

When Is The Best Timing For TEVAR In Acute Type B Aortic Dissection

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Professor of Vascular Surgery

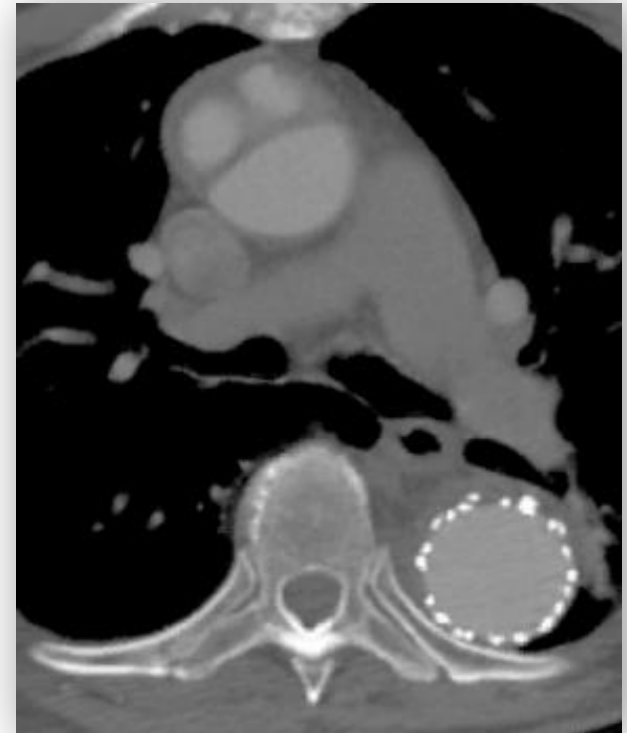
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- **Disclosure**
- Speaker name:
- Ian Loftus
- I have the following potential conflicts of interest to report:
- Consulting/Speaker Fees/Proctor/Research Grants
 - Endologix
 - **Medtronic**
 - Abbott
 - Covidien
 - Cook Medical
- Shareholder in a healthcare company: Inotec



Retrograde Type A Dissection

- Systematic review of RTAD
 - 38 reports, 9894 patients
- Significantly higher risk in acute dissection
 - AAD 8.4%
 - CAD 3.4%
 - TAA 0.9%
- Mortality ~35%



Canaud et al; Annals Surg 2014

Issues Relating To Timing Of Intervention

- Delay might allow aorta to stabilise
- Is there a cohort who might benefit from delayed vs emergent TEVAR
- Does early TEVAR pose the same risk, independent on presentation
- Will delayed intervention affect remodelling, and long term outcomes



The Virtue Registry

Eur J Vasc Endovasc Surg (2011) 41, 159–166



The VIRTUE Registry of Type B Thoracic Dissections – Study Design and Early Results

The VIRTUE Registry Investigators^{a,b}

St George's Vascular Institute, 4th Floor St James Wing, St George's Hospital, London SW17 0QT, UK

Submitted 23 June 2010; accepted 17 August 2010
Available online 16 October 2010

KEYWORDS

Endovascular;
Type B dissection;
Mortality;
Tumescent anaesthesia;
Stroke;
Paraplegia

Abstract *Introduction:* Endovascular procedures for repair of Type B aortic dissection have become increasingly common and are often considered to be first line therapy for acute complicated dissections. The long term durability of these repairs is largely undefined.

Methods: The Virtue Registry is a prospective, non-randomised, multi centre European Clinical Registry designed to inform on the clinical and morphological outcomes of 100 patients with Type B aortic dissection treated with the Medtronic Valiant thoracic stent graft. Patients with acute, sub-acute and chronic Type B dissections will be prospectively followed for three years. Clinical outcomes and aortic morphology will be defined.

Results: Fifty patients had an acute dissection, 24 a sub-acute dissection and 26 a chronic lesion. The 30-day mortality for the acute, sub-acute and chronic lesions was 8%, 0% and 0%. The in hospital composite outcome (mortality, stroke or paraplegia) for the three groups was 16%, 0% and 3.8% respectively. The effect of left subclavian artery (LSCA) revascularisation was defined with the composite endpoint of patients with a covered, non-revascularised LSCA being 20% as compared to 5.8% in the covered, revascularised group.

Conclusion: The early outcomes for the treatment of Type B aortic dissection are reported in the Virtue Registry. Longer term follow-up is planned to report on clinical and morphological outcomes up to 36 months post-procedure.

