EVAR with Iliac Branch

Sherif Essam, FRCSI
Professor of Vascular Surgery
Ain Shams University

WHY??

- Why do we need to preserve the Internal iliac artery??

(Why using Iliac branched device??)

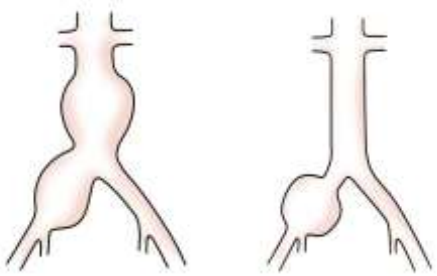
WHY??

- Systematic Review and Meta-analysis of the Effect of Internal Iliac Artery Exclusion for Patients Undergoing EVAR
- D.C. Bosanquet, C. Wilcox, L. Whitehurst, A. Cox, I.M. Williams and C.P. Twine
- European Journal of Vascular & Endovascular Surgery, *2017*-04-01, Volume 53, Issue 4, Pages 534-548
- Sixty-one non-randomised studies were analysed. Fifteen per cent of EVARs require IIA sacrifice. Buttock claudication (BC) occurred in 27.9% of patients. Erectile dysfunction occurred in 10.2% of males. Type II endoleaks were more frequent after covering alone; however re-interventions were rare. Significant ischaemic events (bowel/gluteal/spinal ischaemia) were very rare.

WHEN??

- Indications of IIA Preservation
- – Young, physically & sexually active pts
- – Contralateral IIA stenosis/occlusion
- – Previous TAAA surgery (↑ paraplegia risk)
- – Impaired collateral circulation from IMA

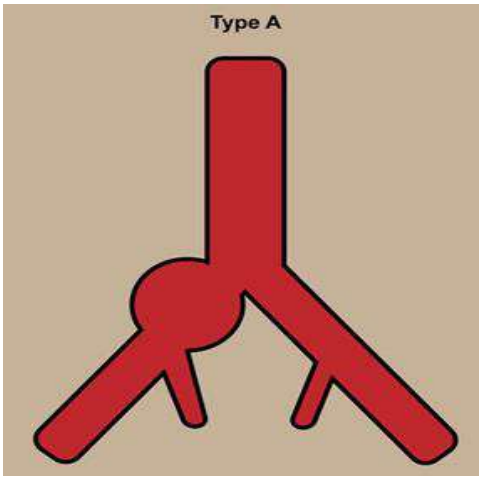
HOW??



- ILIAC ARTERY ANEURYSM TYPES
  - Aorto-iliac aneurysms (97%)
  - Isolated Iliac aneurysms Aneurysm (3%)
- ILIAC ARTERY ANEURYSM DEFINITION
  - Dilation of abdominal aorta > 3cm
  - Dilation of iliac artery > 2cm (double of healthy vessel diameter)

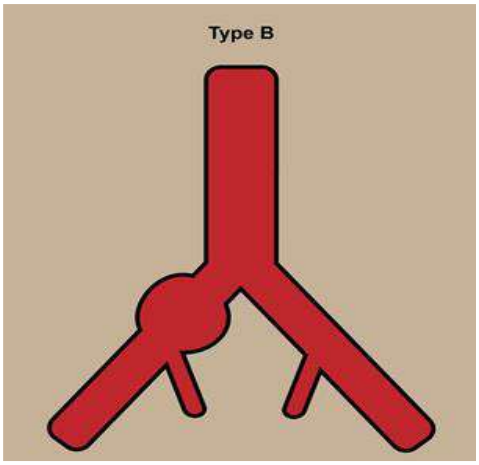
ISOLATED ILIAC ARTERY ANEURYSM CLASSIFICATION

- Type A: CIA aneurysm proximally involves or extends within 1.5 cm of the aortic bifurcation. Distal extension to or beyond the IIA



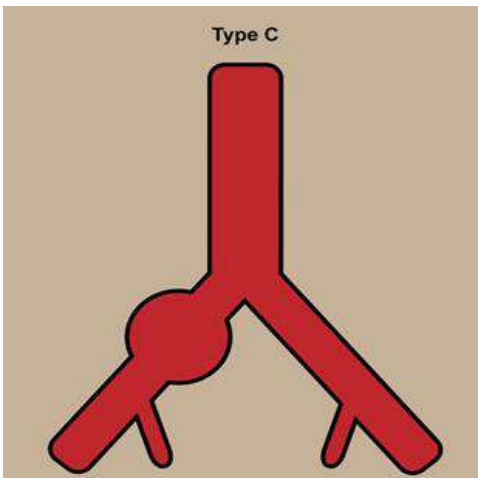
ISOLATED ILIAC ARTERY ANEURYSM CLASSIFICATION

- Type B: CIA aneurysm with adequate proximal neck (i.e. ≥1.5cm). No distal landing zone.



