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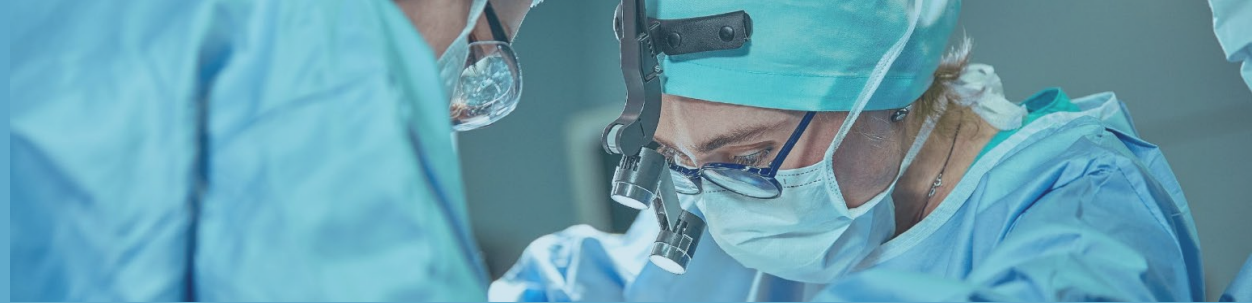
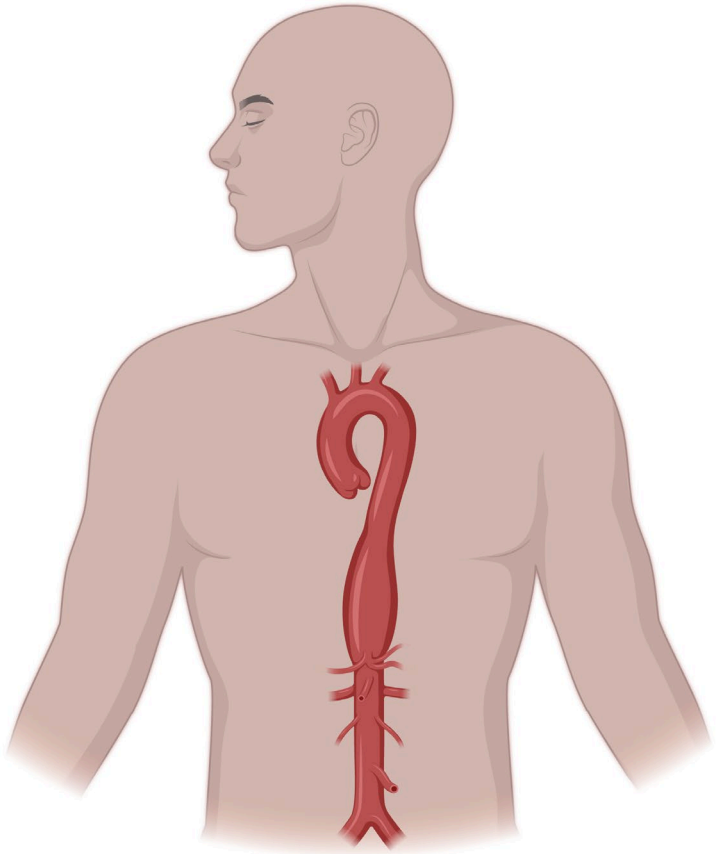


Audience of the Expert: Aorta Case Presentation



Presented by: Sneha Raju MD PhD
(University of Toronto)

Winnipeg Vascular & Endovascular Symposium
April 3-5, 2025

WVES | Winnipeg Vascular & Endovascular Symposium

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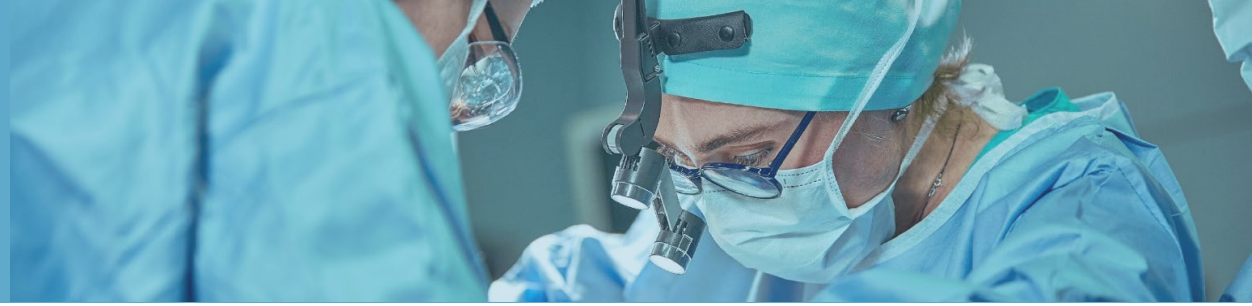

