

My Experience in the Ascending Aorta



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IML- MEET '15

INT- MEET '12

Disclosures

- Research funding: Cook Medical

Endovascular Treatment Acute Type A Aortic Dissection

- **Morphological suitability for EVR**
- **Appropriate case load – ‘surgical turn downs’**
- **Technical aspects and endograft design**
- **Clinical scenarios**
- **Future strategy**

- Proximal and distal LZ > 20mm
 - True lumen < 38mm
 - Total aortic diameter < 46mm
- Absence of significant aortic regurgitation



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- 102 patients
 - 32 tubular endograft ascending
 - 8 with debranching
 - 13 with branched endograft



The International Registry of Acute Aortic Dissection (IRAD)

Table 4. Management and Outcomes of Acute Aortic Dissection

	Type A (n = 289) Management, No. (%)	
	Surgical	Medical
No.	208 (72)	81 (28)
In-hospital mortality	54 (26)	47 (58)
Total*	101 (34.9)	

IRAD GROUP, 2017

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Conclusions Acute aortic dissection presents with a wide range of manifestations, and classic findings are often absent. A high clinical index of suspicion is necessary. Despite recent advances, in-hospital mortality rates remain high. Our data support the need for continued improvement in prevention, diagnosis, and management of acute aortic dissection.

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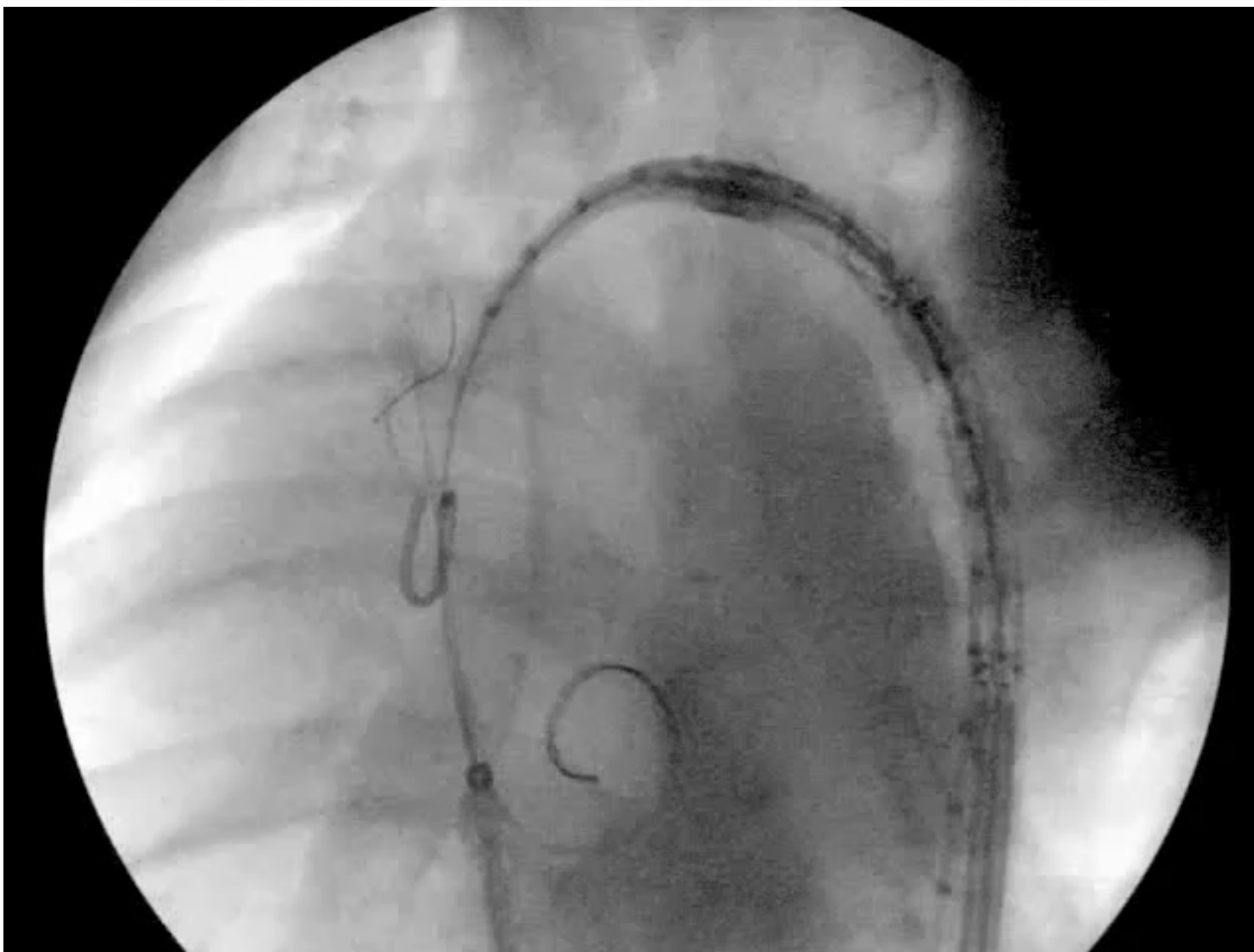
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Cook Medical Type A Dissection Device

