

Techniques to Improve EVAR for rAAA

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Disclosure

- I have no current relationships with commercial entities

Arterial Access

Approach

- Percutaneous transfemoral access with local anesthesia
- Femoral cutdown at end of case or upfront for repeated interventions



DRYSEAL Flex Introducer Sheath (GORE)

Sheath

- Diameter 12-16F (>12F compatible with 120 cm Coda, 100 cm Reliant balloons)
- Length 45cm sheath advanced to supraceliac aorta

Sheath Size (Fr)	Minimum Sheath ID (mm)	Nominal Sheath OD (mm)	Working Length (cm)
16	5.3	6.1	33
16	5.3	6.1	65
18	6.0	6.7	33
18	6.0	6.7	65

Proximal Aortic Occlusion

Aortic Occlusion Balloons

- Aortic occlusion balloon placement in supraceliac abdominal aorta
- Sheath to hold balloon in place, to be secured by team member

Maximum Inflation Diameter (mm)	Catheter Size (Fr)	Working Length (cm)	Sheath Compatibility (Fr)
Reliant Stent Graft Balloon Catheter (Medtronic)			
46	8	100	12
Coda Balloon Catheter (Cook)			
32	9	120	12
46	10	140	14

Bifurcated vs. Aorto-Uni-Iliac Stent Grafts

Aorto-bi-iliac Graft (ABI)

- Preferred in hemodynamically stable patients
- Lower postoperative complications and length of hospital stay compared to AUI in unruptured infrarenal AAA (Tang 2013 *J Endovasc Ther*)
- Similar rate of all-cause mortality and rate of secondary interventions compared to AUI (Tang 2013 *J Endovasc Ther*)

Aorto-uni-iliac Graft (AUI) with Femoro-femoral Bypass

- Limitation to expeditious contralateral gate cannulation
- Significant unilateral occlusive disease or tortuosity
- Maintenance of at least 1 hypogastric artery

Poll Question

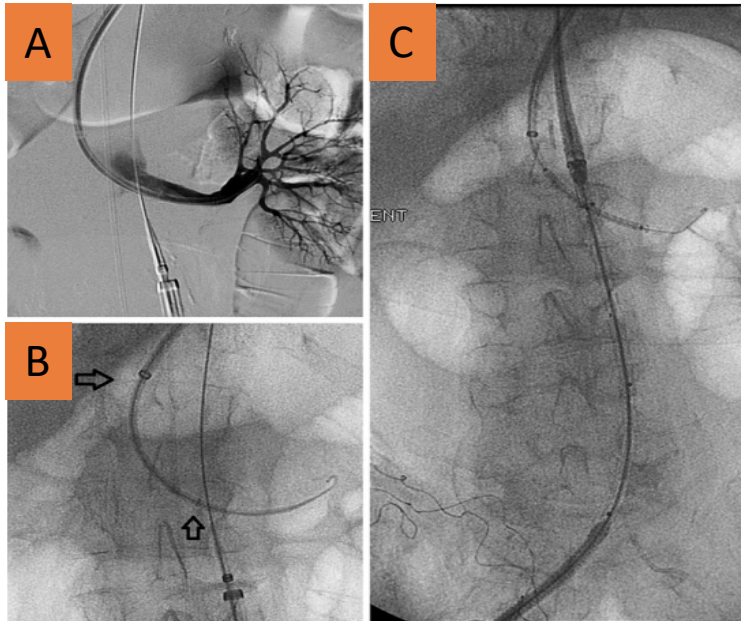
What endovascular adjunctive techniques have you used in previous cases of ruptured infrarenal AAA?

- A. Chimney technique
- B. EndoAnchor proximal fixation
- C. Pave-and-crack technique
- D. Contralateral snare cannulation technique
- E. Others
- F. None of the above

