Sandwich Technique for Aortic Arch Aneurysms

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✓ Nothing to Disclose
Complex Aortic Arch Aneurysms (Zone 0)

Aortic arch replacement remains among the most technically challenging cardiovascular operations, incurring considerable risk for perioperative death and stroke.
Background

Complex Aortic Arch Aneurysms (Zone 0)

- Total Surgical
- Hybrid
- Branched Arch Endograft
- Chimney/Sandwich Technique
Sandwich Technique - Zone ‘0’

✓ First case – 2010
✓ Arch and Thoracoabdominal Aneurysms
Sandwich Technique - Zone ‘0’

✓ Aortoesophageal Fistula
Sandwich Technique - Zone ‘0’

- Previous TEVAR with Left Carotid-Subclavian Bypass
- Type I Endoleak
Sandwich Technique - Zone ‘0’

✓ Previous Ascending Aorta Aneurysm Open Repair
✓ Type I Endoleak
Sandwich Technique - Zone ‘0’

✓ Previous TEVAR with Left Subclavian Occlusion
✓ Type I Endoleak
Sandwich Technique - Zone ‘0’

✓ Previous Abdominal Aorta Aneurysm Open Repair
Sandwich Technique - Zone ‘0’

✓ Previous Left Pneumectomy (Lung Cancer)
Sandwich Technique - Zone ‘0’

✓ Death in 27-day post operative (MI)
Sandwich Technique - Zone ‘0’
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Advantages

1. Real World
2. 2 Thoracic ELG, 3 SECS, 1 LB, 3 Introducers, 3 Guide wire & 1 pig tail
3. Use the ELG which the surgeon is familiarized
4. Can be used in an urgent setting
5. Easier than branched ELG
Sandwich Technique - Zone ‘0’

Advantages

6. Previous TEVAR or Open Repair
7. More patients can be treated
8. More Endovascular Specialist can perform it
9. Intervention time is shorter
10. One Step
11. Significant low cost (at least in Brazil)
Methods

Complex Aortic Arch Aneurysms (Zone 0)

✓ In our institution, a prospective study was conducted of all consecutive patients undergoing endovascular repair of complex aortic arch aneurysms (zone 0) from October 2010 to May 2014, 11 patients (10 men and 1 woman; mean age, 60.4 ± 10.1 years) with aortic arch aneurysm underwent Total Endovascular Aortic Arch Repair with the Sandwich Technique/Chimney
Methods

Complex Aortic Arch Aneurysms (Zone 0)

- Primary endpoints included 30-day and 1-year related mortality, endoleak and supra-aortic trunk (SAT) patency, as well as aneurysm sac (AS) evolution and neurologic complication rate.
Results

Complex Aortic Arch Aneurysms (Zone 0)

✓ The Mean Follow-up Period: 9.4 ± 8.3 months
✓ Primary SAT Patency Rate: 91% (3/33)
✓ 30-Day Endoleak Rate (18%):
  • One type I: It was successfully managed during the procedure with the deployment of a thoracic endograft.
  • One type II: It sealed spontaneously after a 30-day CT scan.
Results

Complex Aortic Arch Aneurysms (Zone 0)

✓ Late Endoleak Rate (9%):

• One type III. It was effectively treated with a second thoracic stent graft deployed after three months.
Results

Complex Aortic Arch Aneurysms (Zone 0)

✓ The 30-day survival rate was 91%. One patient died from complications related to an ischemic myocardial infarction.

✓ There were two late deaths (> 30 days) in our series (18%)
  - One procedure-related (9%) : Previous aortoesophageal fistula died from pulmonary complications 4 months postprocedure.
  - One non-procedure-related (9%) : Concomitant thoracoabdominal aortic aneurysms; He died during attempted elective thoracic aneurysm repair after 6 months.
Results

Complex Aortic Arch Aneurysms (Zone 0)

✓ After 6-month FU: Complete AS exclusion 91%
✓ No Conversion Rate
✓ No Spinal Cord Ischemia Rate
✓ Stroke/TIA Rate
  • Minor Stroke (9%): Complete recovered in 2 days
Conclusions

Complex Aortic Arch Aneurysms (Zone 0)

✓ **TAAER with the ST is an effective technique with satisfactory early and midterm results.**

✓ **This technique could be an attractive alternative to conventional total arch replacement.**

✓ **More experience with the method is warranted.**