Why TEVAR Alone Is Not Enough For The Long-Term Management Of Type B Aortic Dissections (TBAD): Update On The Advantages And Disadvantages Of The PETTICOAT Composite Device Concept

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Disclosure
- Consultant: CookMedical
- Consultant: Endologix

TEVAR for Complicated TBAD

Known Benefits
- Reduced mortality compared to Open Surgery
- Rupture and malperfusion are effectively initially managed with TEVAR.
- Long term positive aortic remodeling is possible with longer coverage of the thoracic aorta.

Long term reality
- Significant aortic growth occurs in patients after TEVAR
- Secondary interventions are needed in over 30% of patients
- The visceral aorta is the most frequent area of growth and the most difficult area to treat...

• 84 publications reviewed
• 17 met inclusion criteria
• Thoracic aorta: 1108 pts 33.8 % growth
• Abdominal aorta: 397 pts 34.5 % growth

CONCLUSION: TEVAR DID NOT PREVENT AORTIC GROWTH

So what now?
- TEVAR is just the beginning of TBAD management.
- Frequent follow-up and surveillance for early growth is paramount.
- Facilitating Future secondary interventions
  – Allowing better reentry tear exclusion
  – Easier management of visceral aorta
Initial Management Strategies

- TEVAR alone
- TEVAR + Petticoat
  - (STABLE Trial)
- TEVAR + Petticoat + Septal disruption
  - (STABILIZE Technique)


Key Outcomes 0-30 Days

<table>
<thead>
<tr>
<th></th>
<th>STABLE II Acute, complicated (N = 73)</th>
<th>STABLE I Acute (N = 55)</th>
<th>SVS Dataset Acute, complicated (N = 85)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mortality</td>
<td>6.8% (5/73)</td>
<td>5.5%</td>
<td>10.6%</td>
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<tr>
<td>Stroke</td>
<td>6.8% (5/73)</td>
<td>10.9%</td>
<td>9.4%</td>
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<tr>
<td>MI</td>
<td>1.4% (1/73)</td>
<td>Not reported</td>
<td>1.2%</td>
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<tr>
<td>Paraplegia or paraparesis</td>
<td>5.5% (4/73)</td>
<td>1.8%</td>
<td>9.4%</td>
</tr>
<tr>
<td>Bowel ischemia</td>
<td>1.4% (1/73)</td>
<td>1.8%</td>
<td>3.5%</td>
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<td>Renal failure requiring dialysis</td>
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TEVAR alone vs Petticoat

- TEVAR alone: 45 pts
- Petticoat (STABLE I): 39 pts
- TEVAR alone positive remodeling thoracic aorta.
- Both demonstrated growth in AA
- Petticoat:
  - minimized FL area AA
  - significant remodeling of visceral aorta.

TEVAR alone vs Petticoat

TEVAR with Stent-Grafts Alone or with a Composite Device Design in Patients with Acute Type B Aortic Dissection in the Setting of Malperfusion

Jonathan Sobocinski, MD, PhD; Nuno V Dias, MD, PhD; Kiatt Hongku, MD; Joseph V Lombardi, MD; Qing Zhou, PhD; Alan T Saunders, MD; Timothy Resch, MD, PhD; Stephan Hauton, MD, PhD

SVS 2018
### 30-Day Mortality and Morbidity

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Malperfusion-related mortality was defined as deaths caused by bowel/mesenteric ischemia or multiple organ failure.

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### Abdominal Aortic Remodeling

**TEVAR vs Bare Stent**

**TEVAR ALONE** vs **BARE STENT/Petticoat**

- **Active True Lumen Expansion**
  - Minimizes False Lumen Volume
  - Reintervention
STABILISE CONCEPT

OBJECTIVE

To achieve complete aortic reconstruction during endovascular AD repair via stent-assisted, balloon induced intimal rupture and relamination; leading to elimination of false lumen perfusion and subsequent prevention of remote phase complications.

Conclusions

In TBAD:

- TEVAR does not eliminate the risk of aneurysmal degeneration.
- Petticoat management has lower dissection related mortality in malperfusion
- The visceral aorta has more favorable aortic remodeling with Petticoat.