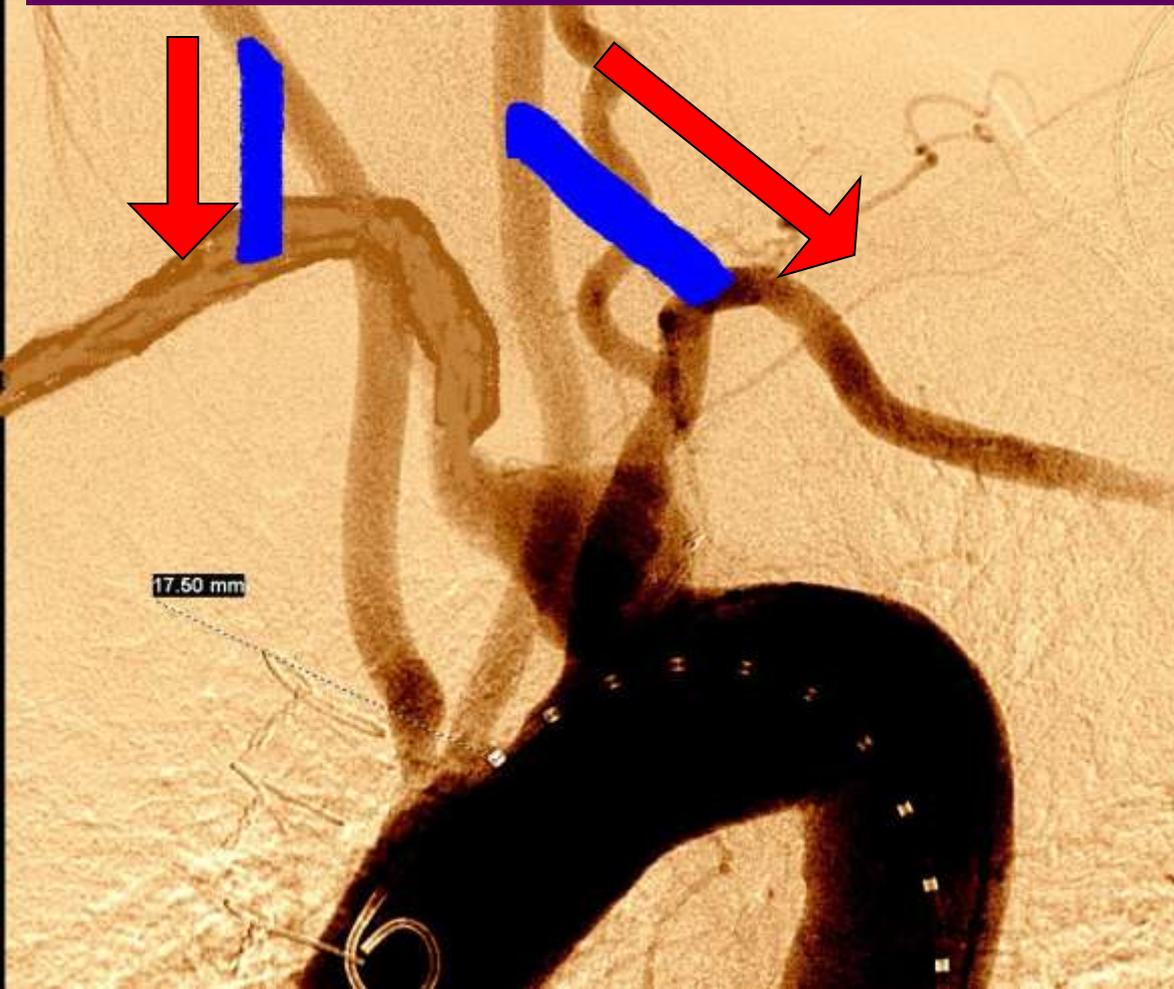
# Angiogram



- Because of comorbid conditions, patient was considered too high risk for surgery and was referred for hybrid endovascular treatment