Adjunctive Techniques

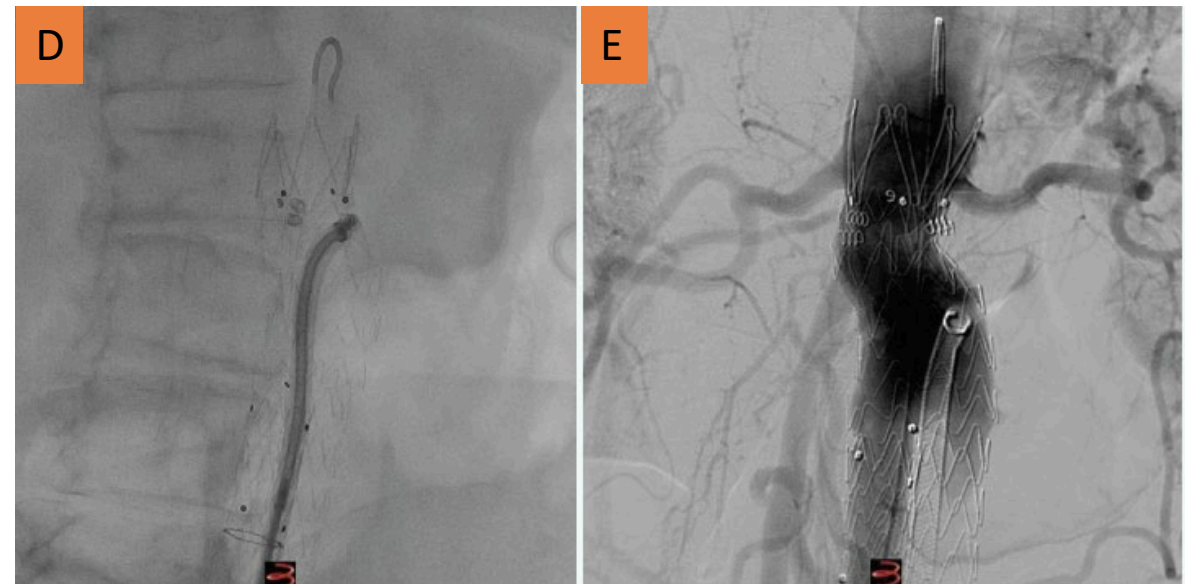
Hostile Proximal Neck Anatomy

- Chimney Technique



Advanta V12 (Getinge) Placed Parallel to Aortic Endograft
(Patel 2013 *Cardiovasc Intervent Radiol*)

- Endoanchors



Heli-FX EndoAnchor System (Medtronic Vascular)
(De Vries 2016 *Endovascular Today*)



