When can embolization techniques fix type 1 endoleaks after EVAR? Which Agents are Best?

**Technical Tips**

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When should embolization techniques be considered to fix type 1 endoleaks after EVAR?

When none of the conventional options are available
Anatomy, severe comorbidity

In practice, very few EL1 require embolization

**Disclosures**

Proctor/Speaker for Medtronic
Proctor/Speaker for Penumbra

**Embolization for Type 1 Endoleaks post EVAR**

**TECHNIQUE**

- Assess CTA for access route into endoleak
- Use Femoral Access if possible
- Catheterize endoleak with 5Fr Reverse Curve Catheter
- Sim1
- Perform endoleakogram
- Advance microcatheter into deepest recess of endoleak
- Embolise with selected embolic agent

EL1a embolized with ONYX

EL1a embolized with Detachable Coils
**Embolization for Type 1 Endoleaks post EVAR**

**Management and Technical TIPS**

- Embolize from *distal to proximal*
- Don’t overdo it – *beware of embolic agent misplacement* into aorta
- Consider embolization for *palliation* if no definitive management option possible

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**Avoid large endoleak cavities**

Or... Try to embolize entrance to EL1 and not the cavity

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**Avoid large endoleak communications with the aorta**

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**Avoid endoleaks caused by endograft inferior migration**

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2013 2017

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**July 2017**

EL1 was embolized and both endografts were extended superiorly

**July 2018**

Further migration and recurrent EL1a

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**WHICH EMBOLIC AGENTS ARE BEST?**

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Coils vs Liquids vs Others vs Combination

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**SUMMARY 1**

Embolization *may fix* some proximal type 1 endoleaks *not treatable by standard methods*

In practice, *few* type 1 endoleaks *require embolization*

The *ideal embolic agent is not known*, although a *combination* of detachable *coils* and *liquid embolic* may be *optimal*.

**SUMMARY 2**

*Patient selection is critical* to optimize success and durability

Avoid *large endoleaks*, *large endoleak entrances*, and *endoleaks caused by migrating endografts*

*Recurrent endoleaks can be re-embolized* – but don’t expect durability.