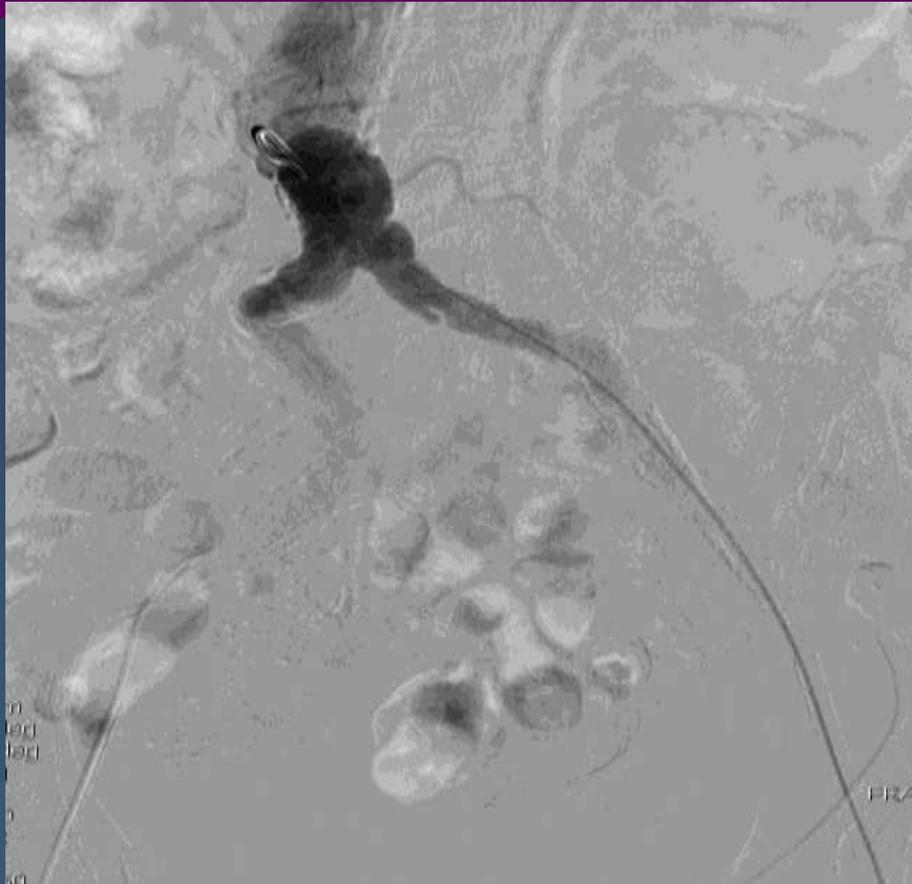
# Schematic of Planned Hybrid Procedure

1. Bilateral carotid-subclavian bypass (shown)
2. Rt aberrant subclavian aneurysm exclusion
3. PCI -> OM stenosis

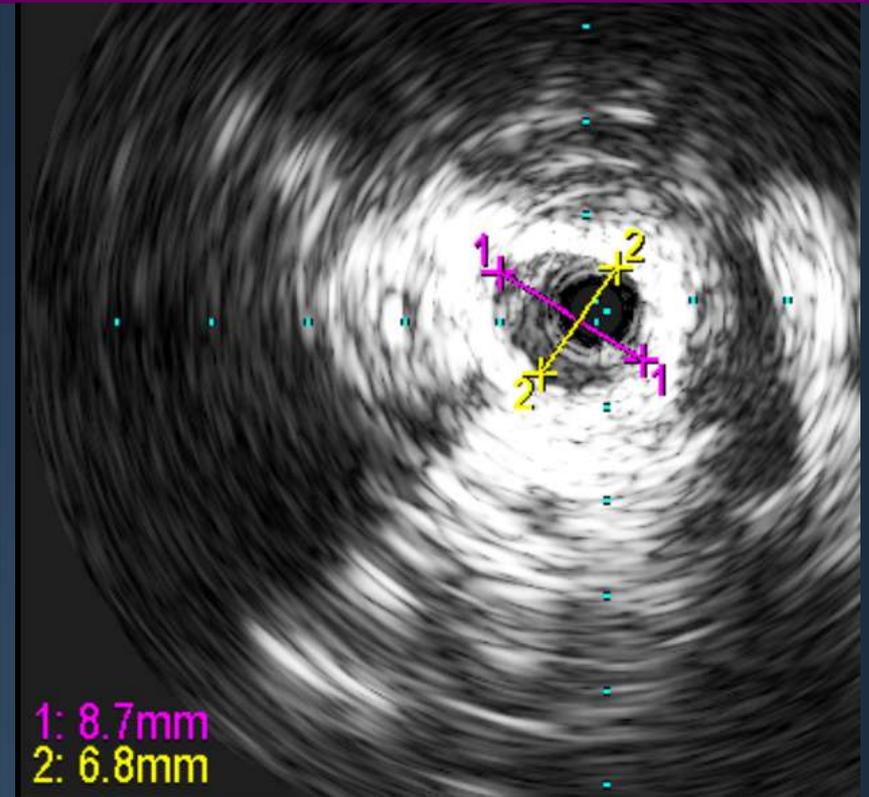


- Successful bilateral CCA to SCA bypass
- OM PCI: 2.5x28 stent
- 1 mo later – planned aneurysm exclusion with thoracic stent graft and vascular plug