Presenter Disclosure

Presenter: Sneha Raju

I have no current relationships with commercial entities

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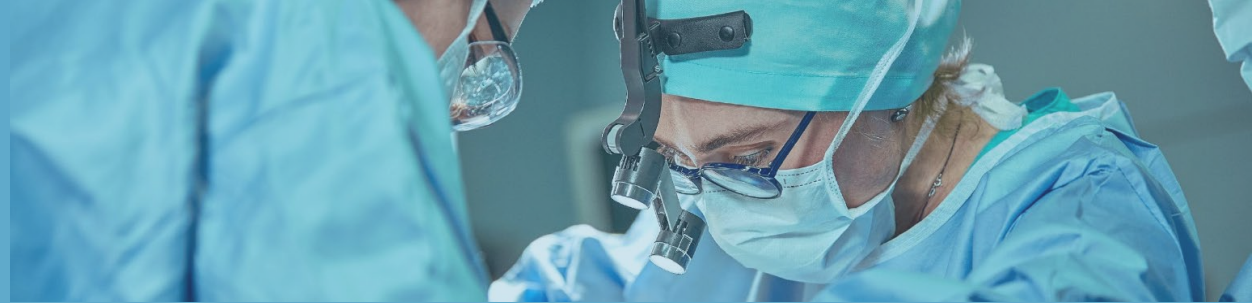
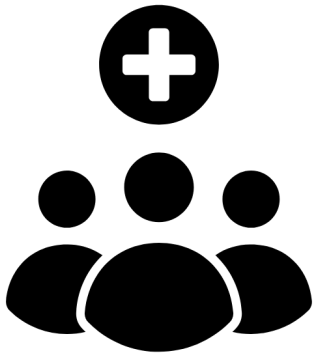
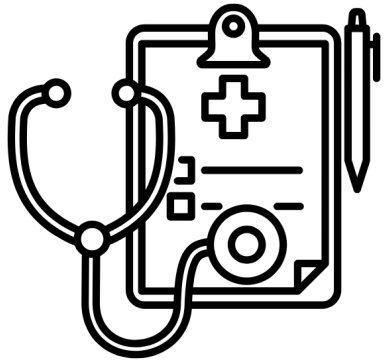


Let's get to know Mr. DY: Chronic TBAD



54 ♂
BMI:23



CKD
TBAD (Myh11 mutation)
HTN
Trigeminal neuralgia
Prior smoker

Bisoprolol
Rosuvastatin
Carbamazepine

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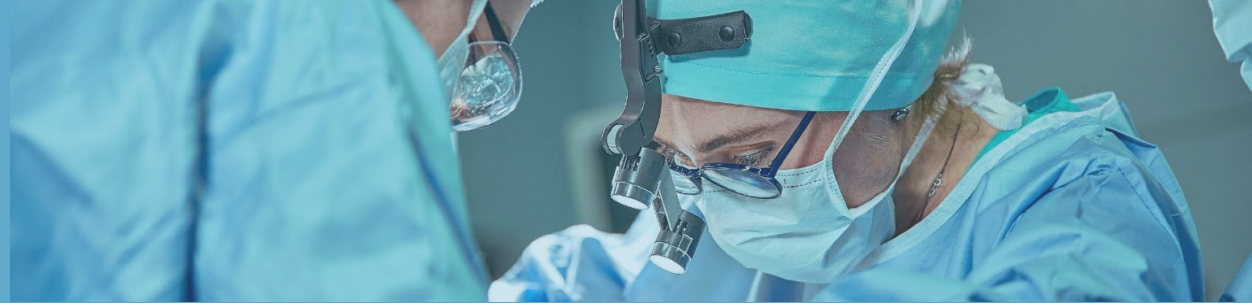
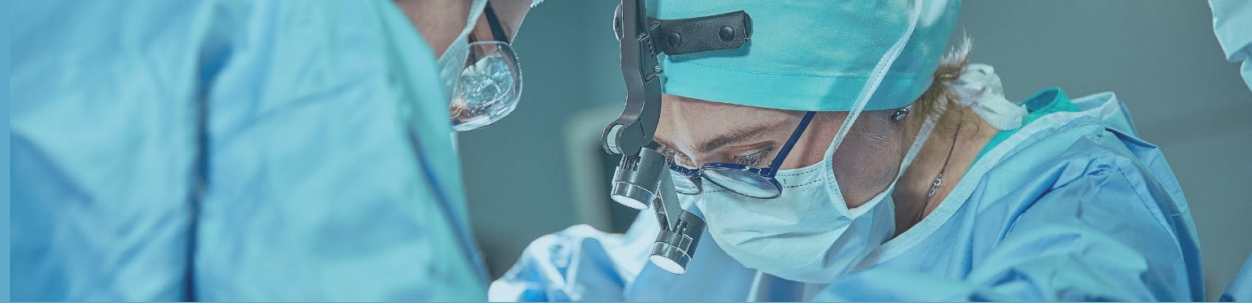


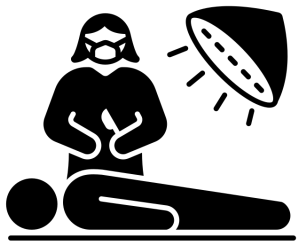
CTA 2018

- Complex TBAD with entry tear in mid thoracic aorta with retrograde propagation of FL to proximal descending thoracic aorta
- Max thoracic aortic diameter 5.8cm.
- FL proximally thrombosed and patent distally with compression of TL at aortic bifurcation.
- FL supplied LRA
- Aneurysm at aortic bifurcation 7.8cm
- Bilateral iliac dilatation with reentry points in the R EIA and L distal CIA.