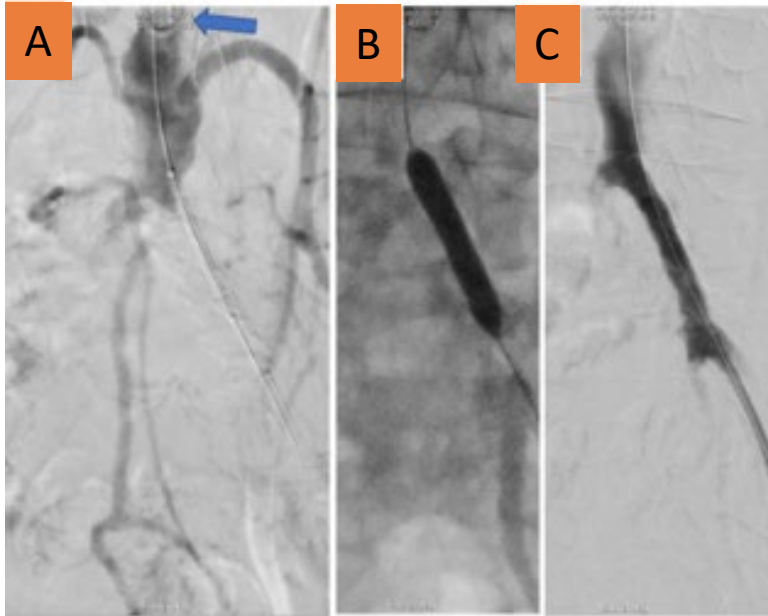
Adjunctive Techniques



Adjunctive Techniques

Hostile Distal Iliac Anatomy

- Pave-and-crack technique



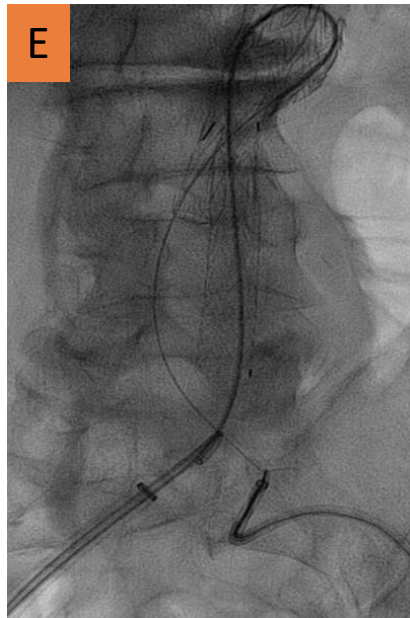
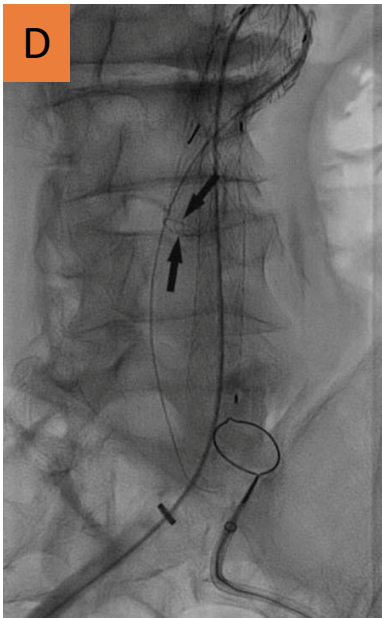
VIABAHN VBX Balloon-Expandable Covered Stents
(GORE) Implanted into CIA (Giusca 2021 *Eur Heart J*)

- Creation of endoconduit in cases of calcified and tortuous iliac arteries to facilitate stent graft delivery
- Involves predilation of target vessel, placement of balloon expandable covered stent, and dilation with pressure balloon

Adjunctive Techniques

Difficult Contralateral Gate Cannulation

- Contralateral snare cannulation technique



- Snare approach via contralateral femoral or brachial access
- Following full deployment of the main body, guidewire is passed through the contralateral gate and captured using a snare

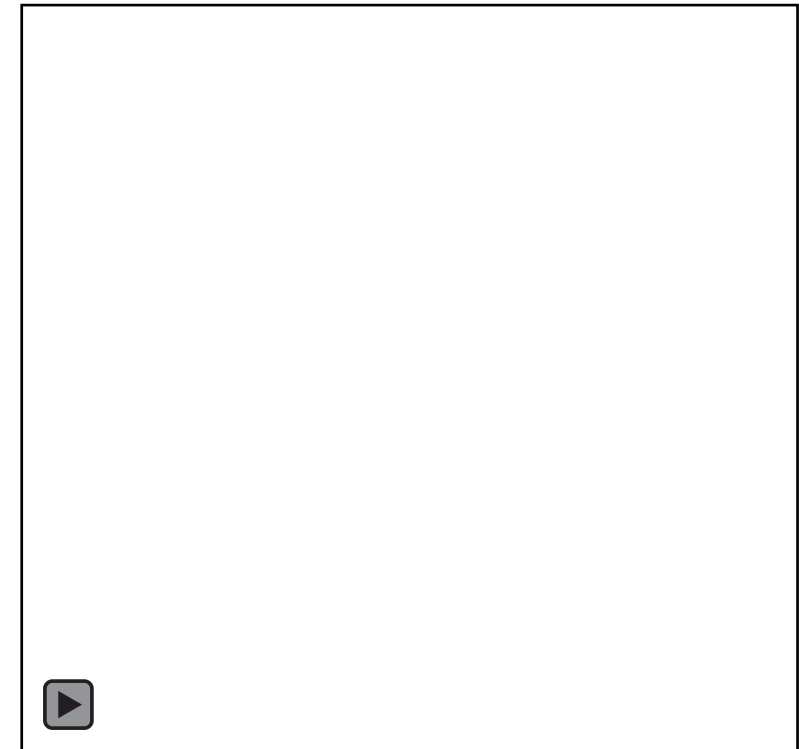
Amplatz Goose Neck (Cook Medical) (*Sena 2023 J Clin Med*)



Case – rAAA following EVAR

Mr. J. V.

- ID: 83M
- PMHx: DLP, HTN, CAD, GERD
- 2010 – Previous EVAR at external institution for infrarenal 6cm AAA (Medtronic Endurant), no signs of endoleak over 2 years of surveillance
- 2023 - Contained rupture, sac enlargement (6 to 10 cm), separation of right iliac limb from the main body of the graft requiring limb extension
- 2024 - Presented to the emergency department with abdominal pain, syncope, and hypotension



Overall

- Percutaneous transfemoral access with local anesthesia and early proximal aortic occlusion can lead to favourable outcomes following rAAA
- Adjunctive techniques for proximal aortic management such as Chimney procedures, EndoAnchors, and fenestrated stent-grafts address hostile necks
- Pave-and-crack techniques can help in tortuous and calcified iliac anatomy and snaring can help with contralateral gate cannulation
- Special considerations are required for patients with rAAA following EVAR

Thank you!



McGill