Tips and tricks for EVAR of AAAs with small distal aortic necks to avoid limb thrombosis

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EVAR of AAAs with small distal aorta

Limb occlusion
- Incidence after EVAR in 3.2-7.2% of cases (more than 50% presenting at 6m or later)
- Reintervention needed in almost all the cases
- Increased morbidity, mortality and costs

Cochennec F, Eur J Vasc Endovasc Surg 2007; 34: 59-65

EVAR of AAAs with small distal aorta

Risk factors for limb occlusion
- Pre-existing atherosclerotic disease
- Distal line
- Narrow distal aorta (<20mm), especially if calcified

Gabelli L, Acta Chir Belg 2004; 104: 519-526
Cochennec F, Eur J Vasc Endovasc Surg 2007; 34: 59-65

EVAR of AAAs with small distal aorta

Aorto-uniliac reconstruction
- More invasive approach
- Morbidity of fem-fem bypass
- Last resort option

EVAR of AAAs with small distal aorta

Unibody design bifurcated endograft
- Single-lumen main body endograft
- No iliac limbs at the level of aortic bifurcation
- Low rate of reintervention for limb occlusion at 5 yrs (1.27%)

Carpenter JP, J Endovasc Ther 2010; 17: 153-162
EVAR of AAAs with small distal aorta

Modular bifurcated endograft + kissing stents

- Maintain the excellent global performance of latest generation modular endografts
- Increase the radial force at distal aortic bifurcation with balloon-expandable stents, avoiding the risk of limb compression

EVAR of AAAs with small distal aorta

Outcomes of Endurant stent graft in narrow aortic bifurcation

- 817 pts
- 87 with narrow aortic bif.
- 41 (47.1%) primary stenting
- NO DIFFERENCE IN LUMBO THROMBOSIS B/W NARROW AND NON-NARROW AO-BIF


EVAR of AAAs with small distal aorta

“S. Giovanni – Addolorata” experience

- Medtronic Endurant 121
- Gore Excluder 112
- Boston Vee 38
- Endovascular Nellix 23
- Cook Zenith/I/Alpha 14
- Endovascular Octopus 12
- Endovascular AXS 11
- Vasculix Aneurx 7
- Cordis Incraft 5

EVAR 343

EVAR of AAAs with small distal aorta

“S. Giovanni – Addolorata” experience

- EVAR N 343
- Mean F-U 14m (3-42)
- 5 (1.4%) reinterventions for limb complications
  - 3 Limb compression (fixed with kissing stents)
  - 2 Limb occlusion (fixed with thrombolysis + unilateral stenting)

- 17 pts (4.9%) distal aortic bifurcation ≤ 16mm

- 7 Unibody bifurcated stent-graft (Endologix AXS)
- 10 Modular bifurcated stent-graft with adj stenting
  - Eric P.
    - 4 Medtronic Endurant + implant of humed bioler-expandable GP stents
EVAR of AAAs with small distal aorta

"S. Giovanni – Addolorata" experience
Jan 2016 - Oct 2017
EVAR  N 343    Mean F-U  14m (3-42)

17 pts (4.9%)  distal aortic bifurcation ≤ 16mm

Unibody stent-graft group (7pts)
1/7 (14.3%) reintervention at 27m for claudication (relining with kissing stents)

Modular stent-graft + APS group (10pts)
0/10 reinterventions (all limbs patent at f-u, no symptoms of claudication)

Endologix AFX unibody stent-graft

30m follow-up
EVAR of AAAs with small distal aorta

Conclusions

- A narrow distal aorta is one of the most relevant risk factor for limb compression and subsequent thrombosis after EVAR
- Unibody design stent-graft seems to offer significant advantages for these anatomies (no limbs in the aorta)
- Standard modular bifurcated stent-grafts with adjunctive primary stenting represent the best solution in our experience for a distal aorta ≤16mm