Endo versus open arch repair; what is evidence, what is anecdote?

Nick Cheshire

Disclosures

– None

Therapeutic options in aortic arch disease 2017

- Open Surgery Questions
  - Hypothermic circulatory arrest
  - Cerebral protection strategy
  - Carrell patch v branched grafts
  - What are appropriate measures of outcome

Outcome of open total arch replacement in the modern era

- Retrospective analysis, 21 global studies, 2004-14.*
- 2880 pts, Open Total Arch Replacement.
  - Elective (77%) & Emergency/Urgent (23%).
  - Aneurysmal (65%) & Dissection (35%).
- Cerebral Protection: 98%
  (Most bilateral or triple)
- Mild or Mod Hypothermia: 84%
- Composite Endpoint: 30 day mortality, Neurological event

Royal Brompton & Harefield – Aorta Surgery Data

- Hypothermia and cerebral protection strategies in aortic arch surgery: a comparative effectiveness analysis from the STS Adult Cardiac Surgery Database
- All patients: 2880
  - 12,521 Open Aortic Arch Replacements, 2011-2014
  - Composite Endpoint: 30 day mortality, Neurological event
  - Deep hypothermia and cerebral protection strategies: 15%, 9% vs 7%, 5%
Thoracic endovascular aortic repair with branched Inoue Stent Graft for arch aortic aneurysms

- Multicentre, retrospective Japanese study, 2003–13
- 89 pts, Arch Aneurysms, Branched ISG* (Single 64; Double 18; Triple 7)
- Early and Long term follow up data

### Results

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<tr>
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<th>All patients</th>
<th>30 day†</th>
<th>Peri-procedural Stroke</th>
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<tr>
<td>All patients</td>
<td>89</td>
<td>4.5%</td>
<td>16%</td>
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**Summary of Literature Evidence**

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<th>5–12%</th>
<th>MORTALITY</th>
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<th>4–13%</th>
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<td><strong>Hybrid Arch</strong></td>
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<td><strong>Open Arch</strong></td>
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*p value*
Case – Totally endovascular?

Patient 1:
- 42-year-old male
- Previous Bentall for bicuspid valve
- Previous coarctation repair
- Redo root 2015 – ECMO 2 months
- Poor RV
- Patch blow out

Summary

- Open surgery
  - Still gold standard
  - What are your CP and HCA techniques?
  - What are your outcomes?

- Wholly Endo
  - Multiple branches not yet realistic for most patients
  - Series growing; outcomes as yet unknown
  - Chimneys/Scallops

- Hybrid
  - Even lesser debranching; stroke & SCI important
  - Embolisation protection?