- **Device diameters – 28-46mm**
- **Device length– 65mm covered 85mm total**
- **Delivery system**
 - **100cm length Flexor system 16 – 20 Fr**
 - **Soft, flexible, tip**
 - **Hydrophilic coated for improved tracking**



Cook Medical Type A Dissection Device

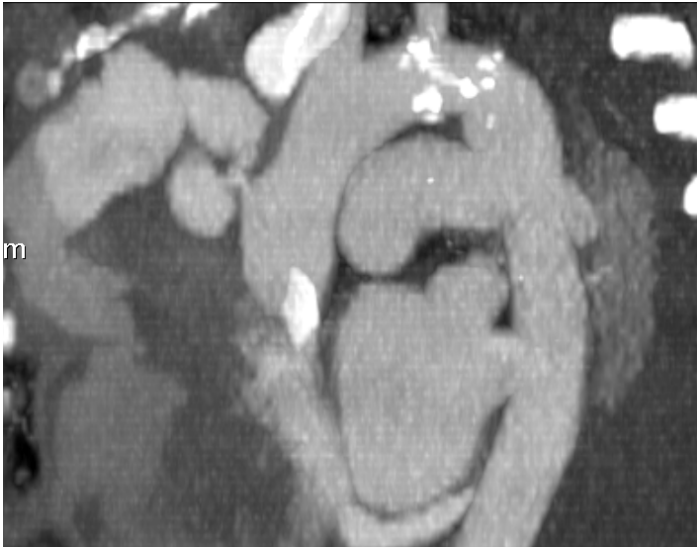


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INT- WEEK 12

