Technique of EndoAnchors Placement during TEVAR: Indications and Results

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EndoAnchors & TEVAR

Indications

- Severe Angulation
- Difficult landing
- Hostile Necks
- Migration/Type 1 Leak
- Prophylaxis

Therapy

78 y.o. female patient Presenting with severe upper back pain Prior ABI graft for AAA Symptomatic 7.5 cm DTA

Prophylactic Procedure

TEVAR after hemiarch debranching with a right CCA to LSA bypass with left CCA transposition Direct right iliac access

EndoAnchor deployment in ascending aorta

EndoAnchors & TEVAR

Disclosures

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

**Prophylactic Procedure**
- 4 distal EndoAnchors
- No endoleak after 23 months

**EndoAnchors & TEVAR**

**Therapeutic Procedure**
- Therapeutic use for proximal type I endoleak 1 yr after TEVAR & 4 vessels FEVAR for Type I TAAA
- Redo TEVAR with Left CCA Laser Fenestration

**EndoAnchors & TEVAR**

**Therapeutic Procedure**
- Placement of Endo Anchors at inner curvature for type I endoleak
- Discharged after 3 days

**EndoAnchors & TEVAR**

**Therapeutic Procedure**
- Final Completion Aortogram after EndoAnchors rescue
- Postoperative CTA at 12 months
- No Stroke
**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

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**Experience in TEVAR & CEVAR**

- N = 78 procedures
- TEVAR, FEVAR, ChEVAR

- N = 39
  - TEVAR
  - FEVAR or ChEVAR

**Study Population:**
- Mean age = 72.9 years
- Male gender = 59 (76%)
- Started in Dec 2012
- Mean follow up = 248 days

**Treated for:**
- Arch / DTA 21
- TAAA 36
- Para / Juxtarenal AAA 17
- AAA hostile neck 4

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**Procedural Indications**

- N = 78 procedures
- TEVAR, FEVAR, ChEVAR

- N = 36
  - Index procedure

- N = 42
  - Redo procedure

- N = 32
  - Prophylactic

- N = 4
  - Therapeutic

- N = 28
  - Therapeutic

- N = 14
  - Prophylactic

**Therapeutic indications:** 27 type Ia; 2 type Ib; 3 type III

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**Procedural Success**

Total of 764 Endo Anchors were deployed (9.8 / pt)

**Procedural Indication Zones**

<table>
<thead>
<tr>
<th>Zone</th>
<th>No. of Endo Anchors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zone 0</td>
<td>12</td>
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<tr>
<td>Zone 1</td>
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<td>Zone 8</td>
<td>132</td>
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<td>Zone 9</td>
<td>98</td>
</tr>
</tbody>
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**Endoanchors retrieval:**
- 0.39% (N=3)
- 2 by snare technique
- 1 retrieval with Aptus system

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**Procedural Outcome**

- N = 46
  - Prophylactic

  - 2.2% Endoanchor related reintervention

  - 1 type Ia endoleak

  - No migration

- N = 32
  - Therapeutic

  - 12.5% Endoanchor related reintervention

  - 4 recurrent Type Ia endoleaks

  - No migration

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**Summary**

During or after TEVAR, the prophylactic use of EndoAnchors was associated with the absence of late type I endoleak, however longer follow up is needed to better evaluate its role.

The therapeutic use of EndoAnchors at the time of the index procedure and especially for redo procedure can eliminate type I or III endoleaks but their durability remains to be seen.

Type I endoleak after total arch debranching and redo TEVAR resolved after zone 0 EndoAnchors.