How would you treat? – Q1

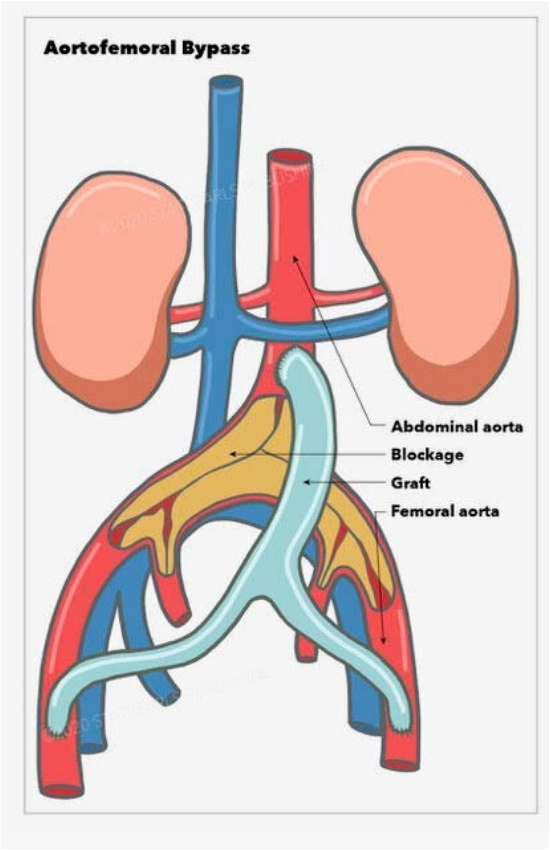


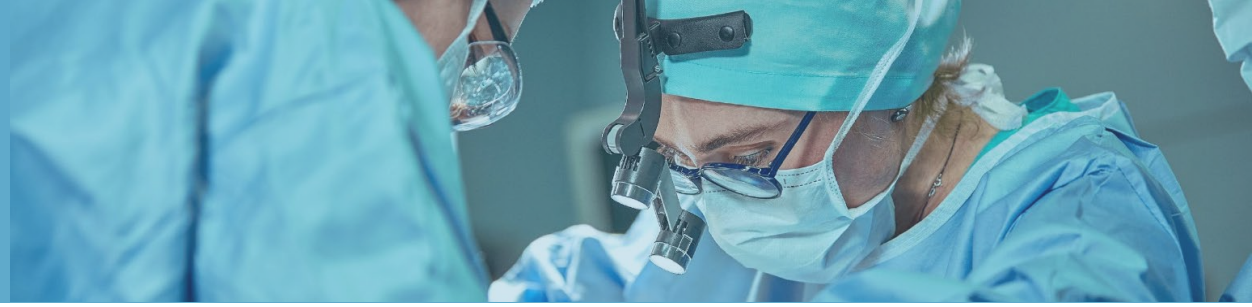
Surgical History Summary



2018: ABI

- **20X10** graft, end-to-end
- Cut the entire FL and opened TL
- Right limb anastomosed to RIIA with jump graft to REIA using 8mm graft
- Left limb anastomosed to LCIA



