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VIRGINIA HEALTH SCIENCES

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Direct Transthoracic Sac Embolization for Thoracic Endoleak After TEVAR

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Disclosures

- Dr. Rathore
 - Consultant, Medtronic
- All other authors report no disclosures

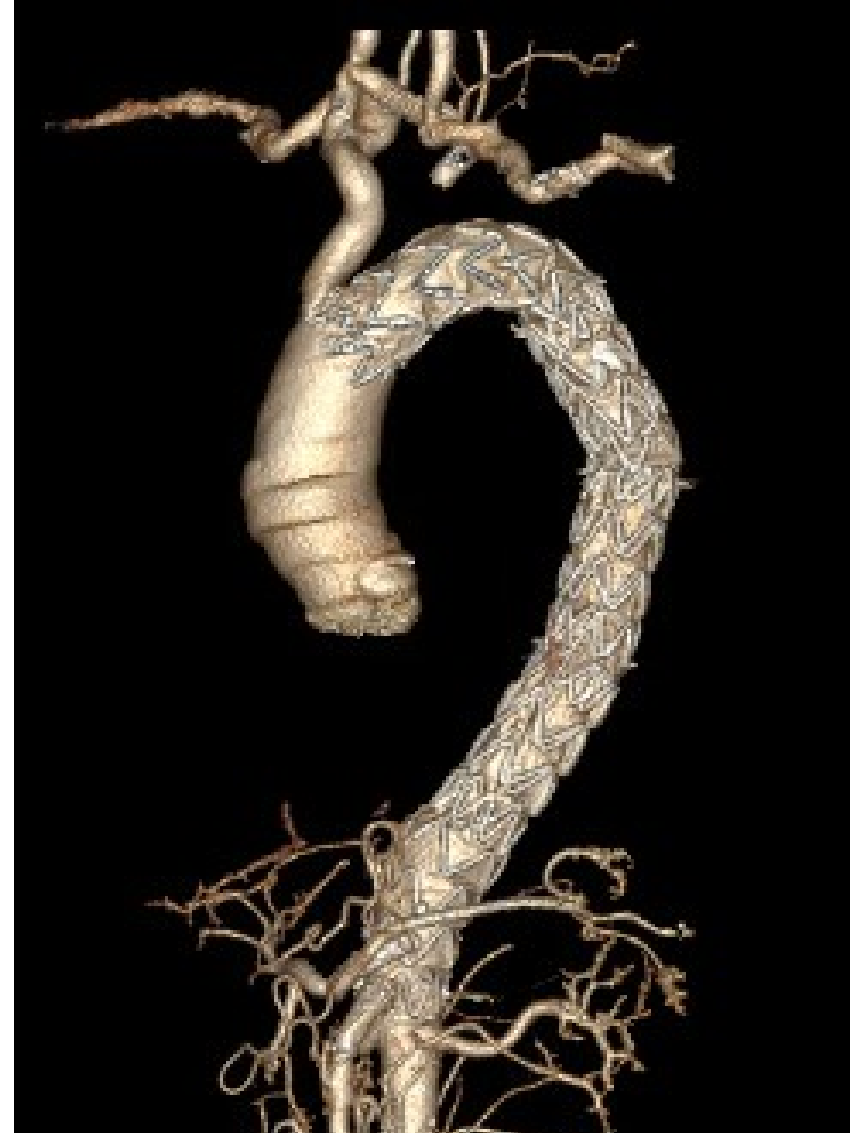


Background

- Incidence of endoleaks (EL) after TEVAR
 - T2EL after TEVAR: 8-10%
 - Most commonly from left subclavian, intercostal, and bronchial vessels
- T2EL intervention indication
 - Spontaneous resolution occurs in over 50% of cases
 - Intervention indicated for sac expansion >5mm or symptomatic EL
- Management
 - Endovascular transarterial embolization vs. perigraft approach for glue embolization
 - Direct sac puncture well-defined for EVAR but has not been previously described for TEVAR