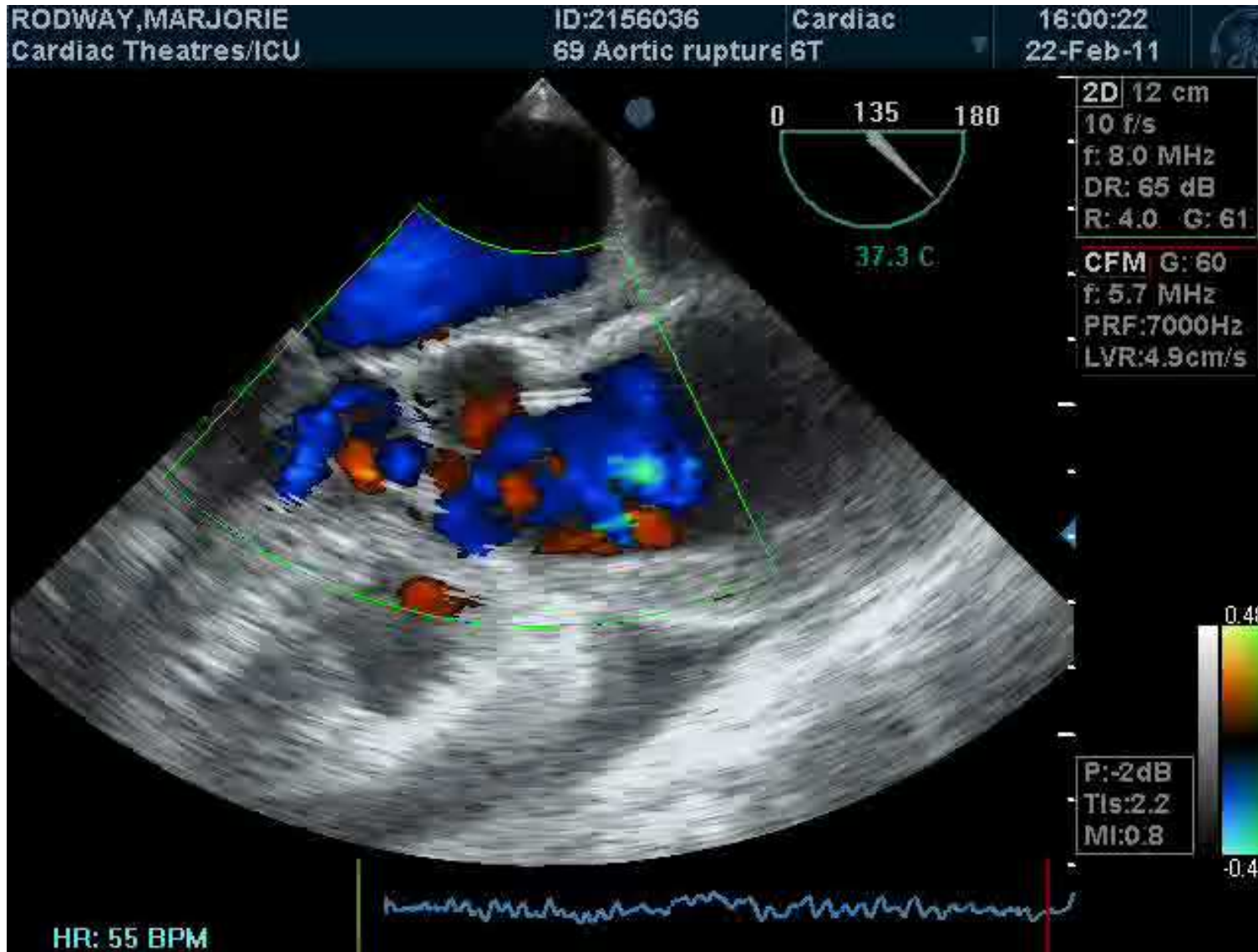
Procedural Details

- ECG gated CT and 3D workstation
- TOE pre and intra-procedurally
- Consignment stock of ascending grafts
 - Femoral access where possible
 - 5-10% oversizing
- Overdrive pacing for cardiac standstill



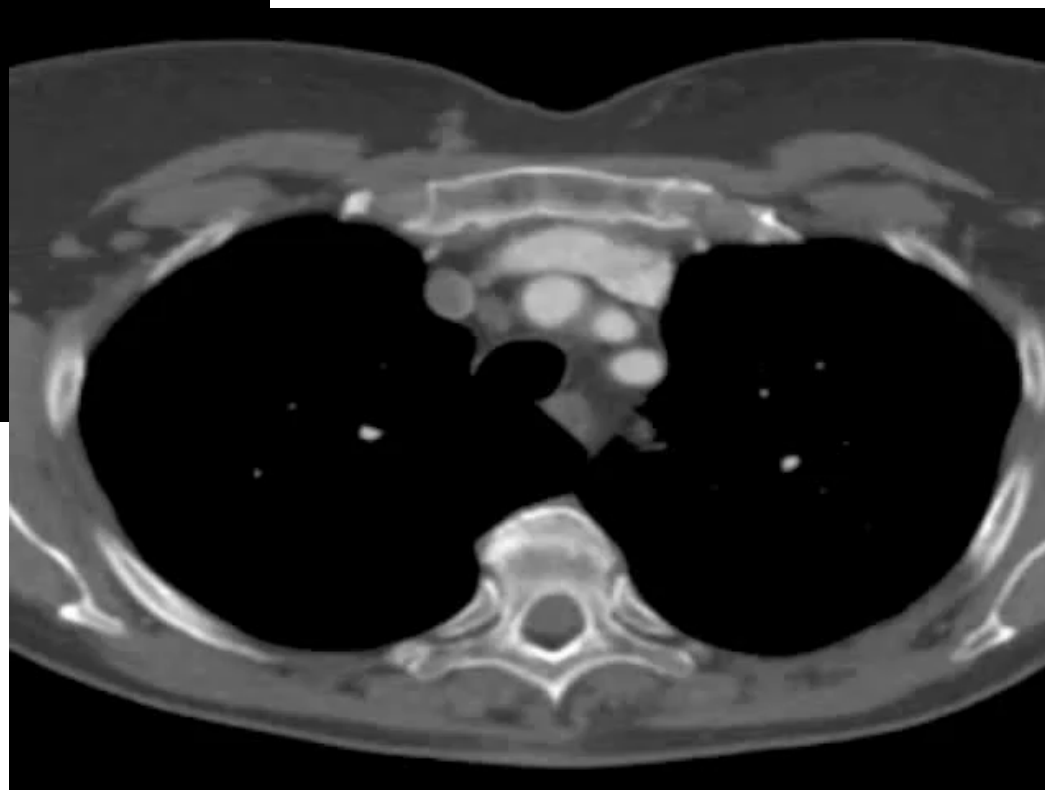
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Review

