Onyx To Treat Type 2 Endoleaks: Technique And Precautions To Do It Safely And Effectively And Be Sure It Gets Into The Nidus

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Type II Endoleak: Embolization of the Nidus

- Obliteration of the “nidus” is key to sustained T2E repair
- MUST GET TO THE NIDUS

- Most common techniques
  - Transarterial-TAE
  - IIA branch; SMA branch…
  - Translumbar-TLE
- Embolic agent
  - Onyx: non-adhesive liquid embolic agent (brain AVM*)
  - Ethylene Vinyl Alcohol Copolymer

TLE-Translumbar Embolization

Prone

Safe needle access for TLE is not always anatomically feasible due to location of the endoleak relative to IVC, bowel loops, kidney, bony structures

Results of transcaval embolization for sac expansion from type II endoleaks after endovascular aneurysm repair

- 29 TCE with coils in 26 patients via transfemoral venous access
- Clinical success in 70% at mean 16.5 mos
- No recurrent endoleak, stable or decreasing sac diameter
• The TGE technique utilizes laser energy to micropuncture the endograft via a transfemoral arterial approach to access the aneurysm sac at the precise site of the endoleak nidus, irrespective of its location.

CTA
- 3D location of leak
- Study all landmarks

Femoral access
- Rt vs Lt
- 6 F Guide
  - Cordis Vista brite tip
  - Tip perpendicular to graft
  - Aim at leak location

Graft puncture
- Photoablation
- Coronary ELCA catheter
  - Laser ablation catheters
  - 0.9 mm
  - Rx
  - 0.014 wire

Spectranetics CVX-300

Echelon 10 Micro catheter 2.1/1.7 OD
- 0.014 compatible, 150 cm usable length
- EV3
Laser-assisted TGE with Onyx

Case Presentation

Guide with 2D-3D Fusion
EVARVision (fusion overlay) overlays 3D datasets from CTA on live fluoro images

Angio: 1-2 cc

ONYX

Pre-embo

1 year post TGE

Post angio

7.4 cm

5.7 cm

Laser-assisted TGE with Onyx

Results

- From 03/2011-05/2017
- 33 patients referred for type II endoleak embolization
- Male: n=29; Female: n=4
- TGE with Onyx: n=32
  - One patient failed due to severe iliac tortuosity
    Successful TLE
  - Technical success: 31/32 (98%)
  - No major complication

- N=33
  - Deceased: n=5
  - Lost to FU: n=3

1 year CTA: n =21

<table>
<thead>
<tr>
<th>AAA size</th>
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<tbody>
<tr>
<td>Decreased (&gt;0.5 cm)</td>
<td>10</td>
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<tr>
<td>Stable</td>
<td>8</td>
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<tr>
<td>Increased (&gt;0.5 cm)</td>
<td>3</td>
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Decreased or stable: 86%
Type II Endoleak: Conclusion

- Whatever technique is preferred, MUST obliterate the nidus
- Onyx is the agent of choice, regardless of embolization technique
- TGE with Onyx is safe and effective
  - Allows for precise microcatheter access into the nidus of the endoleak, regardless of anatomical location