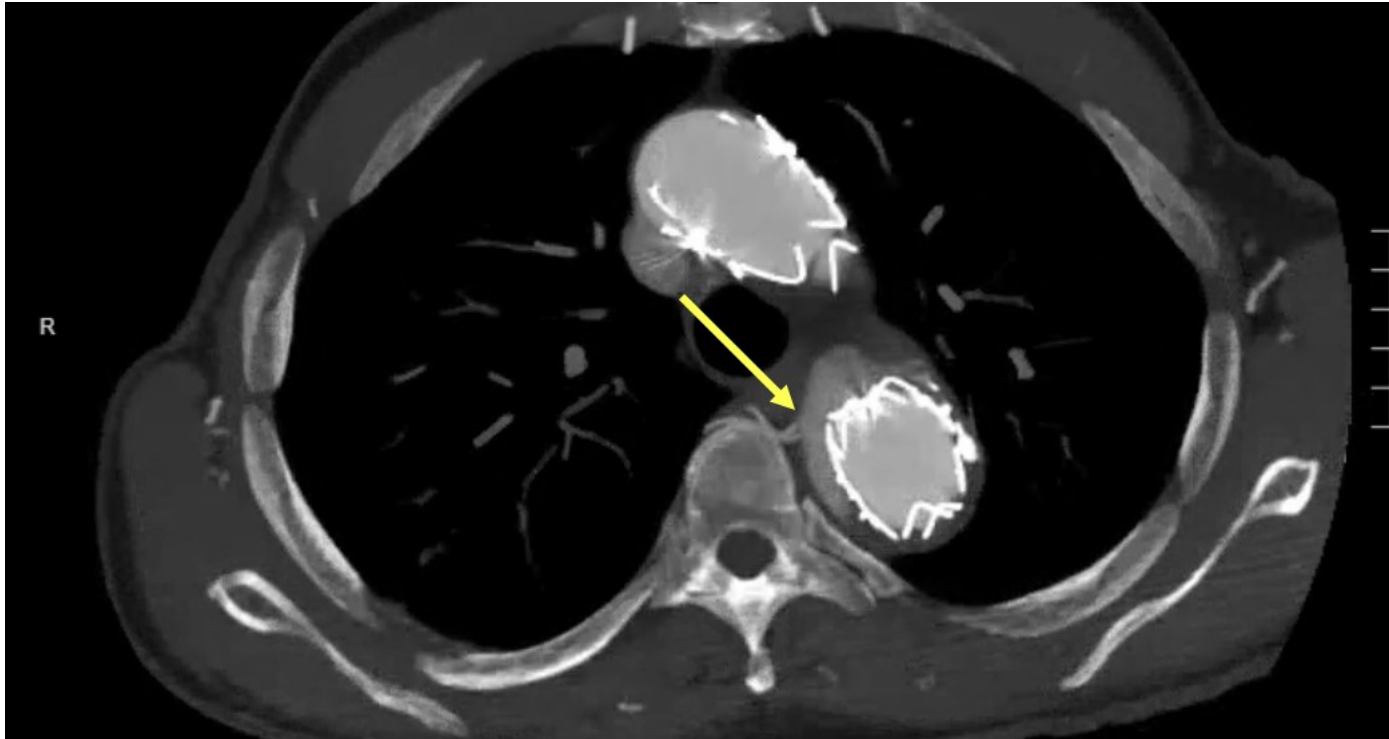
Patient Presentation

- 66-year-old M
- Staged Type 1 TAAA repair 3 years prior
 - Left hemiarch debranching
 - Zone 1 TEVAR with distal extension
 - Antegrade in situ laser fenestration of celiac artery and SMA
- EL noted with sac enlargement from 6 to 6.7cm over 6 months