# Plan: Thoracic Stent graft and Vascular plug to Exclude the aneurysm



**Aortic Angio**  
**Lt. FA 8 F Sheath**



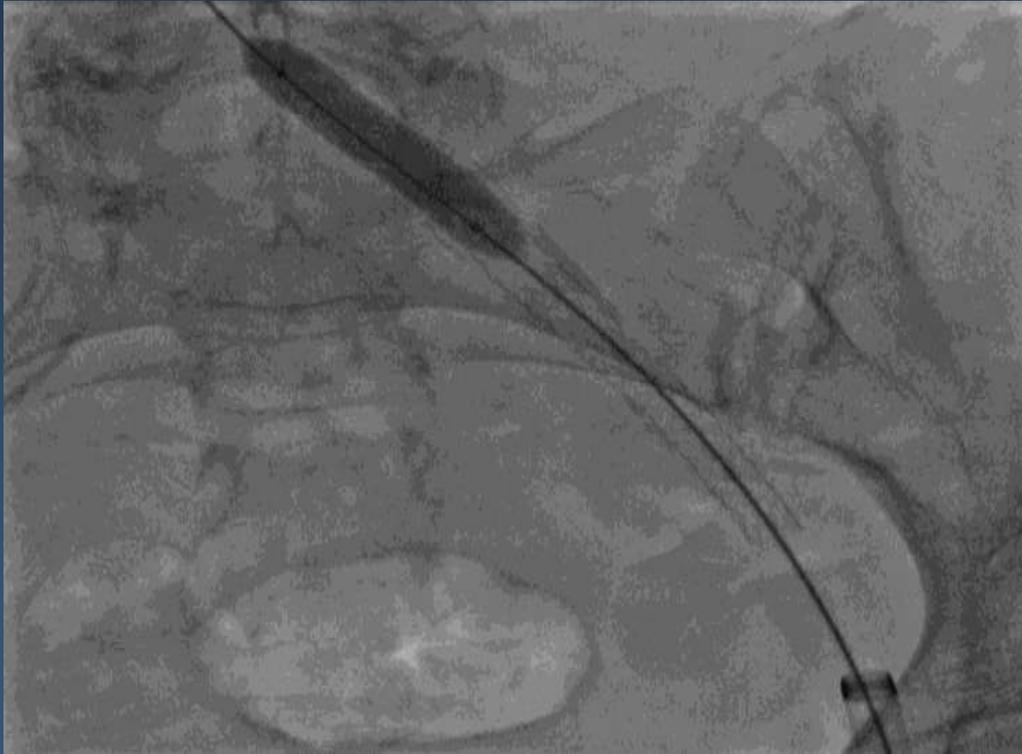
**IVUS Lt. iliac**

# Procedure



- **0.035" 260cm Meier wire Lt FA**
- **PTA was done throughout the length of the artery with a 10x40 mm balloon**
- **18 F dilator could not be advanced over the wire!**

# Pave & Crack Technique



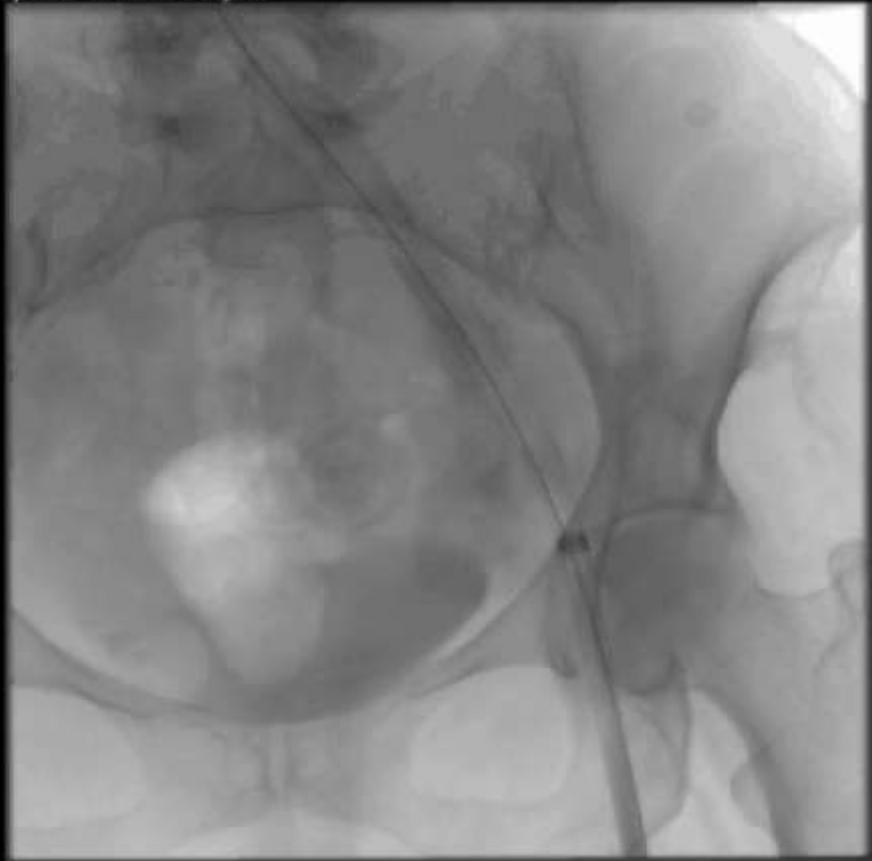
- Three 9x59 iCAST covered stents were deployed & PTA with a 10x40 mm balloon was done

