Extensive Aorto-iliac Occlusive Disease: A Modified CERAB Technique
Andrew Holden MBChB, FRANZCR
Auckland Hospital, New Zealand

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Disclosures and Disclaimers
- Andrew Holden MBChB, FRANZCR, EBIR
  No relevant disclosures for this presentation

TASC D Aorto-iliac Occlusion
- Surgical revascularization recommended by the TASC group
- Excellent patency (87-91% @ 5 years) but 30 day mortality of 3-4% and major complication rate of 12-15%
  Gruppe M et al, Surgery 2012;151:882-6

TASC D Aorto-iliac Occlusion
- One endovascular approach is long “double-barrel” stents
- Smaller flow lumens may be associated with stent compression/kinking and reduced patency
- Bifurcated endografts can also be used but these are primarily designed for aneurysmal not occlusive disease

CERAB Technique
- Covered Endovascular Reconstruction of the Aortic Bifurcation
- Provides a reconstruction with BE covered stents to maximize lumen diameter and avoid stent compression or thrombus formation
- Neo-bifurcation created just above aortic bifurcation

CERAB: In Vito Testing
- CERAB configuration associated with the best geometrical conditions, lowest radial mismatch and lowest total mismatch volume (TMV or dead space)
  E. Groot Jebbink, University of Twente, Enschede, The Netherlands
Juxta-renal Aortic Occlusions: The Need for Chimneys

- Endovascular reconstruction of juxta-renal aortic occlusions also require parallel grafts to maintain visceral and renal artery patency

Case Example

- 53 year old male
- Severe obstructive apnea, obesity, previous left nephrectomy (RCC)
- Bilateral Rutherford 4 symptoms – severe claudication and rest pain

Case Set Up

- Percutaneous access left branchial artery, 7F sheath
- Surgical exposure both CFAs with surgical vesi-loop control of both SFA/PFAs (embolic protection)
- Initial intervention antegrade from brachial approach
- Aortic bifurcation at the L4 vertebral body level on pre-procedural CT
- 5F vertebral catheter
- Hydrophilic wire looped and directed down occluded LCIA, followed by the catheter

Guidewire steered into 6F sheath in CFA, retrieved by sheath removal and backloading

7F sheath then advanced over "through and through" wire and its dilator to the level of the aortic bifurcation
This is important to reconstruction the neo-bifurcation close to the level of the native bifurcation
- Co-axial vertebral catheter then used to steer an hydrophilic wire down occluded RCIA and retrieved through a sheath
- Retrograde access then achieved on both sides with placement of stiff guidewires (Amplatz)
- Using the retrograde access, balloon angioplasty of the occluded aorto-iliac segment performed
- Pre-dilated with 6mm angioplasty balloons
- Solitary right renal artery then cannulated from above
- Parallel graft technique to deliver renal and overlapping aortic i-Cast covered stents (Marquet Atrium V12s)
- 7mm renal stent, 16mm aortic stents
- Left groin guidewire withdrawn during this stenting
- CERAB technique to reconstruction aortic bifurcation
- 8mm iliac covered stents (i-Cast)

- Self-expanding stents across iliac bifurcations

Recorded demonstration:
Endovascular Aortic reconstruction for Juxt/a/partially Supra Aortic Occlusion with renal salvage
Dr. Andrew Hudson
Post-operative Course

- Patient discharged the following day
- Latest follow up @ 12 months – walking with no pain (Rutherford 0)
- Normal renal function
- Doppler US satisfactory

Conclusions

- CERAB has been shown to provide durable reconstruction of the aortic bifurcation in occlusive disease
- Reconstruction of extensive aortic occlusion is possible, incorporating parallel grafts for visceral arteries
- A combination of brachial and femoral approaches facilitates parallel grafts and anatomic reconstruction of the aortic bifurcation