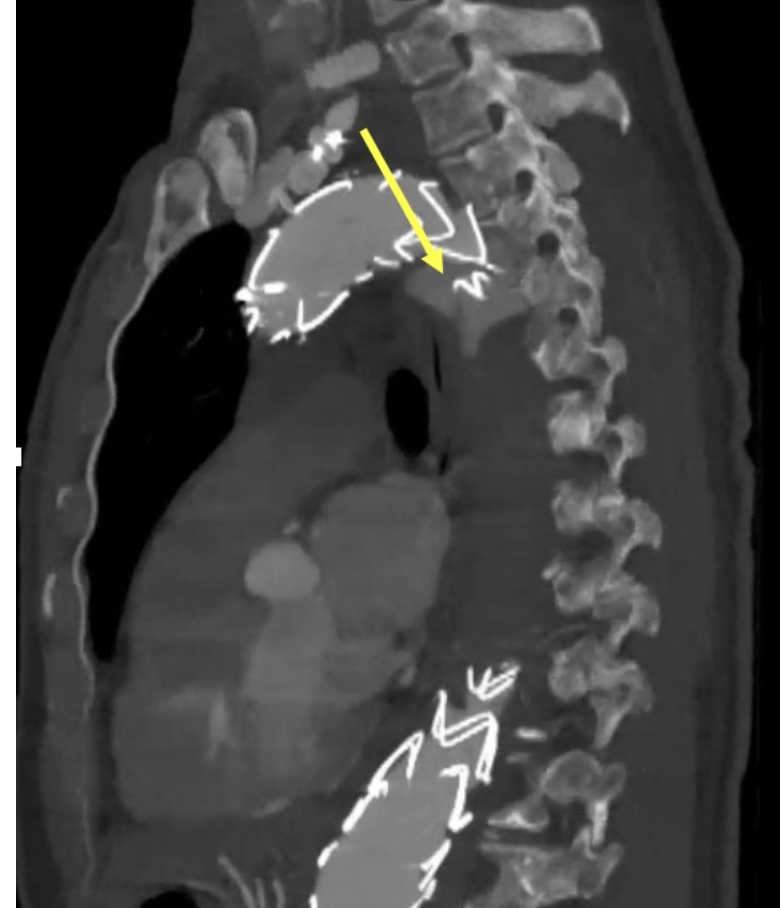
Patient Presentation

T2EL from bronchial vessels



Patient Presentation

- Imaging suggested T2EL rather than T1
 - Proximal and distal graft apposition

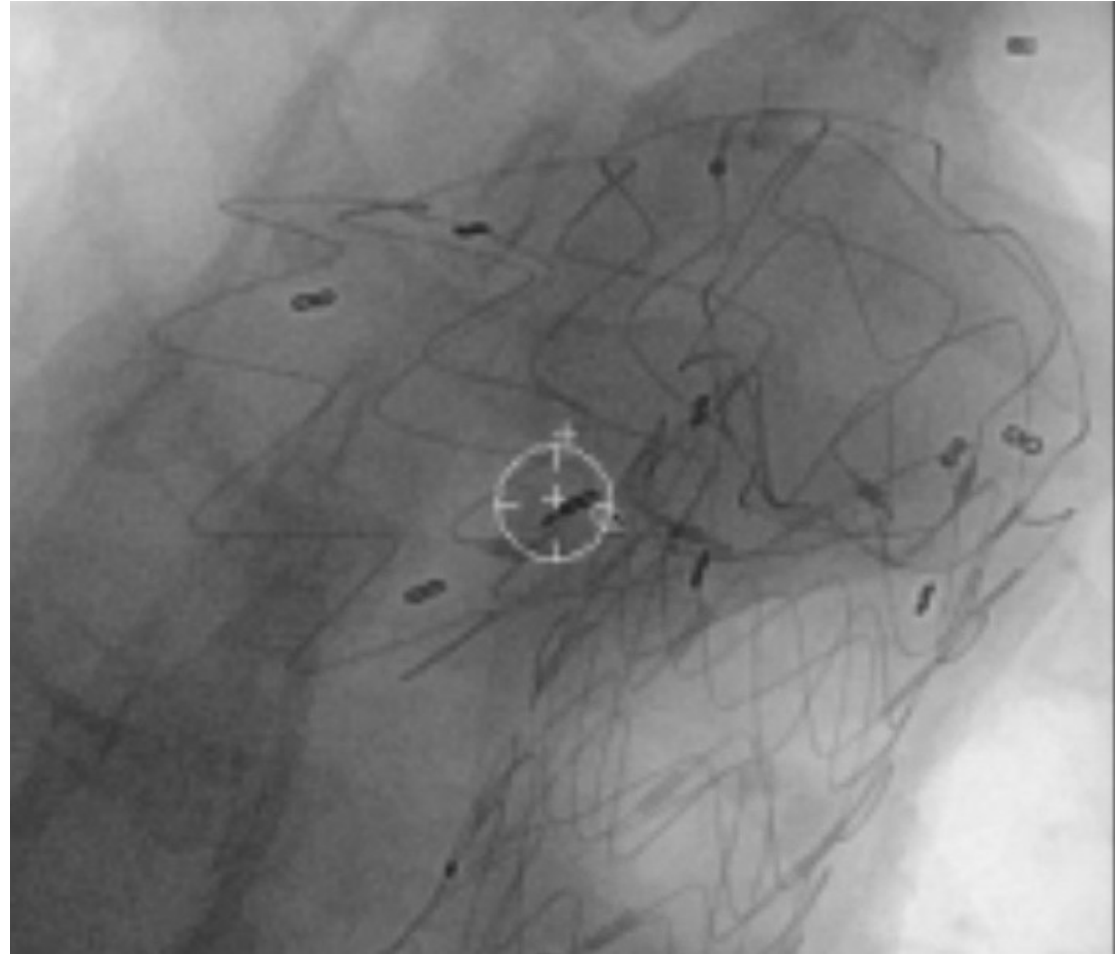


Decision Making

- Approach options
 - Transarterial: bronchial vessels tortuous, small caliber and difficult angles, no direct pathway to bronchial arteries
 - Perigraft: risk of dissecting aorta, long distance
 - Transthoracic: not previously described however translumbar approach for EVAR has been described with safe posterior sac puncture in abdominal aorta
- Percutaneous transthoracic management was pursued
- Multi-disciplinary approach involving vascular surgery and IR