# Procedure



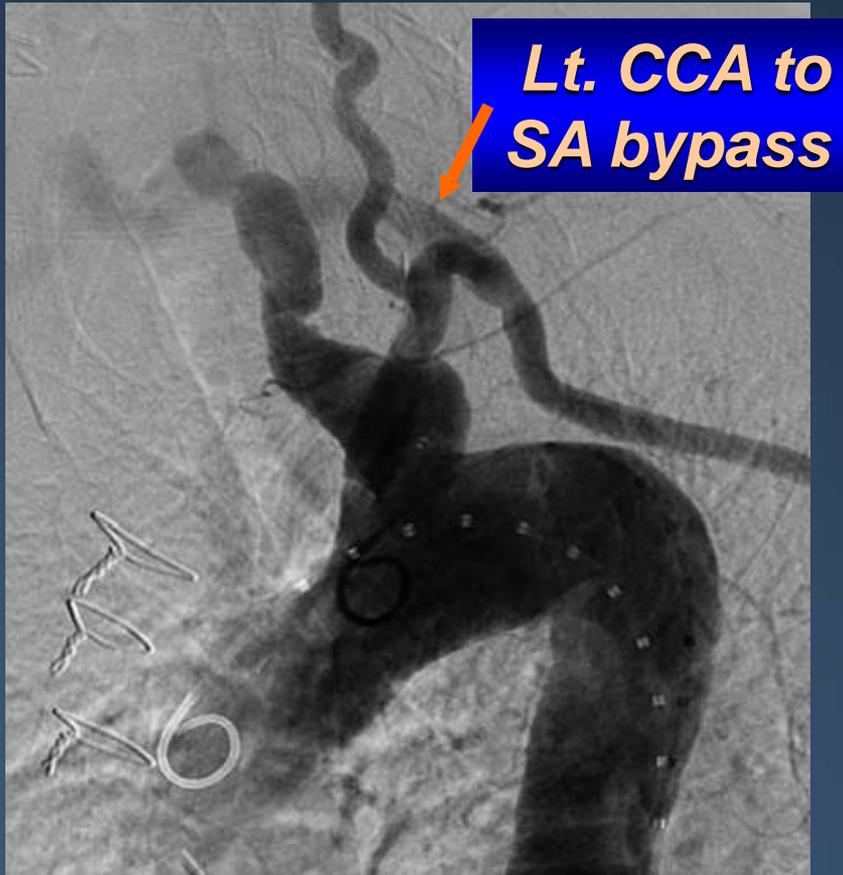
- **0.035” Lunderquist wire was inserted and exteriorized via the lt. brachial artery access in a “body floss technique”**
- **22 F Talent device could not be advanced**

# Final Left Femoral Artery Angio



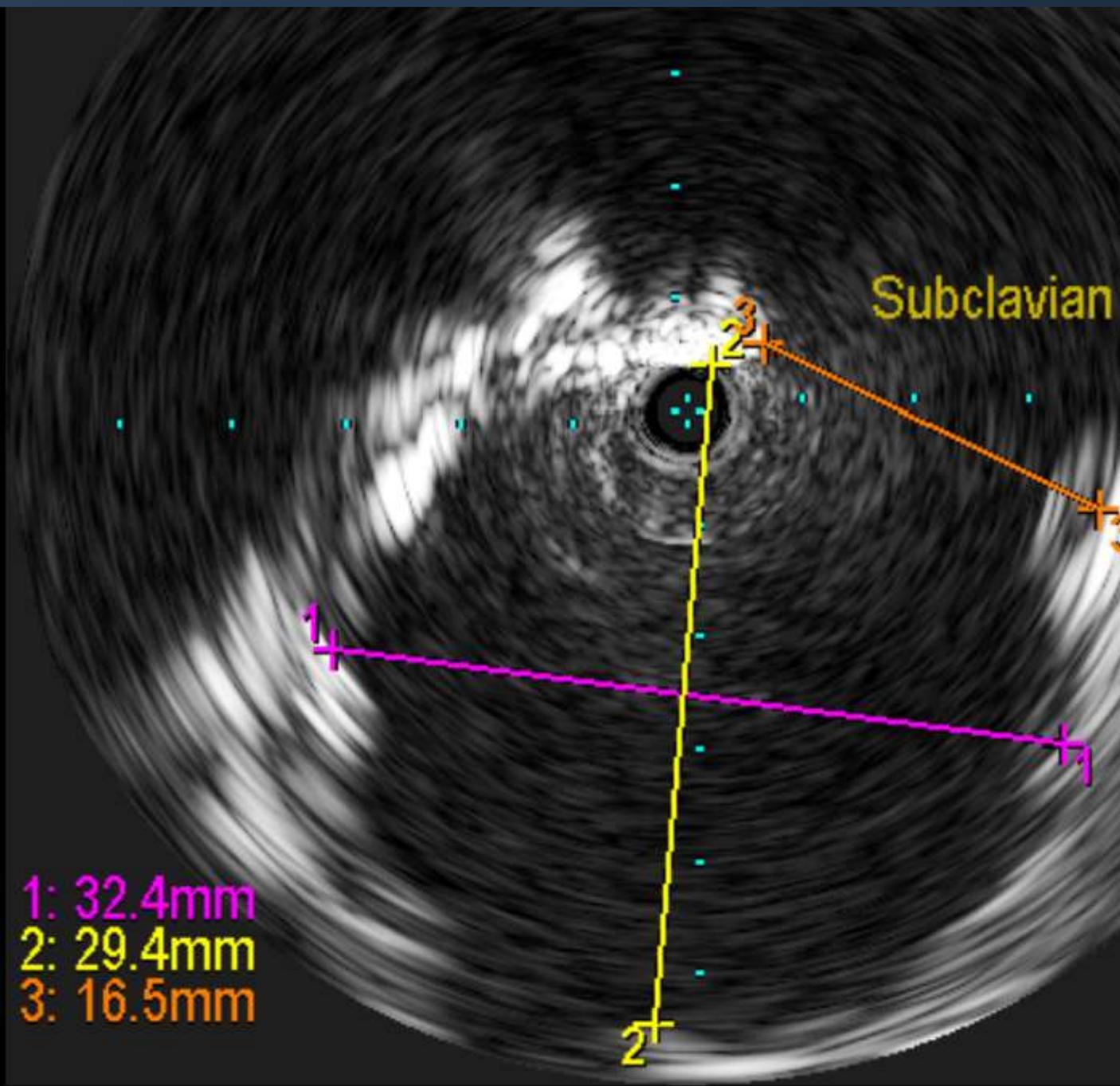
- Heparin effect was reversed
- Both femoral arteries were repaired with 10F Prostar XL
- The pt. remained stable throughout hospital course
- Discharged the next day with the intention of a different attempt in a month