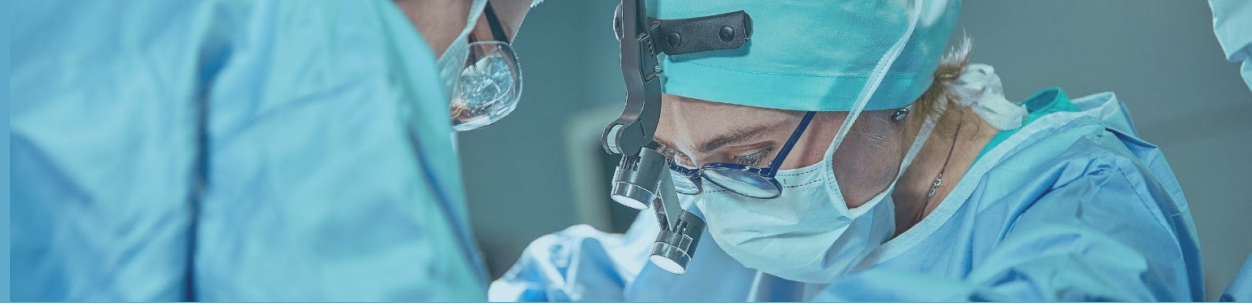


Mr. DY surveillance CTA 2019

Evolution of TBAD

Interval increase in size to 7 cm

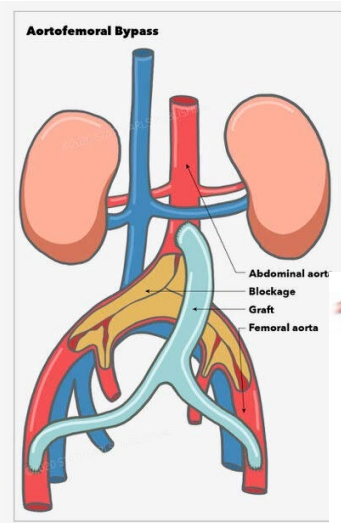
TL significant compression

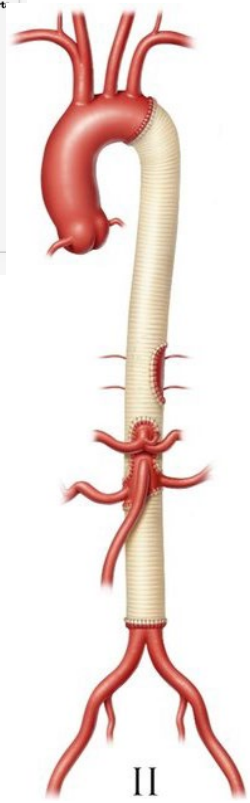


Surgical History Summary

2018: ABI
- Right limb anastomosed to RIIA with jump graft to REIA
- Left limb anastomosed to LCIA

2019: Extent II TAAA repair with 26mm Coselli branched Gelweave from LSCA to ABI. Left heart bypass.
- Reimplanted CA, SMA, LRA, RRA with individual bypass grafts
- Reimplanted pair of T10 ICA with 10mm graft





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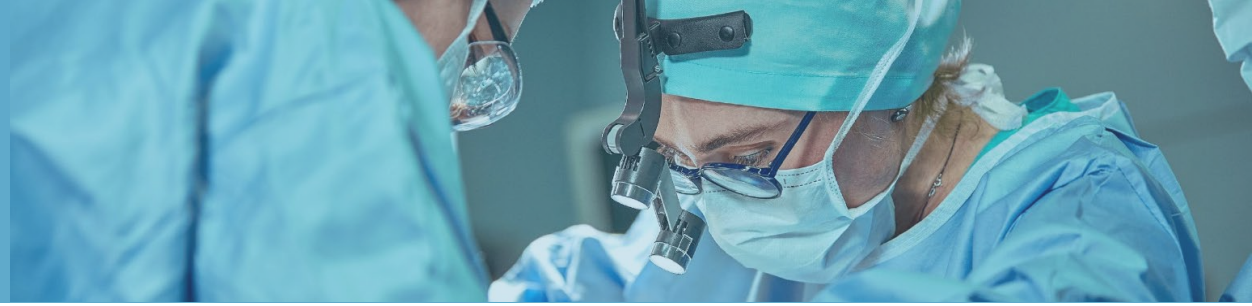

Abdominal Pain NYD

Right internal iliac aneurysm measuring 40mm distal to ABI

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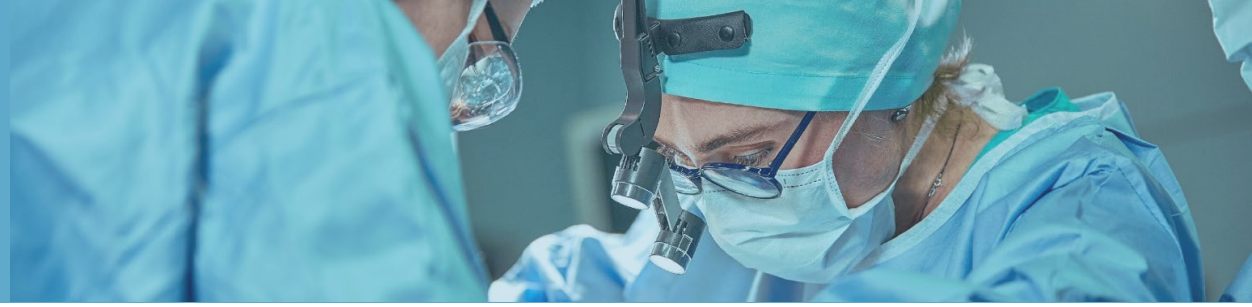
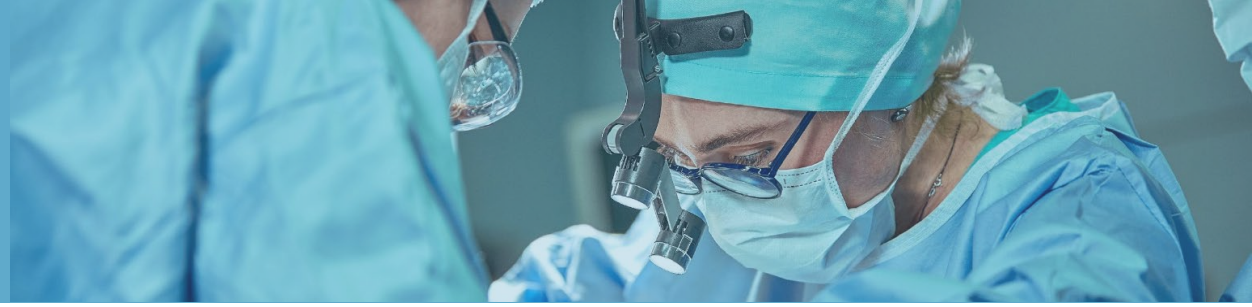


