EVAR In a case of Infrarenal Abdominal Aortic pseudoaneurysm-
Indigenous modification of EVAR technique and on table device modification

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Disclosure

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I do not have any potential conflict of interest
CASE

- 27 year female
- Presented in Emergency Department with 1 week duration of severe abdominal pain in paraumbilical region radiating to back
- No history of fever, trauma or surgery
- No history of tuberculosis
- Ultrasound abdomen shows pseudoaneurysm in infrarenal abdominal aorta and CTA was advised for further evaluation
CTA
In view of persistent pain and pseudoaneurysm planned to intervene
• Length between Main renal artery and aortic bifurcation - 83mm
• Length between accessory Lt renal artery and aortic bifurcation - 70mm
• Proximal neck – just below accessory Lt renal artery - 16 mm
• Distal neck just above aortic bifurcation - 12 mm

• Ideal device
  • Prox. Dia - 20 mm
  • Distal Dia - 15 mm
  • Length - 70 mm
### Bifurcated device starts
- **23 mm**

### Iliac limbs
- **Prox fixed-16 mm**
- **Distal variable-10-28 mm**

### Minimum length
- **82mm**

### Shaft length
- **57mm**
What we have
Proximal diameter - 16 mm
Distal diameter - 20 mm
Length - 82 mm

What we want
Proximal diameter - 20 mm
Distal diameter - 16 mm
Length - 65-70 mm
Challenges for reverse diameter

Reverse diameter can be achieved by deploying graft from above rather than femoral approach.

Shaft length - 57 mm
May be a limiting factor if patient is too tall because these devices are meant to deploy from femoral approach.

Profile of Device - 16 F (5.33 mm)
So minimum vessel diameter required is 5-6 mm.

Access vessel – Brachial / axillary

This patient distance from axillary artery to aortic bifurcation was 50 mm.
This patient diameter of axillary artery was 5.5 mm.
This patient axillary artery was good sized and disease free.
Axillary access using axillary conduit was chosen.
Challenges for shorter length

Device length can be reduced from 82 mm to 65 mm by on table cutting of device

- Partial deployment of stent graft on the table
- Precise cutting of desired length
- Resheathing of device
On table trimming of device

Unsheathing of device

Trimming of proximal 15 mm of device

Trimmed device with reduced length of 67 mm

Resheathing of device
Discussion

- Focal dissecting *pseudoaneurysm* in infrarenal location in young patient is rare
- Prior to EVAR it is important to rule out vasculitis and infective /inflammatory causes
- EVAR is many times limited by availability of devices
- It specially become more challenging in presence of assec. renal artery, which also need to be saved especially when it is supplying considerable part of renal parenchyma, because coverage often results in issues such as renal dysfun., infarction and type 2 EL among many others
- Indigenous modification often result in optimal results
Take home points

• **Infrarenal aortic pseudoaneurysm** should be treated irrespective of size

• **Endovascular technique is preferred** in absence of infective or inflammatory etiology

• **Preservation of accessory renal artery** should be attempted especially when size of artery is >3mm and supplying more than 1/3 rd renal parenchyma.

• **Indigenous device modification** and technique should be considered in absence of standard devices
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