Peri-Arterial Sac Embolization (PASE) to Treat Endoleaks: Technical Tips and Results

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Endoleaks after EVAR:
- May not be detected on angiography
- If undetected, may require secondary intervention
- When seen, increase contrast load to define and resolve
- Are often difficult to classify (I vs. II vs. III)
- Presence of type II endoleaks increase cost due to more frequent imaging on f/u

No disclosures

Intra-aneurysm injection (Sacogram)

Type I endoleak after cuff placement

Post op CT after Proximal Cuff and Induced AAA Thrombosis
Type I endoleak - Sac access and induced thrombosis

F/U CTA post PASE

Pre op
Post op

Technique
- Access AAA sac with 0.035 wire/catheter
- Sacogram, ensure no T1b, confirm EI type with 0.035 wire/catheter
- Mix 5,000 Units Thrombin / 20 mL saline, ½ sheet gelfoam,
- 5 cc contrast
- Injected under fluoroscopy
- 3-5 mL aliquots
- Stagnation of contrast in sac, obliteration of pulse pressure

Catheter access to AAA Sac:
- Can be done after graft deployment between native iliac and endograft iliac limb regardless of time from implantation
  - angled catheter and glidewire
  - risk of dissection/perforation
- Before endograft deployment
  - Requires parallel catheter for dual access and limb deployment

Type III endoleak not resolved with PASE

• 13 patients – 5 at implantation, 8 during F/u
• Endoleaks – 7 type I; 2 type II
• One type I endoleak was type III on conversion
• No complications
• All type I endoleaks resolved; AAA stable or smaller on F/u (6-22 months)
• One type II leak persists with stable AAA

11/15/2017
**T2E on Surveillance**

69 M 66mm IR AAA
- 1/2013 – EVAR
- 12/2013 – 56mm
- 12/2014 – 68mm
- 1/2015 – PASE
- 11/2015 – 61mm, No EL
- 1/2017 – 54mm, No EL

**T1E following EVAR**

79 F 56mm AAA, OSH, T1E with 4mm IMA
- 10/2015 – EVAR
- 10/2015 – T1E
- 12/2015 – PASE
- 11/2016 – 39mm, no EL

**T2E following EVAR**

67 M 74mm AAA
- EVAR
- Patent lumbar
- PASE
- CT @ 1 yr
44mm, No EL

**Perigraft Arterial Sac Embolization (PASE)**

- 52 patients with enlarging AAA post EVAR
- 22 type I endoleaks; 86% success (19)
- 38 type II endoleaks; 74% success (28)
- 1 open conversions for type III endoleak
- 1 type III EL post FEVAR Rx with second renal stent
- No associated complications
- 100% no further AAA growth; 74% sac regression
- PASE at the time of EVAR(26) – 89% sac regression

**PASE = Aneurysm Sac Management for EVAR**

**Conclusions**

- Perigraft Arterial Sac Embolization (PASE) is an effective tool for treating low pressure and selective high pressure endoleaks
  - Sacogram helps to determine type of EL
  - Inexpensive, quick, and easy
  - Effective, safe, durable
- If done during EVAR, highly effective at preventing T2E
- May improve EVAR morbidity and cost