EndoAnchors Can Improve the Outcomes of Difficult TEVARs: What is the Proof They Really Help and How to Use Them

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Improving Outcomes of TEVARs

What are Difficult TEVARs?
When you have to work harder When it doesn’t work or doesn’t last

Malapposition Structural failure Migration: 5-8% Endoleaks: 20-25% Reinterventions: 20-40%

What are the modes of failure

Can we predict TEVAR failures?

Freedom from aortic related reintervention Sensitivity=92% Specificity=50%

This novel anatomic severity grading system can successfully identify patients at increased risk of endoleak requiring reintervention following TEVAR for primary DTA

What is the Proof?

Can EndoAnchors treat an endoleak?

Anecdotal evidence: Is sufficient to answer YES

Case Series Longitudinal Analysis

Are needed to know in what types of anatomy and patients it would work and how durable it will be

Can EndoAnchors prevent an endoleak?

Anecdotal evidence is not useful And the current answer is that we do not know yet

Longitudinal Analysis Comparative Cohort Analysis (TEVARs with vs without EAs)

Randomized Controlled Trials

There is no level 1 evidence
Proximal type I endoleak 1yr after zone 2 TEVAR & 4 vessels FEVAR for TAAA.

Persistent endoleak after redo TEVAR zone 1 Arch study before redo.
Resolved endoleak after EndoAnchor rescue.

What is the Proof?
Anecdotal Evidence for redo TEVAR

Resolved endoleak after EndoAnchor rescue.

What is the Proof?

Case Series of Difficult TEVARs

1506 pts with thoracic aneurysm
88 pts with TEVAR for primary DTA
20 pts with TEVAR and EA
43 pts with high ASG scores (>24)

To evaluate outcomes of high ASG score patients with index TEVAR who were repaired without or with prophylactic EndoAnchors (EA)

What is the Proof?

Cohort Comparison

Outcome of 63 TEVAR for DTA with high ASG scores without vs with EndoAnchors

All (N=63) vs EA (N=20)

Technical Success
Reintervention
Type 1 Endoleak
30 day mortality
Late aortic related mortality

What is the Proof?

Cohort Comparison

Recommended Heli-FX Guide Selection

Aortic Inner Diameter
18-28 mm
28-38 mm
38-42 mm

Guide Tip Reach
22 mm
32 mm
42 mm

How to use them?

Deployment: all about the angle of attack
The Guide and Applier must be positioned at a perpendicular angle to the aortic wall.
How to use them?

Placement of EndoAnchors at the inner curvature of the arch

Prophylactic indication: preventing upward migration

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Summary

EndoAnchors can improve TEVAR outcomes by treating endoleaks and graft malapposition and by preventing endoleaks and graft migration.

The proof that EndoAnchors can improve the outcomes of difficult TEVARs has been substantiated by anecdotal evidence, case series and comparative cohort analysis.

To decrease the need for aortic reinterventions after TEVAR, EndoAnchors are best used at the inner curve of the arch to treat or prevent type Ia endoleaks and at the distal end of the graft to prevent cephalic graft migration and type Ib endoleaks.

Preoperative planning for EndoAnchors positioning

Correlation between 3D CTA, clock positions and gantry in LAO / RAO & CRA / CAU angles

Procedural Technique: advanced deployment

Ascending aorta deployment in RAO view

Side arch deployment in barrel view

EndoAnchors & TEVAR

Easy Zone 1

Tricky Zone 1

Procedural Technique: outer arch deployment

Undersize the guide for the outer curvature