# 1 mo. later: S/p bilateral carotid-SCA bypass, Intervention with AGA vascular plugs



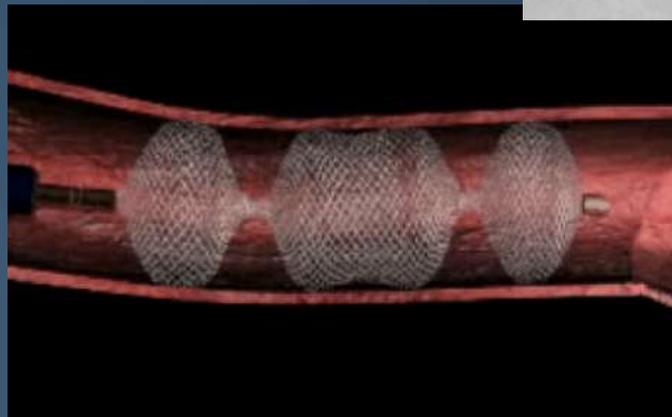
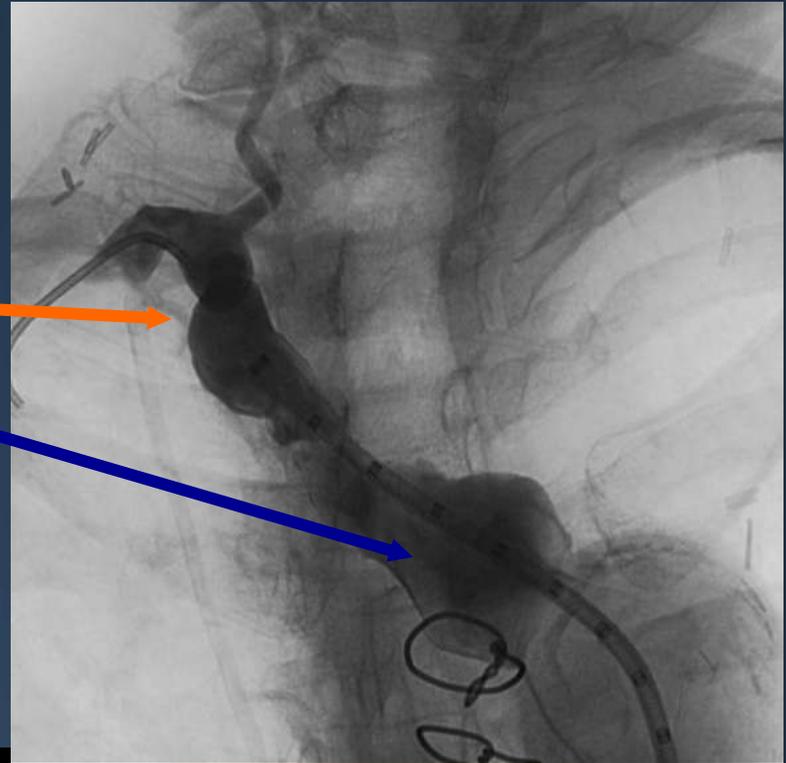
- Rt. FA: 7F Shuttle Select™ & H1 catheter

