Technical considerations for use of EndoAnchors in complex EVAR and TEVAR
Disclosure

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I have the following potential conflicts of interest to report:

Consultant: Lombard Medical, Medtronic Inc, Volcano, WL Gore
Speakers’ Bureau: Medtronic Inc.
Scientific Advisory Board: Medtronic Inc.
EndoAnchors in CEVAR & TEVAR

Indications

Prophylaxis
- Severe Angulation
- Difficult landing
- Component separation

Therapy
- Migration/Type 1 Leak
- Birdbeaking
- revision
Contraindications

To Lock Graft to the Aorta, EndoAnchors Must *Penetrate* Aortic Tissue

Areas to avoid:

- Mural thrombus >2mm thick and 180° of circumference
- Porcelain aorta (severe circumferential calcification)
- Loss of graft apposition with resulting gap
- Attaching endograft layers without aortic wall penetration
Therapeutic Procedure

Therapeutic use for proximal type I endoleak 1 yr after TEVAR & 4 vessels FEVAR for Type I TAAA
EndoAnchors in CEVAR & TEVAR

Therapeutic Procedure

Redo TEVAR with Left CCA Laser Fenestration and residual type Ia Endoleak
Placement of Endo Anchors at inner curvature for type I endoleak

Therapeutic Procedure

Deployment of a 3rd EndoAnchor at the inner arch

Completion Aortogram after EndoAnchors rescue
Aptus Heli-FX Thoracic EndoAnchor System

**Recommended Heli-FX Guide Selection**

<table>
<thead>
<tr>
<th>Aortic Inner Diameter</th>
<th>18-28 mm</th>
<th>28-38 mm</th>
<th>38-42 mm</th>
</tr>
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<tbody>
<tr>
<td>Guide Tip Reach</td>
<td>22 mm</td>
<td>32 mm</td>
<td>42 mm</td>
</tr>
</tbody>
</table>

18Fr OD, 90cm working length

16Fr OD, 62cm working length

Images courtesy of National Institute of Health.
EndoAnchors in CEVAR & TEVAR

Procedural Technique: Guide size

Undersizing the Guide may lead to more difficult deployment at the inner arch, but may be useful in some circumstances such as outer arch deployment or in FEVAR
EndoAnchors in CEVAR & TEVAR

Procedural Technique: outer arch deployment

Easy Zone 1

Tricky Zone 1
Procedural Technique: deployment angle

Bad angle of attack

Good angle of attack
Procedural Technique: advanced deployment

Ascending aorta deployment in RAO view

Side arch deployment in barrel view
Procedural Technique: antegrade deployment

Arch aneurysm requiring sternotomy and total arch debranching with antegrade TEVAR
Antegrade deployment of posterior EndoAnchors zone 0
EndoAnchors in CEVAR & TEVAR

Completion angiogram

3D CTA @ 6 months
83 y.o. male patient with 7cm Pararenal AAA after failed EVAR from progressive neck dilation and migration treated by 4 vessels FEVAR with EndoAnchors
Procedural Technique: aortic angulation

Balloon assisted deployment of Endo Anchors during FEVAR for type IV TAAA with aortic angulation
EndoAnchors in CEVAR & TEVAR

Procedural Technique: Top 10 Tips

1. Plan the case: Wishful thinking does not create a landing zone
2. Deliver the endograft accurately
3. Size the Aptus guide according to endograft size
4. Undersize the Aptus guide for outer arch or FEVAR
5. Gantry at 90° angle to applier also at 90° angle to the aorta
6. Deploy at proximal edge of the graft and at least 2-3 rows
7. Anchor the revision cuff to the primary endograft & aorta
8. Place the EndoAnchors close to the fenestrations or chimneys
9. Keep the fenestration/chimney stents wired & protected
10. Don’t start with the most challenging anatomy
EndoAnchors in CEVAR & TEVAR

Summary

The deployment of EndoAnchors during TEVAR or Complex EVAR is simple, intuitive and safe.

The learning curve is relatively short and experience allows deployment in more challenging anatomy.

Type I endoleak after total arch debranching and redo TEVAR resolved after zone 0 EndoAnchors
EndoAnchors in CEVAR & TEVAR
Technical considerations for use of EndoAnchors in complex EVAR and TEVAR

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