


Complete Aortic Endovascular Repairs (Zone 0-10) Using Parallel Stentgrafts With Endovascular Docking Station: How And Why To Make Them Work Effectively Despite Doubts About Parallel Grafts: What Are the Limitations



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VEITH Symposium 2024

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Disclosures

- None

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What Are the Limitations?

1. My inability to relay a very simple yet effective message

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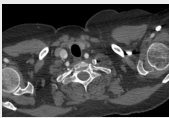
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FIRST PUBLISHED REPORT

Complete Zone 0-10 Aortic Endovascular Reconstruction
Teymouri M, Mehta M, et al. JVS-CIT, June 2023;9(2):101-111

5 Patients Had Complete Zone 0-10 Endovascular Aortic Reconstructions (over 7 years)

- **Aortic Dissections (4, 80%) & Aneurysms (1, 20%)**
- Off-the-Shelf Stentgrafts – Parallel Configuration
- Endovascular Docking Station – Chimneys – Periscopes
- Indications: Rupture 1(20%), Symptomatic 2(40%), Pseudoaneurysm 2 (40%)



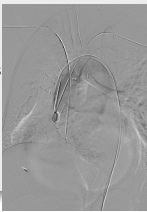
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Complete Aortic Endovascular Repairs (Zone 0-10) Parallel Stentgrafts with Endovascular Docking Station

Zone 0-5: 3 Vessel Chimney TEVAR

- Bilateral Axillary Access, Left CCA Access, Femoral Access
- Chimney: Innominate, Left CCA, Left Subclavian
- Reinforce Chimneys With Self Expanding Stents
- TEVAR



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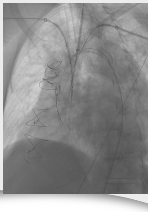
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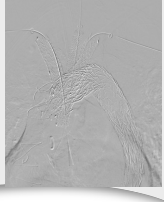
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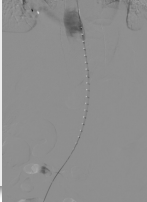
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Parallel Stentgrafts with Endovascular Docking Station**

Zone 5-10: 4 Visceral Periscope TEVAR

- Tubular Stentgraft in infrarenal aorta true lumen which becomes the docking station for other devices
- Retrograde chimney orientation in visceral arteries
- Parallel bridging thoracic stentgraft
- Retrograde chimneys deployed
- Additional parallel bridging thoracic stentgraft if needed



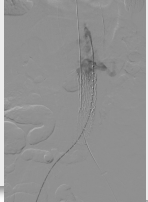
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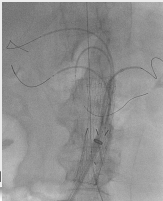
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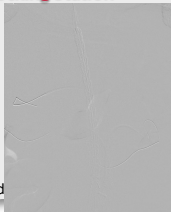
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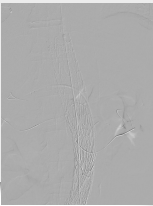
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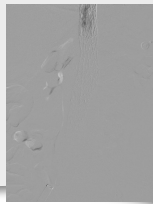
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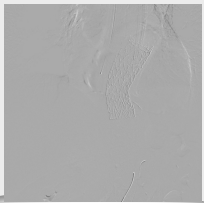
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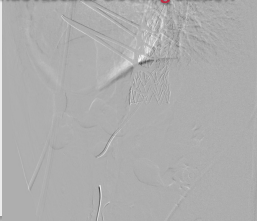


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- Antegrade chimney Orientation

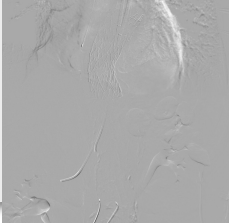


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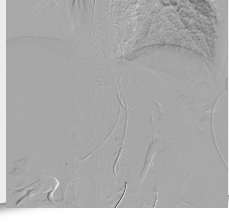


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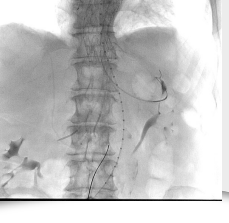


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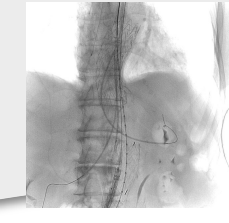


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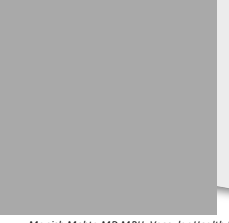


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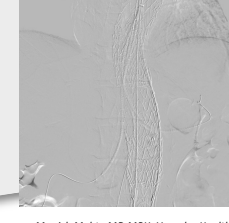


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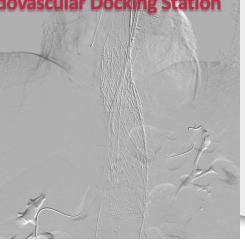


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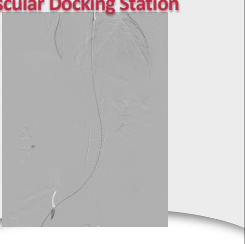


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- 5 complete zone 0-10 aortic endovascular reconstructions
- Mean follow-up 4.5 years
- 2 patients with Marfan's had prior ascending aortic tube graft for TAAD
- Total 15 aortic procedures
- 14 aortic arch chimneys, 1 left CS bypass, 20 visceral chimneys

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- 2 (40%) patients underwent zone 0-5 TEVAR first
- 3 (60%) patients underwent zone 5-10 TEVAR-EVAR first
 - Zone 5-10 TEVAR-EVAR was staged, mean time 6 weeks
 - Staging included:
 - TEVAR and 3-4 visceral chimneys
 - Mean 6 weeks later, EVAR with CSF drainage

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Complete Zone 0-10 Aortic Endovascular Reconstruction
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- Technical Success 100% (No stroke, spinal ischemia, RF, or death)
- Mean follow-up >5 years
- Aneurysm related mortality 0%
 - 1 (2.9%) celiac chimney occlusion, patient remained asymptomatic
- Zone 0-5 TEVAR: 2 (40%) had false lumen endoleaks – Embolization
- Zone 5-10 TEVAR-EVAR: 2 (40%) gutter endoleaks – Embolization

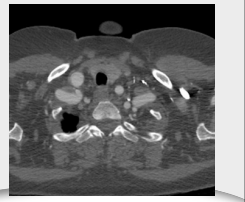
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**Complete Aortic Endovascular Repairs (Zone 0-10)
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Zone 0-10 complete TEVAR-EVAR


- Endoleak from Innominate Dissection



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**Complete Aortic Endovascular Repairs (Zone 0-10)
Parallel Stentgrafts with Endovascular Docking Station**

- Relatively simple procedure, uses readily available off-the-shelf tubular devices
- Allows for either zone 5-10 or 0-5 to be treated first
- Allows for staging of zone 5-10 TEVAR – Visceral chimneys - EVAR
- Allows all chimney orientation to be adjacent, minimizing gutter endoleaks and minimizes kinks
- Allows for longer parallel stentgraft overlap zones, and longer gutters.
- Longer gutter endoleak embolization results in a significant pressure reduction across these thrombosed channels and into the aneurysm sac.

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