# Ao-SCA IVUS



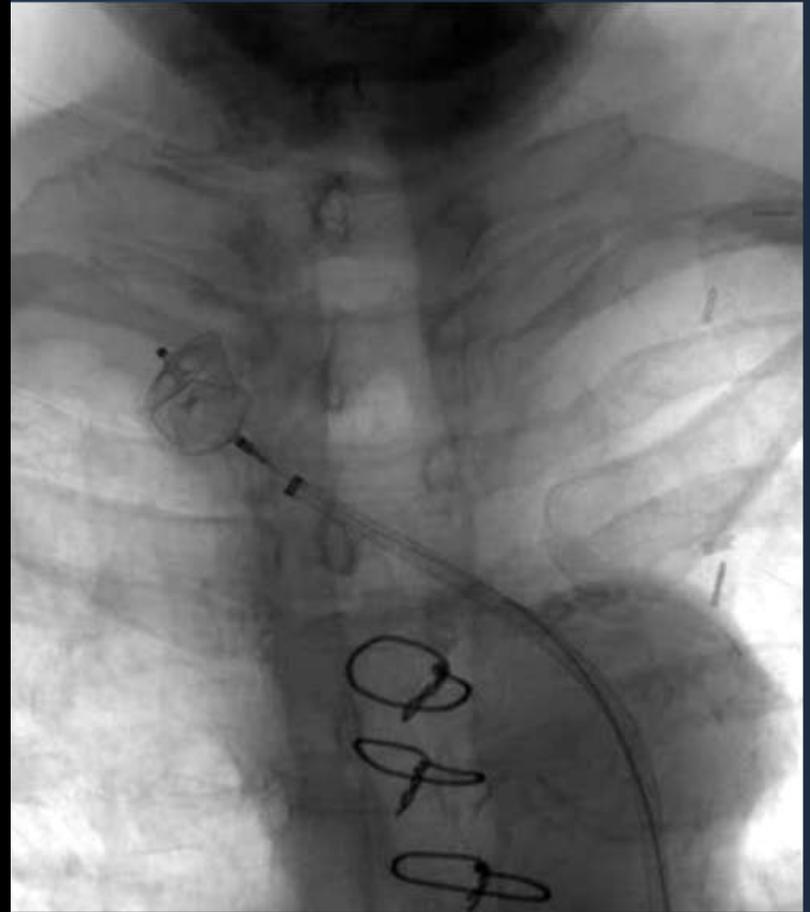
# Equipment & Procedure

- **Subclavia Lusoria Aneurysm occlusion with 2 Amplatzer Vascular plug II:**
- **Distal 14mm diam x 10mm**
- **Proximal 22 mm diam x 18 mm**
- **(AGA Medical Corporation)**