ISOLATED ILIAC ARTERY ANEURYSM CLASSIFICATION

- Type C: CIA has an adequate proximal neck as well as a distal landing zone



ILIAC ARTERY ANEURYSM ENDOVASCULAR TREATMENT OPTIONS

- **Coil-and-cover**

Occlude IIA with coils or plugs and cover with endograft sealing in the EIA

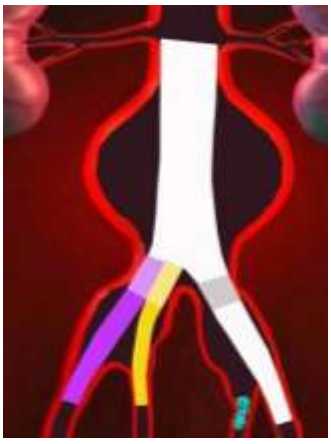
  - Colonic ischemia
  - Buttock claudication
  - Sexual dysfunction
- **Cover only**
  - Type II endoleak

ILIAC ARTERY ANEURYSM ENDOVASCULAR TREATMENT OPTIONS

- **Chimney, Periscope, or Sandwich Technique**
- The ipsilateral iliac limb extender is deployed into the EIA alongside a covered stent, which is distally deployed into the IIA
- Proximally, the two stent grafts lie side-by-side within the ipsilateral limb of the main endograft body

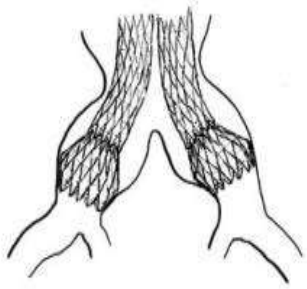
Drawbacks

- Off Label Endovascular Techniques
- No long-term follow up
- Potential compression of parallel grafts, endoleak
- Requires brachial / axillary access



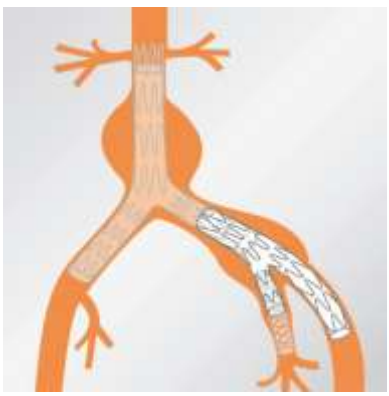
ILIAC ARTERY ANEURYSM ENDOVASCULAR TREATMENT OPTIONS

- **BELL-BOTTOM TECHNIQUE**
- Flared iliac stent graft limbs are typically utilized in patients with small common iliac artery aneurysms up to 21 mm in diameter
- Distal landing zone within the aneurysmatic section



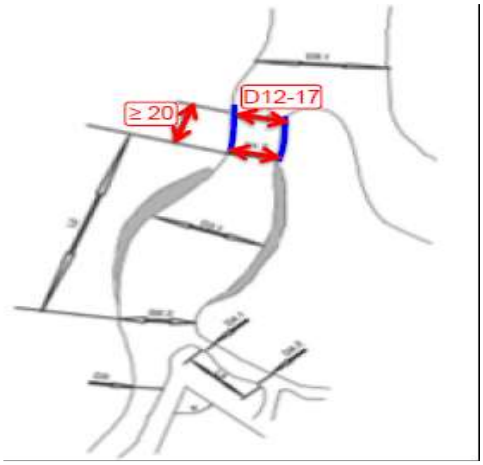
ILIAC ARTERY ANEURYSM ENDOVASCULAR TREATMENT OPTIONS

- ILIAC SIDE BRANCH DEVICES



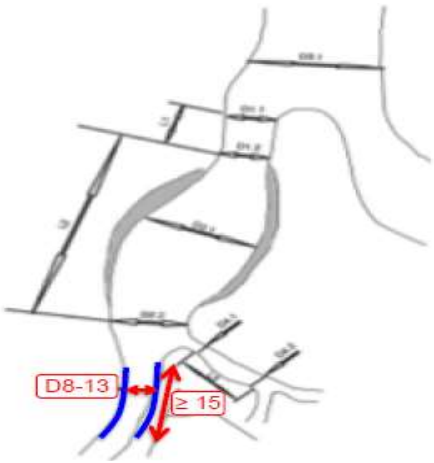
TECHNICAL CONSIDERATIONS

- Anatomical criteria
  - *Proximal landing area* in common iliac artery (ONLY in case of *isolated iliac* aneurysms):
  - Non-aneurysmal
  - Length ≥ 20mm
  - Diameter 12mm to 17mm



TECHNICAL CONSIDERATIONS

- Anatomical criteria
  - *Distal landing area* in external iliac artery:
  - Non-aneurysmal
  - Length ≥ 15/20mm
  - Diameter 8mm to 11/13mm