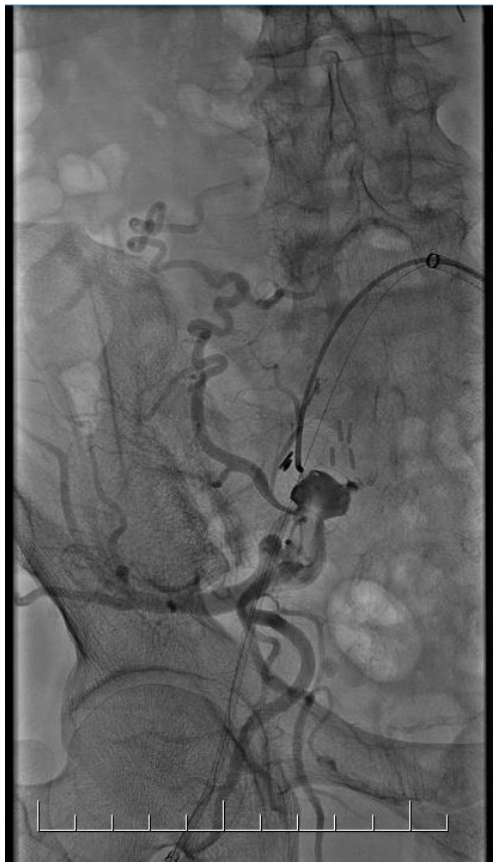
Options

A) Coil embolization of anterior and posterior divisions of IIA
B) Endovascular repair with covered stent from SGA into ABI
C) Open repair with jump graft from prior graft to IIA bifurcation
D) Hybrid options
E) Conservative Management

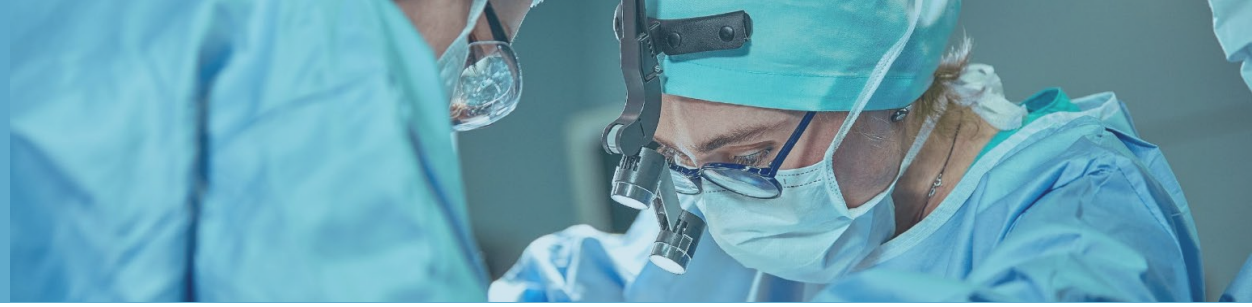
hint: young, no IMA, several lumbars and intercostals sacrificed



Hybrid Repair, Stage 1

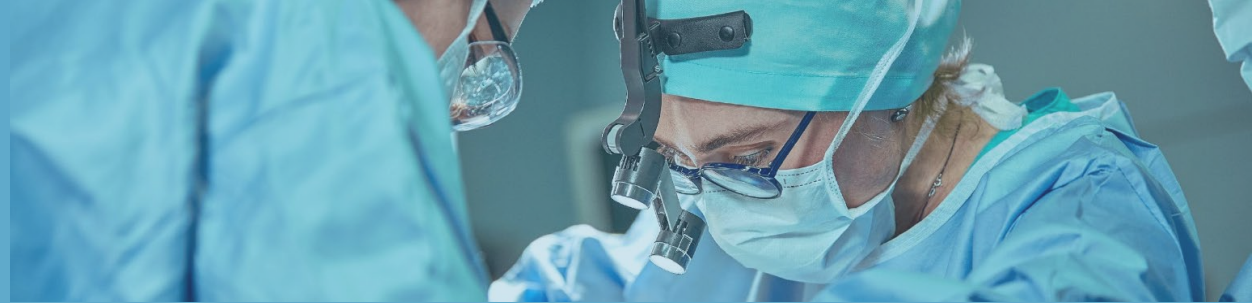


Through and through access.
Coiled inferior gluteal artery.
Viabahn (9X15cm) placed in superior gluteal extending into R CIA graft.