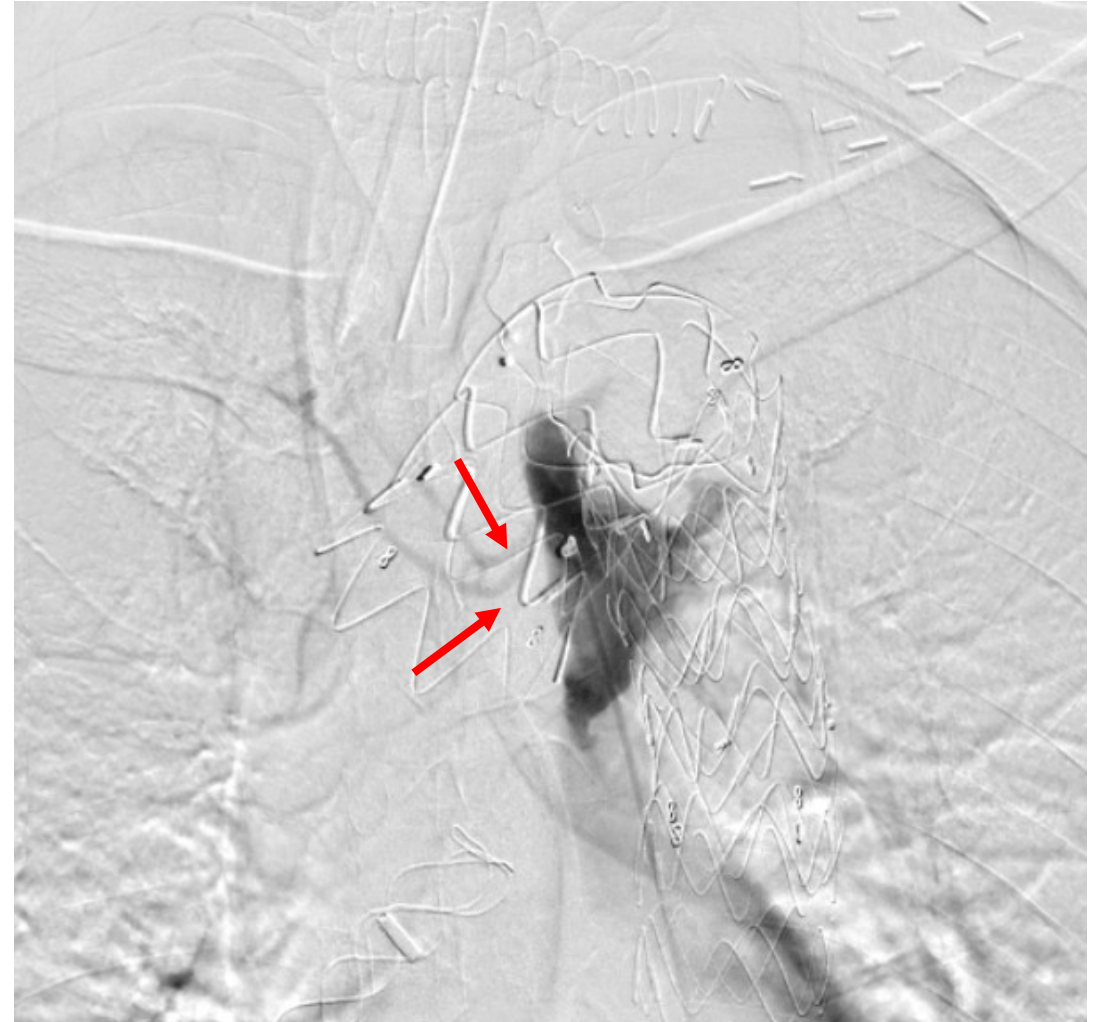
Procedure

- In the prone position, cone-beam CT and preoperative CTA was fused for needle guidance