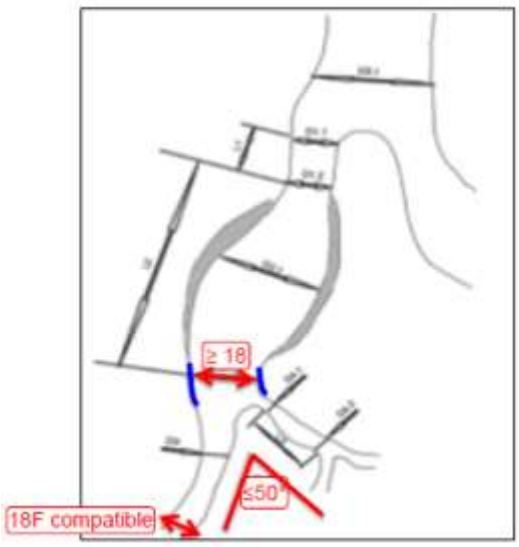


TECHNICAL CONSIDERATIONS

- Anatomical criteria
  - *Landing area in internal iliac* artery:
  - Non-aneurysmal (diameter <11mm)
  - Length ≥ 10/15mm
  - Sufficient open internal iliac artery ostium

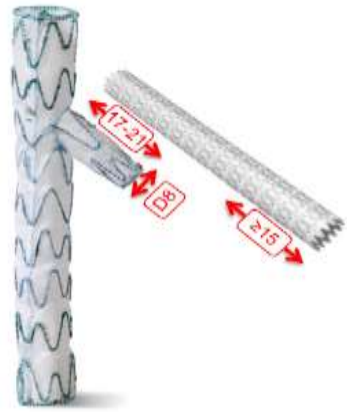
TECHNICAL CONSIDERATIONS

- Anatomical criteria
  - Common iliac artery length minimum 50mm
  - Angel between external and internal iliac artery ≤ 50°
  - **Thrombus free** iliac lumen in area of iliac bifurcation ≥ 15/18mm (to open side branch)
  - Access vessel compatible with 18F (6mm OD) delivery system



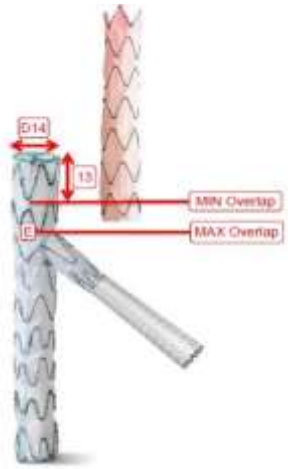
TECHNICAL CONSIDERATIONS

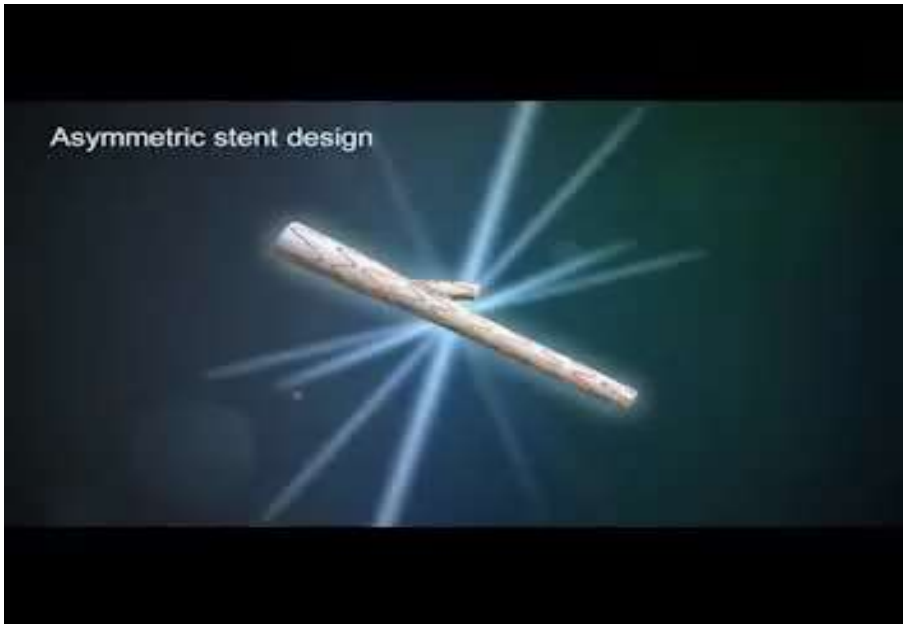
- Dimensions of covered stent must be adequate to seal within side branch and internal iliac artery:
- Inner diameter side branch: 8mm
- Length overlap within side branch: 13-18mm/17-21mm
- Length landing area internal iliac artery: ≥ 15mm



TECHNICAL CONSIDERATIONS

- In case of aorto-iliac aneurysms: Bridging stent between abdominal main body and branched iliac Stent Graft must have adequate seal:
- Proximal Diameter of branched iliac stent: 12/14mm
- Minimum overlap between branched iliac and bridging stent: 13mm/24mm/39mm
- Overlapping must not exceed the bifurcation marker to avoid occlusion of side branch




Asymmetric stent design


Zenith Iliac Branch
Estudio Completo del Producto
ENDO
COOK
MEDICAL

THANK YOU