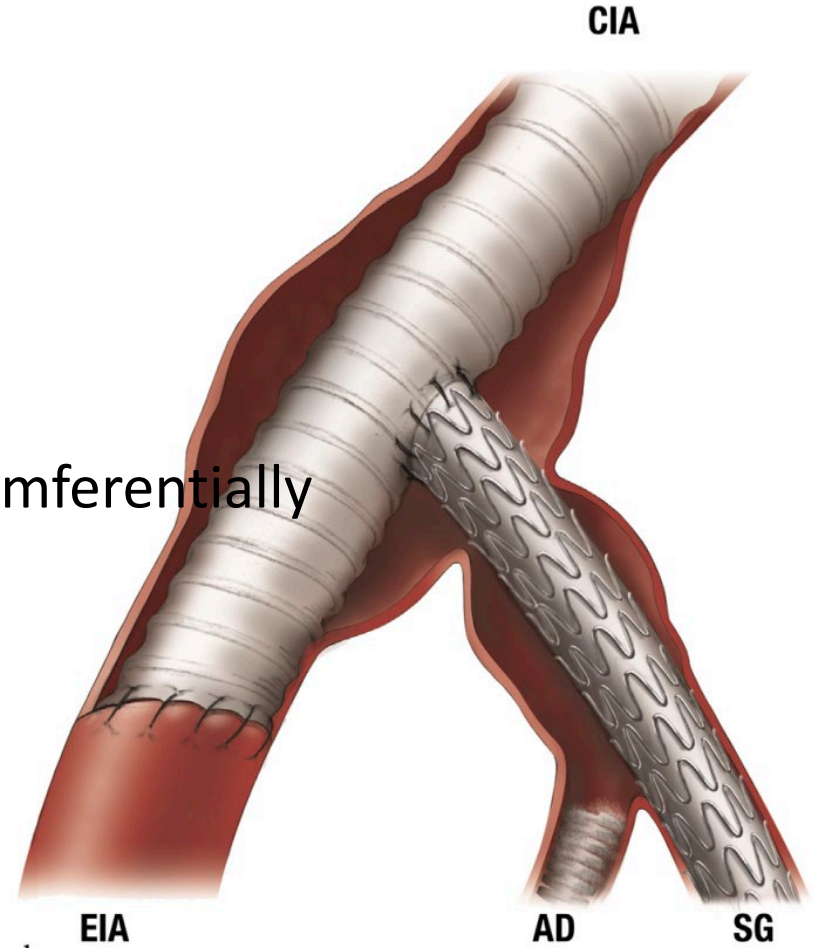
Technique, Stage 1

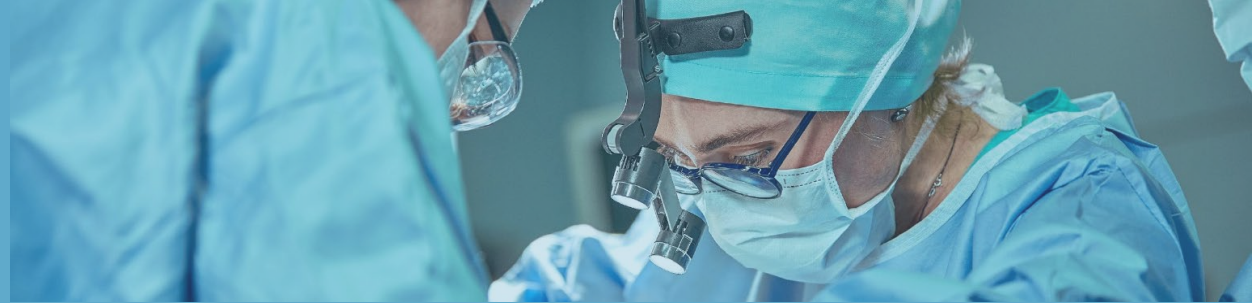
Performed day before OSR
Contralateral percutaneous CFA access and pelvic angiograms obtained to depict aortoiliac anatomy
8F sheath advanced across aortic bifurcation into contralateral CIA
Hydrophilic guidewire and guiding catheter used for selective catheterization of IIA
Image aneurysm and branches to identify anterior division, posterior division, and SGA
Given main IIA trunk is aneurysmal, thus SGA (largest branch) selected for stent-graft placement
Coiled anterior division/inferior gluteal
VIABAHN covered stent deployed over stiff wire in the SGA with distal seal of at least 2 cm and extended proximally across the IIA aneurysm into lumen of CIA/ABI
Stent oversized 10% than sealing segment of SGA. Second stent was used with more length needed to reach CIA lumen
Completion angio



Hybrid Repair, Stage 2

Laparotomy
Extensive adhesiolysis
Dissected down to ABI and identified proximal clamp site
Distal control at EIA and IIA
Opened the proximal anastomosis of the R EIA jump graft
Trimmed the Viabahn (9X15mm) to match graftotomy and circumferentially
Secured with 5-0 prolene stitch.
Reimplanted the EIA jump graft.
Ensured hemostasis.
Abdominal closure

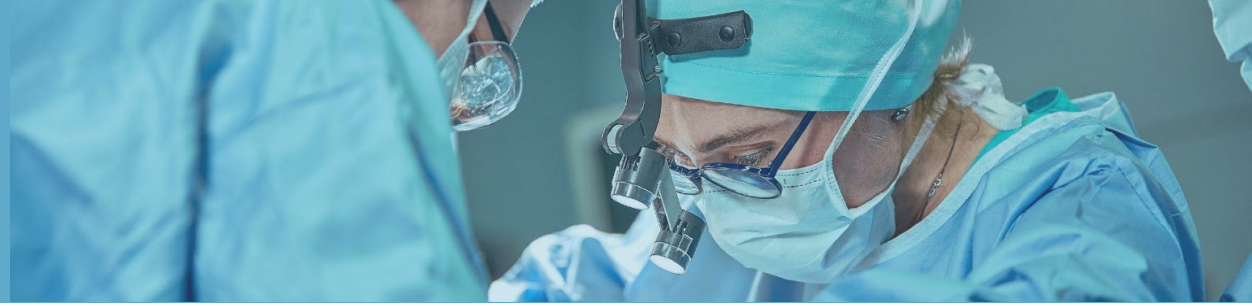




BRIEF REPORT

Covered Stent in the Superior Gluteal Artery in a Hybrid Approach to Treat Internal Iliac Artery Aneurysm: A Technical Note