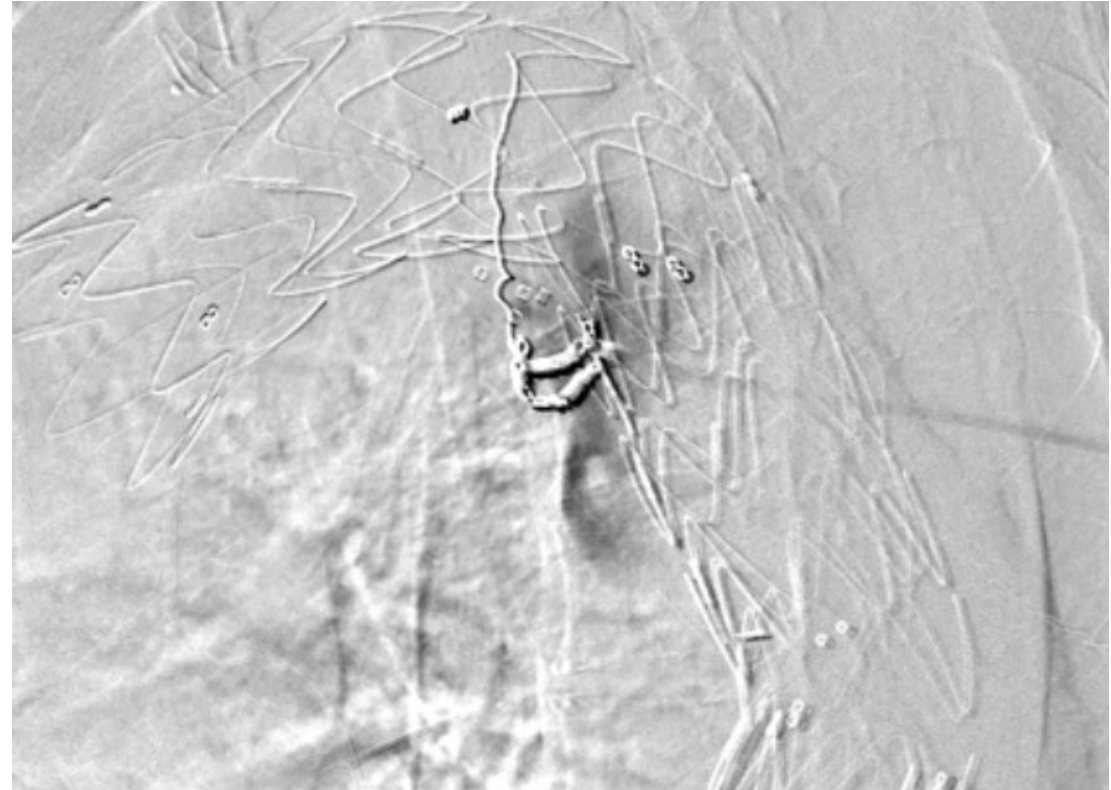
Procedure

- 21-gauge micropuncture needle advanced into sac, 5 Fr sheath inserted after confirmation
 - Direct sac angiography confirmed T2EL from two bronchial arteries



Procedure

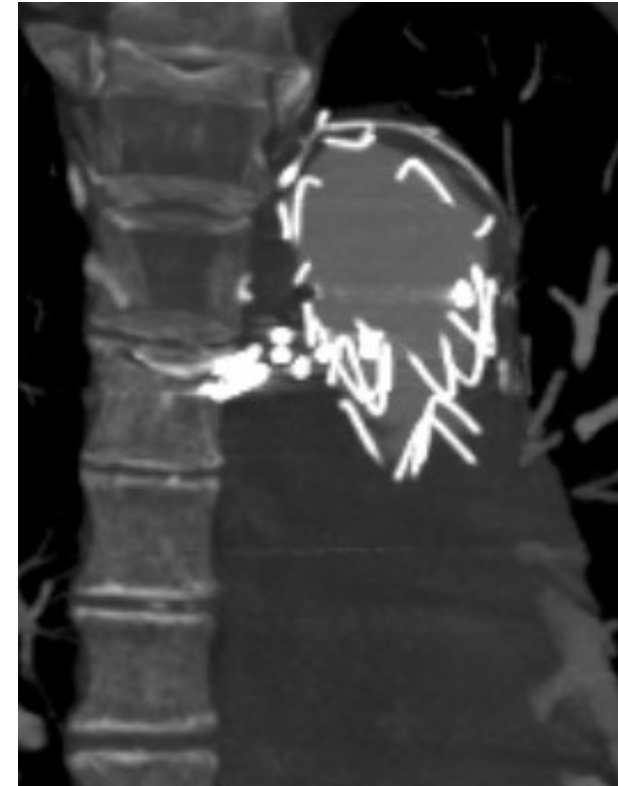
- Selective catheterization using microcatheters
- Embolization
 - 3x15 Ruby coils
 - IMPEDE Embolization Plugs after coiling
 - Gelfoam was used to fill the sheath track as it was removed



Results

- Completion angiography confirmed successful occlusion of feeding vessels and EL resolution
- Patient tolerated procedure well
 - No immediate complications or pneumothorax, discharged same day
- 1-year follow-up CT showed stable aneurysm sac and no ongoing EL

1-Year Post-Op Imaging



Transthoracic Endoleak Embolization

- Novel and feasible technique for T2EL repair for thoracic aneurysm with no option of transarterial access
- Careful anatomic planning
 - Clear window required
 - Imaging fusion
- Risks
 - Pneumothorax, hemothorax, non-target embolization



**Questions
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