Hybrid procedures for aortic arch lesions are effective and durable: Tips and Tricks to make them work effectively

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**DISCLOSURES**

- Medtronic: Consultancy, Speakers fees, travel and conference fees
- Orzone: Institutional level capital funding
- Bolton Medical: Consultancy, speakers fees, travel and conference fees
- Gore: Travel and conference fees

**MORTALITY AND FIVE YEAR DURABILITY**

Primary technical success, was achieved in 52/55 (94.5%) of cases

Elective mortality 2.1% at 30D

Overall mean follow-up was 74.6 months (95% CI 57.5-91.7) with bypass patency rate of 98.7% (78/79).

**PLANNING**

A technical plan for treatment should be designed based on computed tomography angiography (CTA) images with a dedicated 3D working station with centre line measurements.

Do not be tempted to land in a short diseased landing zone - Plan for long term seal – less is not more

Optimisation with cardiac, respiratory and renal evaluation and prehabilitation

Look for vocal cord palsy especially in those the need C-C cross over– unrecognised Ortner’s syndrome

**CAROTID SUBCLAVIAN Bypass**

Left supra clavicular incision

Dissection of CCA AND SCA

End to side anastomoses

Preserve CN X and Phrenic nerve

Use a 8mm Dacron bypass rather than transpose.

Care with lymph leak and bleeding.
CAROTID CAROTID SUBCLAVIAN BYPASS

- Left supraclavicular incision, right on anterior border of SCM
- Dissection of R&L CCA AND SCA with care
- Retropharyngeal 8mm Dacron bypass
- Ensure haemostasis and careful post-operative HDU care.
- Rescan if concerns of pain on swallowing or voice change

FULL ARCH HYBRID PROCEDURES

- Landing in Zone Zero
  - C S bypass first
  - End to side anastomosis of 8mm Dacron to left carotid and place into chest
  - Median sternotomy
  - Side biting clamp
  - 10mm Dacron from ascending
  - End to side anastomosis for LCCA graft
  - Tie off LCCA and LSCA
  - Then innominate anastomosis end to end

FULL ARCH HYBRID PROCEDURES

- Ascending anastomosis on the lateral aspect and check when closing
- Consider bypass in dissection cases, else you risk type A

DO NOT IGNORE THE SMALL HAEMATOMA ON THE ARCH

STENT GRAFT PLACEMENT

- For Zone 1 and 2, hypotension, SBP 70mmHg, good imaging
- Landing stent grafts in the ascending aorta with overdrive pacing
- Plan - Graft sizing
- Utilise - “Sterile cockpit”
- Watch – Type A

SINGLE CHIMNEY FOR LANDING IN ZONE ZERO

- Consider in:
  - Emergency
  - Hostile chest
  - Co-morbid patient
- Useful but....
  Make sure it seals!

ARCH HYBRID APPROACHES

- Until endovascular approaches are ready for prime time and suitable for all anatomies these procedures will have a place
- These procedures can bite you, so be prepared and respect them
- Less is NOT more
- Achieve an effective and durable solution