Maxime Noël-Lamy, MD, FRCPC, Kong Teng Tan, MD, FRCS, FRCPC, and Thomas Lindsay, MD, MSc, FRCSC



Internal Iliac Aneurysms

- Present in 1/3rd of patients with CIAA
- Coil embolization has high technical success rate but results in pelvic ischemia (up to 31% in unilateral)
- OSR: aortoiliac aneurysm repair with ligation of the IIA, with the same high incidence of buttock claudication.
- To preserve IIA, open repair with anastomosis distal to the IIA aneurysm and preservation of IIA distal branches is possible in selected cases. HIGHLY CHALLENGING
- IBGs are used to preserve IIA flow in CIAs but presence of aneurysmal IIAs have been associated with increased repeat intervention rates

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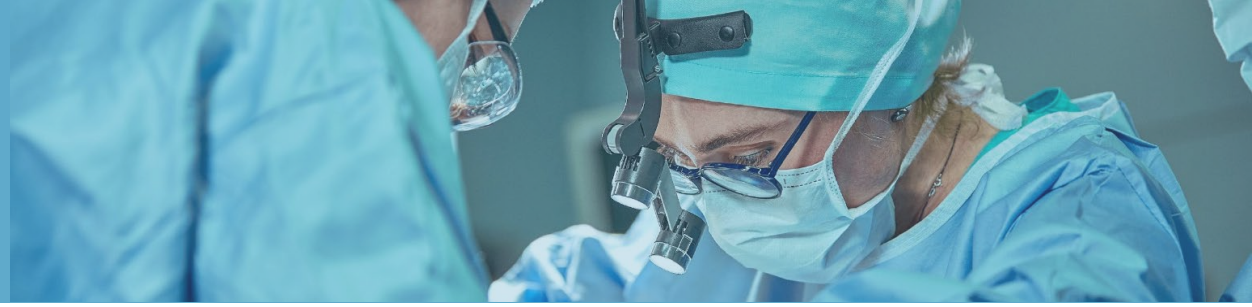


Case Series from Toronto General Hospital

Table 1. Patient and Aneurysm Characteristics

			Aneurysm Size (mm)				
Pt. No.	**Age (y)/Sex**	**Comorbidities**	**AAA**	**RCIA**	**LCIA**	**RIIAA**	**LIIAA**
1	53/M	Smoking, dyslipidemia	48	41	39	29	19
2	68/M	Smoking, hypertension	57	40	40	30	27
3	71/M	Hypertension, history of stroke, dyslipidemia	30	53	56	21	30

AAA = abdominal aortic aneurysm, LCIA = left common iliac artery aneurysm, LIIAA = left internal iliac artery aneurysm, RCIA = right common iliac artery aneurysm, RIIAA = right internal iliac artery aneurysm.

Case series from 2011-2014

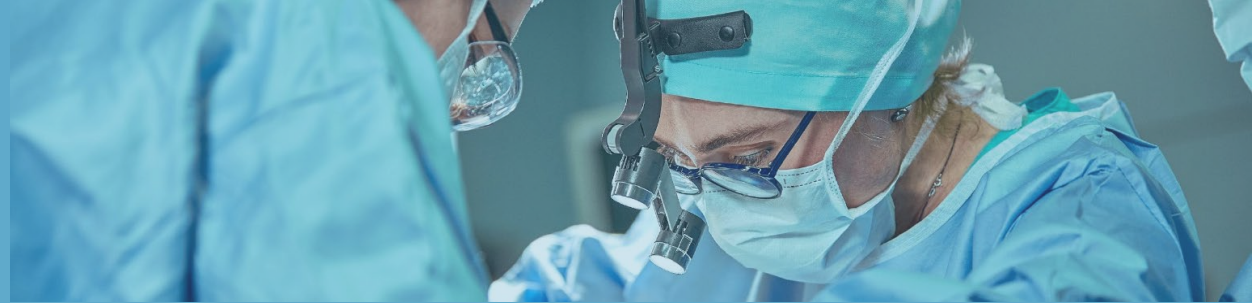
All patients had bilateral CIA aneurysms, bilateral IIA aneurysms, and abdominal aortic aneurysms.

Mean SGA was 6.9mm.

The indication to treat IIA aneurysms was **3 cm**.

The patients were physically active, and preservation of IIA flow was considered important to reduce the risks of buttock claudication

Noël-Lamy M, Tan KT, Lindsay T. Covered stent in the superior gluteal artery in a hybrid approach to treat internal iliac artery aneurysm: a technical note. Journal of Vascular and Interventional Radiology. 2015 Jul 1;26(7):1040-5.