Progress in Endovascular Management of Type A Dissection **CME**

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WHAT THIS PAPER ADDS?

- The surgical management of acute type A aortic dissection is evolving. This paper describes how endovascular solutions are likely to improve outcomes in this challenging pathology. It reports the world experience to date and the specific challenges that remain to the pioneers of endovascular therapy in the proximal aorta.

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ABSTRACT

Proximal acute aortic dissection [type A] remains a disease with a poor prognosis. High peri-operative open surgical mortality [up to 30%] and a significant turn-down rate [up to 40%] substantiate the bleak prospects for patients with this disease. Thoracic endovascular stent grafting has revolutionized the treatment of distal [type B] acute aortic dissection. Endovascular surgeons are now looking to improve the treatment of type A dissection by offering endovascular techniques to supplement conventional surgical therapy. Less invasive endovascular therapy, obviates the need for sternotomy and cardiopulmonary bypass, may reduce perioperative morbidity and offers a solution for those patients declined conventional intervention due to co-morbidity or severe complications of the disease. Thoracic stent grafting in the ascending aorta presents specific challenges due to proximity to the aortic valve, navigation over the steep aortic arch and pulsatile aortic movement. Endovascular surgeons have treated type A dissection off-license using aortic cuffs and stents designed for infra-renal aortic surgery. Now grafts specifically designed for treating type A dissection are being developed and deployed under trial [compassionate license] in patients deemed unfit for open surgery. This paper explores how endovascular solutions may fit into the future care of patients with acute type A dissection.

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Introduction

Type A acute aortic dissection [TAAD] is a catastrophic arterial insult, which requires emergency cardiac surgical intervention. Although surgical results have improved with superior grafts and compatible suture materials, enhanced cardiopulmonary bypass, cerebral protection, biologic glue and tailored postoperative surveillance, overall in-hospital mortality remains as high as 30%.¹ This statistic also fails to account for the considerable proportion of patients (up to 40%) turned-down for operative intervention due to co-morbidity or haemodynamic instability.² The in-hospital mortality for patients managed medically is also dismal (59% die without leaving hospital).³

Endovascular solutions have become the preferred management of many complex aortic diseases involving the aortic arch and descending thoracic aorta. Thoracic endografting has an established role in acute complicated type B aortic dissection superseding primary open surgery. The ascending aorta represents the new endovascular frontier,⁴ and clearly there is a requirement for improved outcomes in TAAD. In this paper the possible role of endovascular solutions to TAAD is explored.

Epidemiology

The reported estimates of thoracic aortic dissection [TAD] are 2.9–4.3 cases per 100,000 persons per year. Approximately two-thirds of TADs involve the ascending aorta [Stanford type A].⁵ The incidence appears to be rising, although this may simply be a function of improved diagnostic imaging. TAAD is more common in men, with an average age at onset of 63 years.² The principle risk factors are hypertension, aortic dilatation, congenital

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Author	Country	Year	N=	30-day mortality [%]
Case reports				
Ihnken et al. ²⁷	USA	2004	1	0
Zhang et al. ²⁸	China	2004	1	0
Zimpfer et al. ²⁹	Austria	2006	1	0
Senay et al. ³⁰	Turkey	2007	1	0
Palma et al. ³¹	Brazil	2007	1	0
Metcalf et al. ²⁵	UK	2011	1	0
Series				
Ye et al. ²⁶	China	2011	10	10

Conclusion and Discussion

- **Endovascular treatment ascending aorta feasible**
 - **Dedicated devices essential**
 - **Insufficient data to define outcomes**
 - **Proof of concept in compassionate use**
 - **Real challenge is how to expand use**