When a stab in the back works: Translumbar Type 2 endoleak embolisation

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Disclosure

Speaker name:

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I have the following potential conflicts of interest to report:

- Consulting: GE Healthcare
- Employment in industry
- Stockholder of a healthcare company
- Owner of a healthcare company
- Other(s): Bentley InnoMed GmbH

- I do not have any potential conflict of interest
Type II Endoleak

Incidence 10-50% (1y)

Growth > 5 mm

Indication for treatment

Growing aneurysm with type II

Rule out Type I or III

Transarterial

Translumbar

Open
Type II Endoleak (IMA)
Type II Endoleak (Lumbar)
Transarterial Embolization
Transarterial Embolization

Challenging Procedures

- Difficulties to identify In & Out Flow
- Complex IIA Catheterization
- Time/Dose-consuming

Alternatives

- Transcaval embolization
- Transsealing embolization
- Translumbar embolization
  - New Workflow with CBCT
Case #1 Description
Case #1 - Installation & initial CBCT

Under GA

200° spin
40°/sec
150 images

Wide-bore C-arm of Discovery IGS 730
Case #1 - CBCT/CTA Registration

**STEP 1**
Case #1 - Needle ASSIST Registration & Planning
Case #1 - Trajectory Planning

Needle ASSIST

Case #1 - Needle ASSIST Registration & Planning
Case #1 - Fusion-guided puncture & progression

Bull-eye View

Progression View
Case #1 - Needle ASSIST Fusion Guidance
Case #1 - Intermediate assessment

Needle ASSIST
Stereo 3D

Needle reconstruction onto preop CTA
Case #1 – Final assessment
Embolization

With Coils

With ethylene–vinyl alcohol copolymer

STEP 5
Case #2 description

- Patient has a past history of infra-renal EVAR, which presented a type II endoleak from IMA, this endoleak was treated endovascularly through SMA.
- More recently, a CTA is showing a second endoleak, originating from a lumbar artery.
Case #2 - CTA fused with the CBCT for Trajectory planning

Registration maximized at the graft level and calcifications
Case #2 - Bull’s eye & progress views with TrackVision 2

Needle advanced along the virtual trajectory
Case #2 - Stereo 3D / Registration check on 2 views
Case #2 - Stereo 3D / Automatic needle detection
Case #2 - Needle reconstructed in preopCTA space

Intermediate assessments performed with Stereo 3D, instead of CBCT
Case #2 - Embolization & Assessment
Comparison of results with literature

- **8 patients**
  - **Success rate**: 8/8
  - **Proc. Time**: 45 min
  - **Contrast**: <20mL

- **FU**: 36 months
  - **Clinical Success**: 7/8

**Unenhanced Cone Beam Computed Tomography and Fusion Imaging in Direct Percutaneous Sac Injection for Treatment of Type II Endoleak: Technical Note**

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**XX patients**

**Similar results**

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Carrafiello, Cardiovasc Intervent Radiol, 2016
Take Home Message

Translumbar Type 2 endoleak embolisation is safe & efficient
Faster than transarterial for lumbar embolization
Intermediate assessments with Stereo 3D instead of additional CBCT
Easy with Discovery IGS 730 with Needle ASSIST
Future applications?
Future applications?
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