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Introduction

Each year in Europe an estimated sixteen thousand people are diagnosed with descending thoracic aortic pathology. Endovascular stent grafts promise a minimally invasive approach for the management of thoracic aortic disease and contemporary results suggest that endovascular procedures may be utilised as first line therapy for many thoracic aortic pathologies.¹ The literature for the endovascular treatment of the thoracic aorta is not well formed

^a Correspondence to: Matt Thompson, Tel.: +44 208 725 3205; fax: +44 208 725 3495.

^b E-mail address: matt.thompson@stgeorges.nhs.uk.

^c For Contributing centres with lead investigator and number of patients recruited refer to Appendix A.

	Acute (n=50)	Sub-Acute (n=24)	Chronic (n=26)
Mortality 30d (%)	8	0	0
Stroke (%)	8	0	0
SCI (%)	2	0	3.8

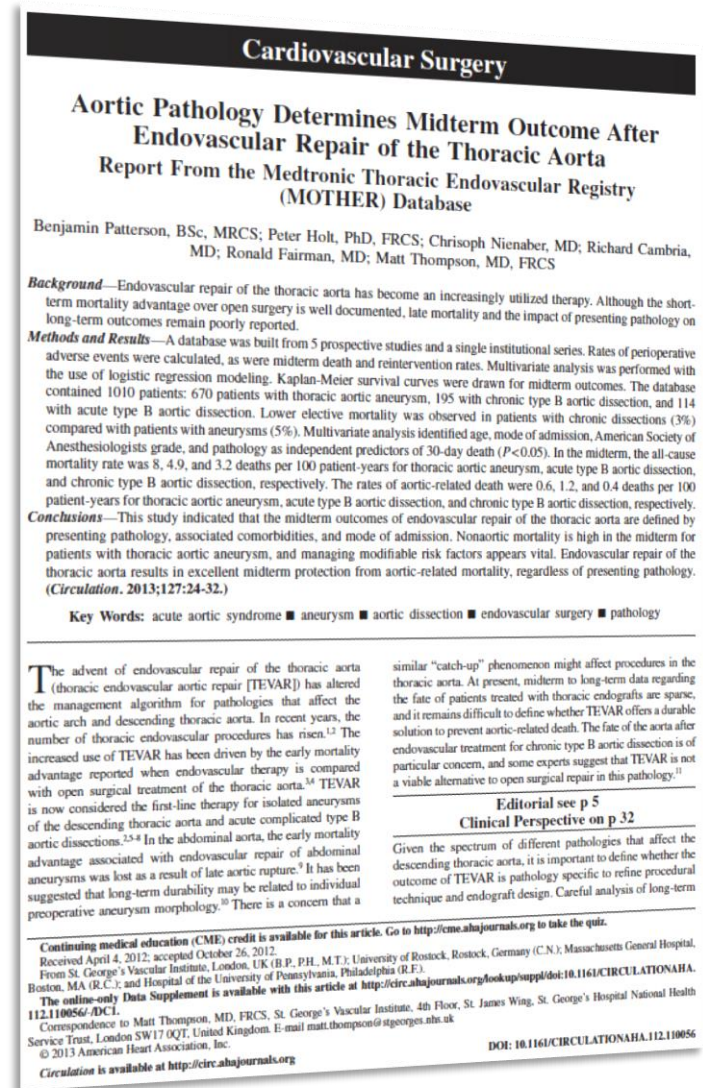
Early Outcomes For TEVAR in TBAD

- Acute complicated TBAD
 - 102 patients
 - 9 deaths
 - 3 paraplegias, 6 strokes
- Sub-acute complicated TBAD
 - 22 patients
 - No deaths/neurological complications

Steuer et al; Eur J Vasc Endovasc Surg 2013

MOTHER Registry

- >1000 cases
- Prospective data collection
- Adjudicated adverse events
- Sub group analysis
 - Acute TBAD
 - Factors that influence outcomes in short, mid and long term



Clinical Presentation

- ‘Soft’ versus ‘hard’ indications for immediate intervention
 - BP / pain / interval expansion
 - Rupture / malperfusion