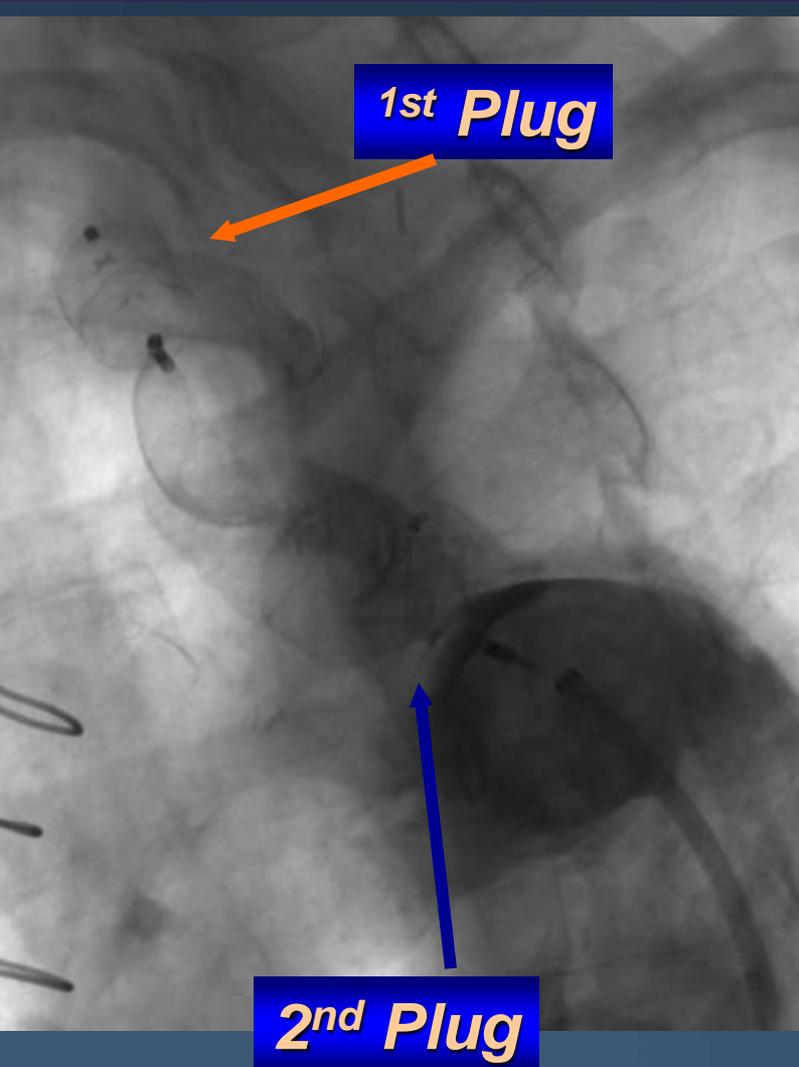


# 14 x 10 mm Amplatz plug II

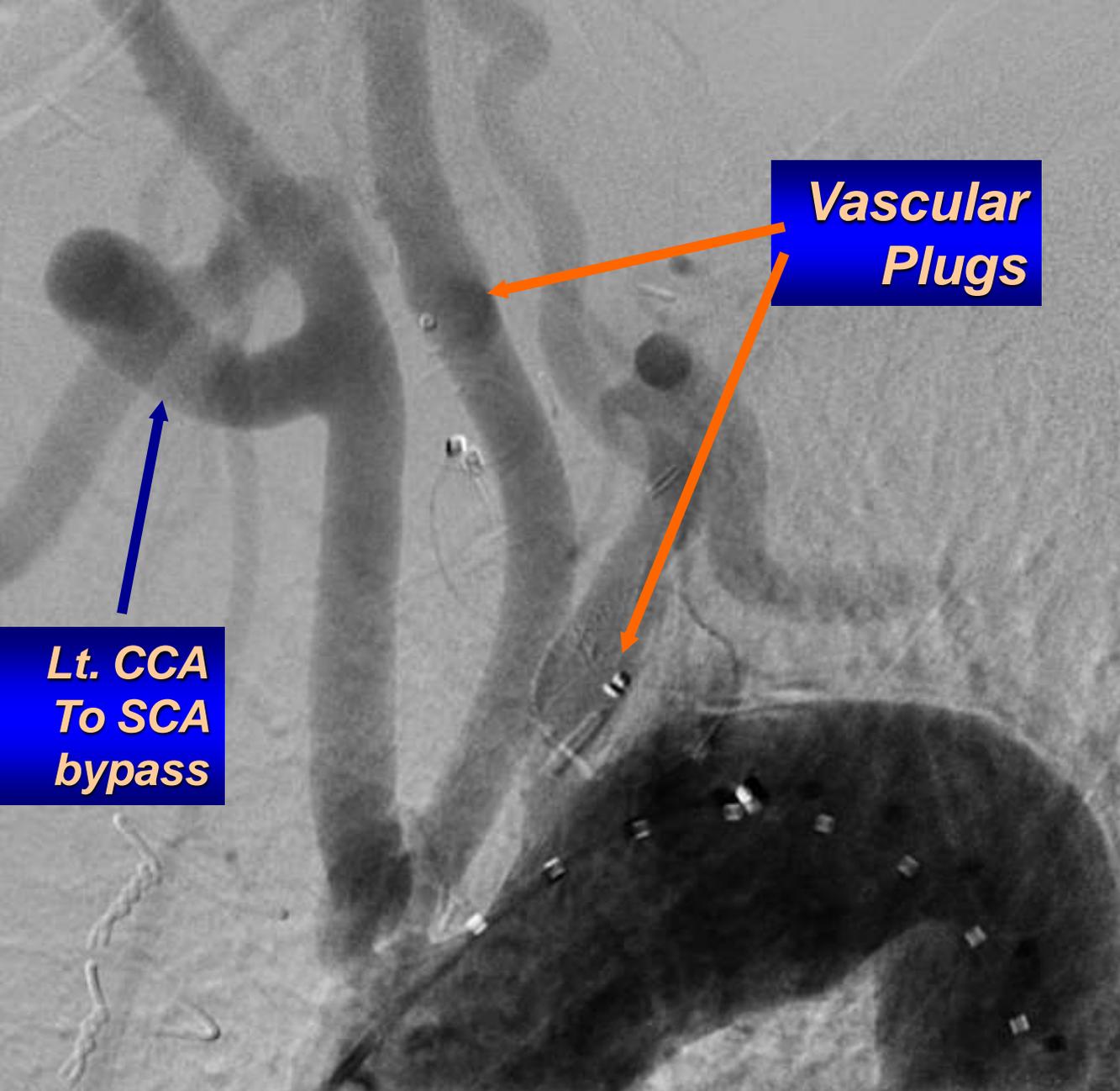
Lowy Compression - not indicated for diagnosis



