New Generation Stent-Grafts For Treating Complications Of Aortic Coarctation Repairs: The Landscape Is Changing

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POST COARC ANEURYSM REPAIR CHALLENGES

• Re-do surgery
  — mortality of up to 14%
  — significant morbidity including recurrent laryngeal nerve paralysis, haemorrhage and paraplegia
• Frequent associated with other congenital cardiac abnormalities (association in over 90% of patients under 6 months of age)
• A patient who is difficult to convince


POST COARC ANEURYSM REPAIR CHALLENGES

• Anatomical Challenges
  — Mismatch
  — Angulation
  — Involving left subclavian artery
• Clinical challenges
  — Long term durability


IMPERIAL SERIES

<table>
<thead>
<tr>
<th>N=15 Baccular pseudoaneurysms</th>
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<tbody>
<tr>
<td>Median age</td>
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<td>Median aneurysm size</td>
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<td>Median age at initial coarctation repair</td>
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<td>Median time from age of coarctation repair to age when intervention was required</td>
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<td>Landing zone</td>
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<td>Extra anatomical bypass</td>
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TREATMENT STRATEGIES

• New devices
  – Conformability for significant angulation
  – Proximal/Distal size mismatch
  – Accuracy for deployment in arch
  – Smaller delivery system
• Custom made devices / Scallops

RESULTS

• 30 Day Mortality 0%
• Stroke/Paraplegia 0%
• Technical success 100%
• Completion angiograms:
  – two type Ia endoleaks
  – two type Ib endoleak
  (all excluded by stent extension patients and/or balloon molding).
• Early complications:
  – Lymph leak from a LSCA revascularization neck wound
  – Partial visual field defect due to left retinal artery branch occlusion

CONCLUSIONS

• Particular abnormalities
• New generation and custom made stent graft designs useful

The landscape is changing:
• Short term success
• Follow up now up to 7 years

Will stenting become primary treatment?
• Longer term outcomes from pooled data are needed