Treatment Strategies for Coarctation of the Aorta in Adults

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Disclosure

Speaker name: Shuiting Zhai

I have the following potential conflicts of interest to report:

- Consulting
- Employment in industry
- Stockholder of a healthcare company
- Owner of a healthcare company
- Other(s)

I do not have any potential conflict of interest

✓
Coarctation of the aorta (CoA) is a congenital fibrous narrowing of the distal arch or, most often, the proximal descending thoracic aorta distal to the left subclavian artery.
Classification of CoA

1903, Bonnet:

- Infant Type: (Preductal CoA)
- Adult Type: (Ductal or postductal CoA)
CTA of CoA
Management Strategies of CoA

- **Conservative:** Asymptom, no hypertension

- **Open:** Surgical resection of the narrow segment
  - Ascending-abdominal Aorta Bypass

- **Endo:** Percutaneous angiography (PTA)
  - Self-expanding stent graft
  - Balloon--expandable covered stent
  - (Cheatham-platinum, CP stent)
Balloon-expanding Covered Stent (CP)
Treatment Results of CoA for 26 Cases

From 2010 to 2016 in our medical center

<table>
<thead>
<tr>
<th>Interventions</th>
<th>No CoA</th>
<th>Stentgrafts</th>
<th>Complications</th>
</tr>
</thead>
<tbody>
<tr>
<td>PTA</td>
<td>1</td>
<td></td>
<td>Dissection</td>
</tr>
<tr>
<td>Self-expanding stent graft</td>
<td>6</td>
<td>COOK (4) Medtronic (1) Gore (1)</td>
<td>No</td>
</tr>
<tr>
<td>Balloon-expandable stent graft</td>
<td>14</td>
<td>CP covered stent</td>
<td>No</td>
</tr>
<tr>
<td>Ascending-Abdominal A Bypass</td>
<td>4</td>
<td>Bard graft</td>
<td>No</td>
</tr>
<tr>
<td>Resection of Lesion</td>
<td>1</td>
<td></td>
<td>No</td>
</tr>
<tr>
<td>Total</td>
<td>26</td>
<td></td>
<td>1</td>
</tr>
</tbody>
</table>
CASE 1

- Patient: female, 31yrs
- Hypertension 20yrs, BP: 200/115mmHg
- ABI: Left 0.65, Right 0.61
CASE 1

Arterial pressure gradient: 85mmHg
1W and 2Ms Postprocedure CTA
CASE 2

- Patient: male, 28yrs
- Hypertension: 10yrs
- BP: 190/80-90mmHg
- ABI: Left 0.63 Right 0.65
CTA
Balloon-expandable covered Stent

BP gradient 60mmHg

Balloon-expandable covered Stent
BP: 135/80 mmHg  ABI: L 0.89 R 0.93
3Ms Postprocedure CTA

BP: 135/85mmHg  ABI: L 0.96  R 0.96
CASE 3

- Patient: male, 22yrs
- Hypertension 10yrs  BP:180/110mmHg
- ABI: Left 0.75  Right 0.79
BP: 104/56
VS: 44/30 mmHg
MED: 30 × 150 mm
AB: 46

TEVAR

BP: 105/72 VS 103/72 mmHg
BP: 124/86mmHg ABI: L 0.95 R 0.95
CASE 4

- Patient, male, 30yrs
- Hypertension: 10yrs, BP: 157/85mmHg
- ABI: Left 0.66, Right 0.64
Preprocedure CTA
1W Postprocedure CTA

ABI: L 0.88  R 0.90
CASE 5

- Patient, female, 45 yrs
- Sudden chest pain 2 days
- Hypertension: 2 yrs, 180/92 mmHg
- CTA: Coarctation with aortic dissection
BP: 143/80
Vs 80/75 mmHg

BP: 134/90 Vs 125/75 mmHg

TEVAR
10ds Postprocedure CTA

ABI: L 0.85  R 0.87
CASE 6

- Patient: female, 33y
- Hypertension: 12 yrs
- BP: 168/100 mmHg
- ABI: Left 0.56  Right 0.55
CASE 6

ABI: L 0.98  R 0.96
CASE 7
CASE 7
Discussion

What should be concerned about treatment of CoA?

- Location of CoA
- Sealing zone
- Shape of aortic arch
- CoA with aortic dissection or aneurysm?
- Femoral artery access
Summary

- High technical success rate (100%)
- Low complication rate
- Better mid and long-term results
- Individual therapeutic treatment plan is significant
Thanks for your attention!
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