# 22 x 18 mm AGA Vascular Plug II distal scallop is positioned in the arch



# Final Angio

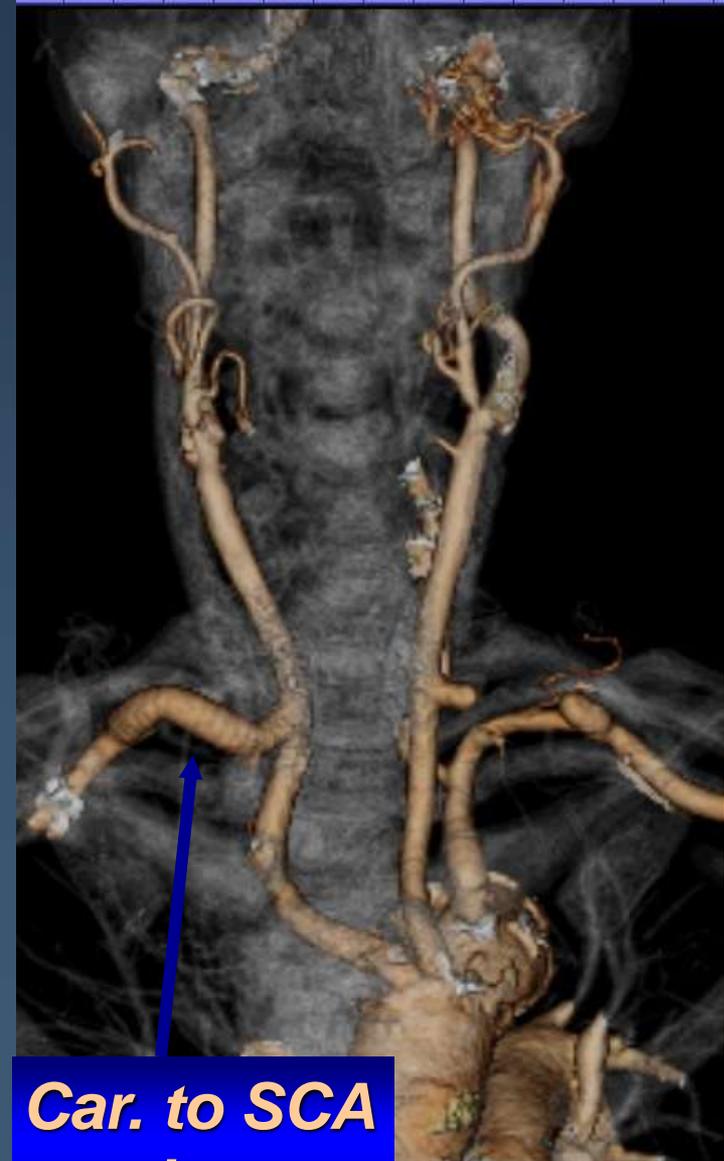


**Lt. CCA  
To SCA  
bypass**

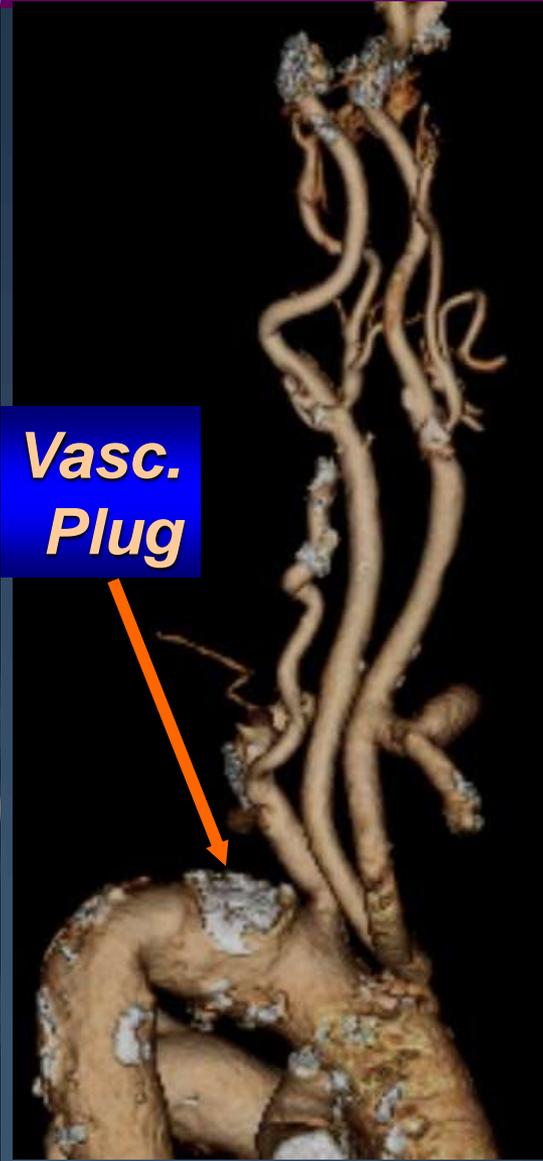
**Vascular  
Plugs**

- D/C on POD #1
- No events upon follow-up

# Follow-up CT Angio at 1 month



**Car. to SCA  
bypass**



**Vasc.  
Plug**



**Vasc.  
Plug**

# Conclusion

- **Access problems are not uncommon with current generation TAA endografts (most require 22-24F sheaths!)**
- **This problem is more common in females!**
- **Proper pre-procedural planning for the best access is mandatory! (Iliac conduit!)**
- **“Pave & Crack” technique does not always work!**
- **Be aware of potential, spasm, dissection, rupture, evulsion & retroperitoneal bleeding!**

# Conclusion

- **Subclavia Lusoria aneurysm is an uncommon condition, rarely treated with endovascular approach**
- **Proper surgical and endovascular strategy is essential to achieve good results**
- **Vascular plugs can be used for excluding inflow and outflow of unusual aneurysms**
- **This innovative approach can be of great benefit to patients that are at high risk for surgery**

# Question & Answer

- **For Questions:**  
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