Bilateral IBD for Aorto-iliac Aneurysms
Technique and Results

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Hypogastric Artery (HA) Preservation in EVAR?
Unilateral and bilateral hypogastric artery interruption during aortoiliac aneurysm repair in 154 patients: a relatively innocuous procedure.

Mehta M, Veith FJ, Ohki T, Cynamon J, Goldstein K, Suggs WD, Wain RA, Chang DW, Friedman SG, Scher LA, Lipsitz EC.

• 154 pts
  – Bilateral/Unilateral HA Interruption

• No buttock necrosis, colon ischemia, death

• Buttock claudication in 12%
  – Bilateral vs Unilateral HA Interruption (NS difference)

→ HA Interruption: relatively benign?
• 18 Studies, 634 pts
  – Bilateral/Unilateral HA Interruption
• Buttock claudication: 28%
  – After unilateral HA interruption: 31%
  – After bilateral HA interruption: 35% (NS)
• Erectile dysfunction: 17%

→ HA Interruption not really benign...
• Systematic review
• 57 Articles
  - 30 on HA Interruption (1468 pts)
  - 27 on HA Preservation (816 pts)

Conclusion: Unilateral or bilateral IIA occlusion during EVAR seems to carry a substantial risk of significant ischemic complications in nearly one quarter of patients. Bilateral IIA occlusion was related to a significantly higher rate of BC. IIA preservation techniques represent a significant improvement in the treatment of aorto-iliac
HA Preservation

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

• No established indications...
  – Indication discussed before?
  – Why not?
  – Do both in the hope to save one?
Iliac Branched Device (IBD)
Cross-Over Technique
IBD Technique

- Co-axial
- ANL-1 12F sheath in body IBD
- ANL-1 7F sheath through limb IBD
- Remove preloaded wire
IBD Technique

- Catheterisation of HA
- Stiff wire
- Advance ANL-1 inside the hypogastric artery
- Pull down IBD to reduce the gap
IBD Technique

- Insertion of bridging stent-graft (safe through the ANL)
- Deployment
- Ballooning
IBD Technique
Anatomical Contraindications

• Absolute
  – Internal Iliac artery aneurysm
  – Narrow diameter at level of iliac bifurcation

• Relative (not with upper access)
  – Sharp aortic bifurcation
  – Short CIAs
  – Previous EVAR
IBD Technique

- Axillary Access
  - Prior EVAR
Bilateral IBD Technique
Options

• Femoral Access
  – Via X-over (x2)
Bilateral IBD Technique
Options

• Axillary Access
  – Short CIA
  – Sharp aortic bifurcation
  – Previous EVAR
Bilateral IBD Technique
Axillary Access

• Extra Requirements
  – Stable upper access
    • (12F ANL)
    • Long Sheath 7F/8F
  – Longer catheters/shafts
    • Bridging Stents
Bilateral IBD Nuremberg Series

• January 2010 - January 2017: total 82 pts with 107 IBDs
• 25 pts Bilateral IBDs
  – 21 pts in 1 Stage, 4 pts in 2 Stages

• Early Outcomes
  – 30d Mortality: 0
  – Overall Technical Success: 47/50 (94%)
    • 2 HA Catheterisation failures, 1 HA Branch Occlusion
Catheterization Failure

Calcified-stenosed HA origin - Narrow iliac bifurcation
Bilateral IBD Nuremberg Series

- Late Events: N=5
  - HA Branch occlusion: N=4
    - Unilateral: N=2
    - Bilateral: N=1
  - Endoleak: N=1
    - Atrium Extension in IIA branch + coiling second branch

- Remark: all 3 patients with occlusion asymptomatic...
Endoleak
Endoleak Treatment

Extension + IIA Branch coiling (Axillary Access)
Conclusions

• Bilateral HA Preservation
  – Lack of clear consensus
  – No strictly defined anatomical/clinical criteria

• Bilateral IBD
  – Safe technique in experienced hands
  – Good results
  – Axillary access useful
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