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Toulouse France

FALSE LUMEN PROCEDURES  
IN CHRONIC AORTIC DISSECTION  
TO IMPROVE AORTIC REMODELING.

DISCLOSURES

Resurch - grants, consulting:
• Medtronic  
• Gore  
• Boston  
• Bolton/Terumo  
• Abbott

Residual false lumen (FL) patency after chronic dissection Rx is an independent factor of poor longterm outcome. (Li D, Am Heart Assoc. 2016)

Stent grafts fails to achieve complete false lumen thrombosis in up to 50% of patients. (Lombardi & al. JVS, 2014)

Late aneurysmal aortic expansion and rupture in 30% of patients with persistent perfusion of the false lumen after TEVAR, requiring additional re interventions. (Nienaber circulation 2009, Tanaka A, JVS  2014)

PLANNING

1. CTA analysis:
   1. Flow
      • Proximal flow or distal back flow?
      • Collateral flow?
   2. Reentries  
      1. Proximal aorta  
      2. Distal aorta  
      3. Collaterals

   (carotids, LSA, visceral branches , Intercostal, iliac arteries)

TECHNIQUE

1. Stent-graft proximal or distal extension, to close a secondary entry tear of the dissection flap, or type I or III endoleak.

2. Close re-entry tears arising from collateral arteries, either by embolization or using covered stents.

3. Direct embolization by the false aortic lumen to promote false lumen thrombosis when persistent perfusion of the false lumen raised from retrograde abdominal re-entries or collaterals

4. Embolization to occlude type 2 endoleaks.
Technique

1. Stent-graft proximal or distal extension, to close a secondary entry tear of the dissection flap, or type I or III endoleak.

2. Closure of aortic tear without stent graft extension arteries, either by embolization or using covered stents.

3. Direct embolization by the false aortic lumen to promote false lumen thrombosis when persistent perfusion of the false lumen raised from retrograde abdominal re-entries or collaterals.

4. Embolization to occlude type 2 endoleaks.
Technique

1. Stent-graft proximal or distal extension, to close a secondary entry tear of the dissection flap, or type I or III endoleak.
2. Close re-entry tears arising from collateral arteries, either by embolization or using covered stents.
3. Direct embolization by the false aortic lumen to promote false lumen thrombosis when persistent perfusion of the false lumen raised from retrograde abdominal re-entries or collaterals. A large variety of devices as well as Candy plugs, plugs, coils & liquid embolization materials. Initially to reduce the flow and avoid distal migration of the materials, coils and plugs (Amplatzer Vascular Plug (AVP) Abbott Vascular) are deployed in the FL, generally at the level of the coeliac trunk, completed by glue injection.
4. Embolization to occlude type 2 endoleaks.

Technique

1. Stent-graft proximal or distal extension, to close a secondary entry tear of the dissection flap, or type I or III endoleak.
2. Close re-entry tears arising from collateral arteries, either by embolization or using covered stents.
3. Direct embolization by the false aortic lumen to promote false lumen thrombosis when persistent perfusion of the false lumen raised from retrograde abdominal re-entries or collaterals.
4. Embolization to occlude type 2 endoleaks.
Results

- 59 ancillary endovascular procedures were performed in 35 consecutive patients for aneurysmal expansion, aortic rupture or malperfusion syndrome
- 16 patients (45.7%) initial type A AD Rx by open aortic surgery,
- 19 (54.3%) type B AD, previously Rx by TEVAR.

Indications

<table>
<thead>
<tr>
<th>Procedure type (* some patients had combined procedures)</th>
<th>59 pts</th>
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<tbody>
<tr>
<td>Intervention on the true aortic lumen, n (%)</td>
<td>37 (62.7%)</td>
</tr>
<tr>
<td>Intervention on the true lumen of a collateral artery, n (%)</td>
<td>26 (44.1%)</td>
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<tr>
<td>Intervention on the false aortic lumen, n (%)</td>
<td>21 (35.6%)</td>
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<tr>
<td>Intervention on the false lumen of a collateral artery, n (%)</td>
<td>10 (16.9%)</td>
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<tr>
<td>Number of interventions per patient, mean</td>
<td>1.7</td>
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<tr>
<td>Type A AD</td>
<td>1.75</td>
</tr>
<tr>
<td>Type B AD</td>
<td>1.63</td>
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<tr>
<td>Follow-up time (months), median [IQR]</td>
<td>10.6 mths</td>
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Complications

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<tr>
<th>Complications</th>
<th>4 (6.8%)</th>
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<tbody>
<tr>
<td>In-hospital 30-days mortality, n (%)</td>
<td>1 (1.69%)</td>
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<tr>
<td>Stroke or spinal cord ischemia</td>
<td>0 (0%)</td>
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<tr>
<td>Vascular access false aneurysm</td>
<td>1 (1.69%)</td>
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<tr>
<td>Asymptomatic collateral artery dissection</td>
<td>3 (5.1%)</td>
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Conclusion:

- Coverage of the primary entry tear may not be sufficient to induce effective aortic remodelling and technical success
- Elimination of FL flow may reduce the risk of late distal aortic complications.
- More complex and individualised endovascular treatment strategy is often required to allow sustainable success
- Precise preoperative planning to achieve optimal Rx strategy to avoid complications