Case Series from TGH

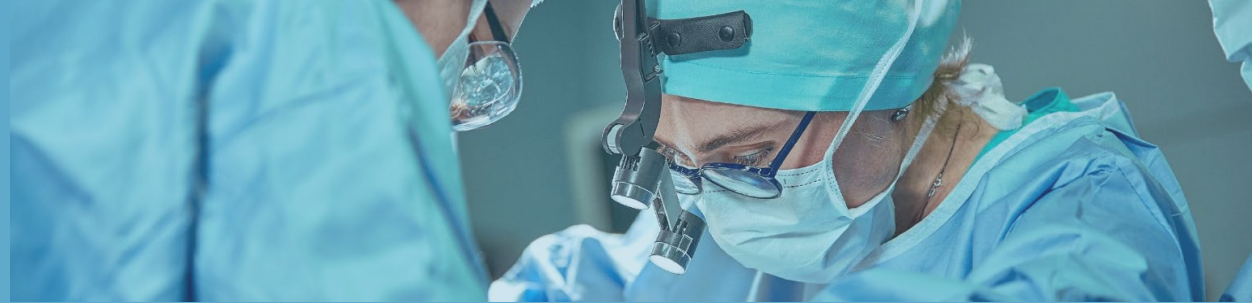
Table 2. Procedural and Postprocedural Details

Pt. No.	Side	SGA Size (mm)	Stent Graft Used, Size	Fluoroscopy Time (min)	Contrast Agent Dose (mL)	Surgery Length (min)	Blood Loss (mL)	Hospital Stay (d)	Imaging Follow-up (mo)
1	Right	6.1	VIABAHN 7 × 100 mm	11.5	75	240	900	9	25, CT angiography
2	Right	6.9	VIABAHN 8 × 100 mm, Fluency 10 × 80 mm	20.6	75	215	1,450	11	12, CT angiography
3	Both	7.6	VIABAHN 8 × 100 mm, 8 × 50 mm	43.7	150	260	1,050	8	6, US

Note–Branch patency was achieved in all cases.
SGA = superior gluteal artery, US = ultrasonography.

The Fluency graft material (expanded polytetrafluoroethylene) frayed and tore easily. The suture would tear the fabric even with light tension. Replaced with VIABAHN.
In patients 2 and 3, short 8-mm interposition grafts were anastomosed end-to-end to the stent graft and end-to-side to the surgical graft for better graft orientation.

Noël-Lamy M, Tan KT, Lindsay T. Covered stent in the superior gluteal artery in a hybrid approach to treat internal iliac artery aneurysm: a technical note. Journal of Vascular and Interventional Radiology. 2015 Jul 1;26(7):1040-5.



Case Series from TGH

a. b.

Figure 4. **(a)** Axial CT angiogram in patient 2 before intervention. Arrowhead indicates a right IIA aneurysm. **(b)** Axial CT angiogram in patient 2 at 1 year after the procedure. Arrowhead indicates the excluded right IIA aneurysm with a patent stent graft.

Noël-Lamy M, Tan KT, Lindsay T. Covered stent in the superior gluteal artery in a hybrid approach to treat internal iliac artery aneurysm: a technical note. Journal of Vascular and Interventional Radiology. 2015 Jul 1;26(7):1040-5.

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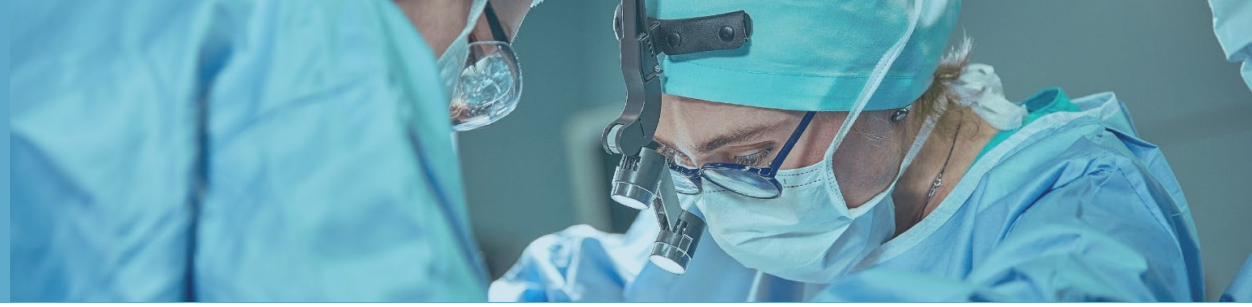

Discussion Points

Normal sized CIA, occlusion of the EIA and leg ischemia could be a concern.

Type Ib endoleak can be prevented by sizing the stent graft appropriately in the SGA (10% oversize) and extending it distally if needed.

If large branches (> 6 mm) arise directly from the IIA aneurysmal sac, they may be embolized with coils to reduce the risks of a type II endoleak.

Presented ***hybrid*** approach that ***preserves antegrade pelvic blood flow*** in patients who are candidates for open aortoiliac aneurysm repair

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thank you