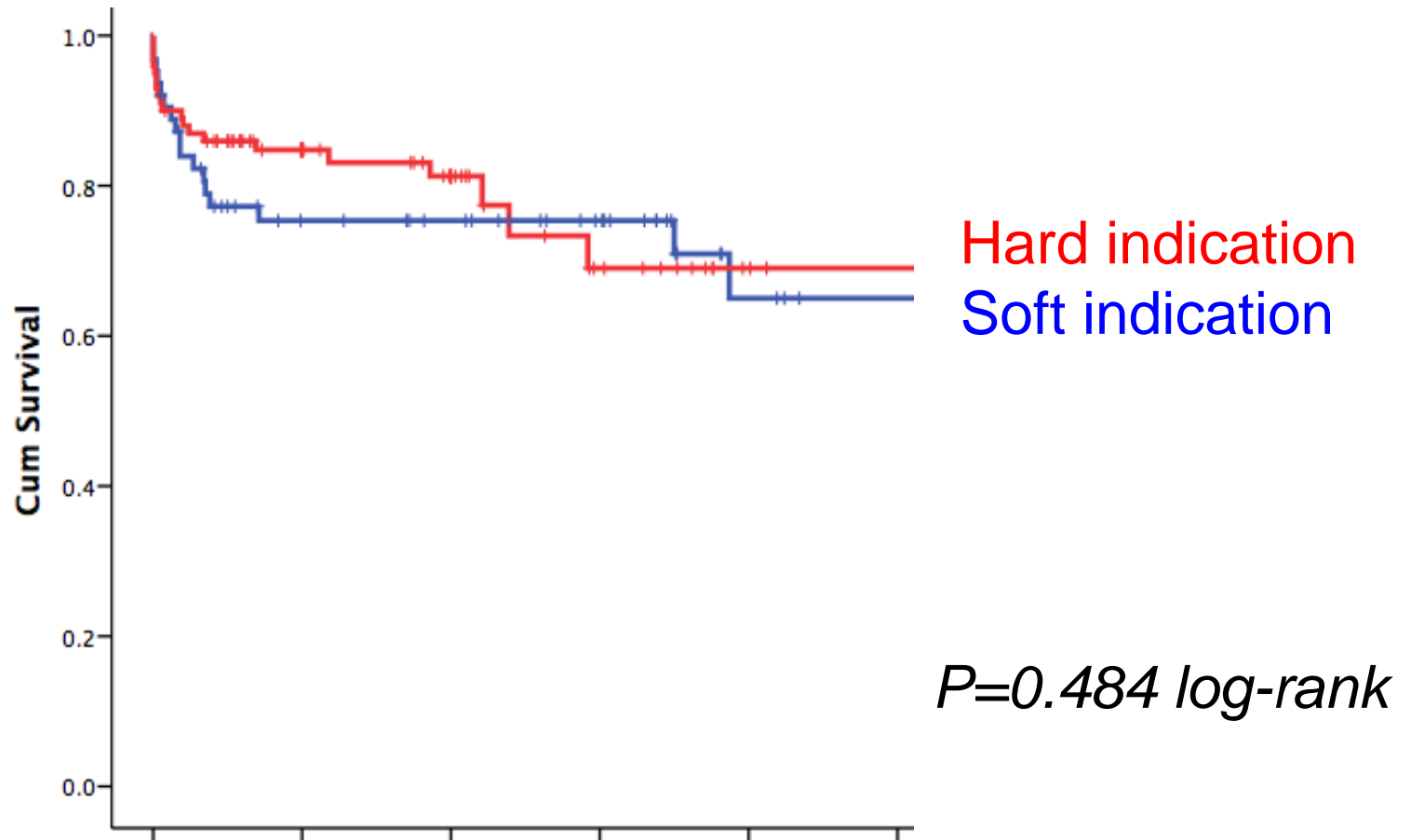
Mother: 30 Day Outcomes (n=164)

	BP / Pain / Expansion (n=63)	Malperfusion / Rupture (n=101)
30-day death	6 (9.5)	11 (10.9)
30-day stroke	4 (6.3)	8 (7.9)
30-day SCI	1 (1.6)	2 (2)

Mother: Early Cause of Death

		Pain / BP / Expansion (n=63)	Rupture / Malperfusion (n=101)
30-day mortality	Aortic	4 (6.3)	7 (6.9)
	Non-aortic	2 (3.2)	4 (3.9)

Indication and Mid Term Death



Mother: Mid-Term Cause of Death

		Pain / BP / Expansion (n=12/57)	Rupture / Malperfusion (n=12/90)
Mid-term mortality (>30 days)	Aortic	5 (8.8%)	1 (1%)
	Respiratory	1 (1.7%)	1 (1%)
	Neurological	0	1 (1%)
	Sepsis	0	1 (1%)
	Unknown	6 (10.5%)	6 (6.7%)

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Aortic Re-modelling

- Essential for good long term outcomes
- Measures at different aortic levels:
 - True/false lumen index
 - True lumen diameter
 - False lumen diameter
 - False lumen thrombosis

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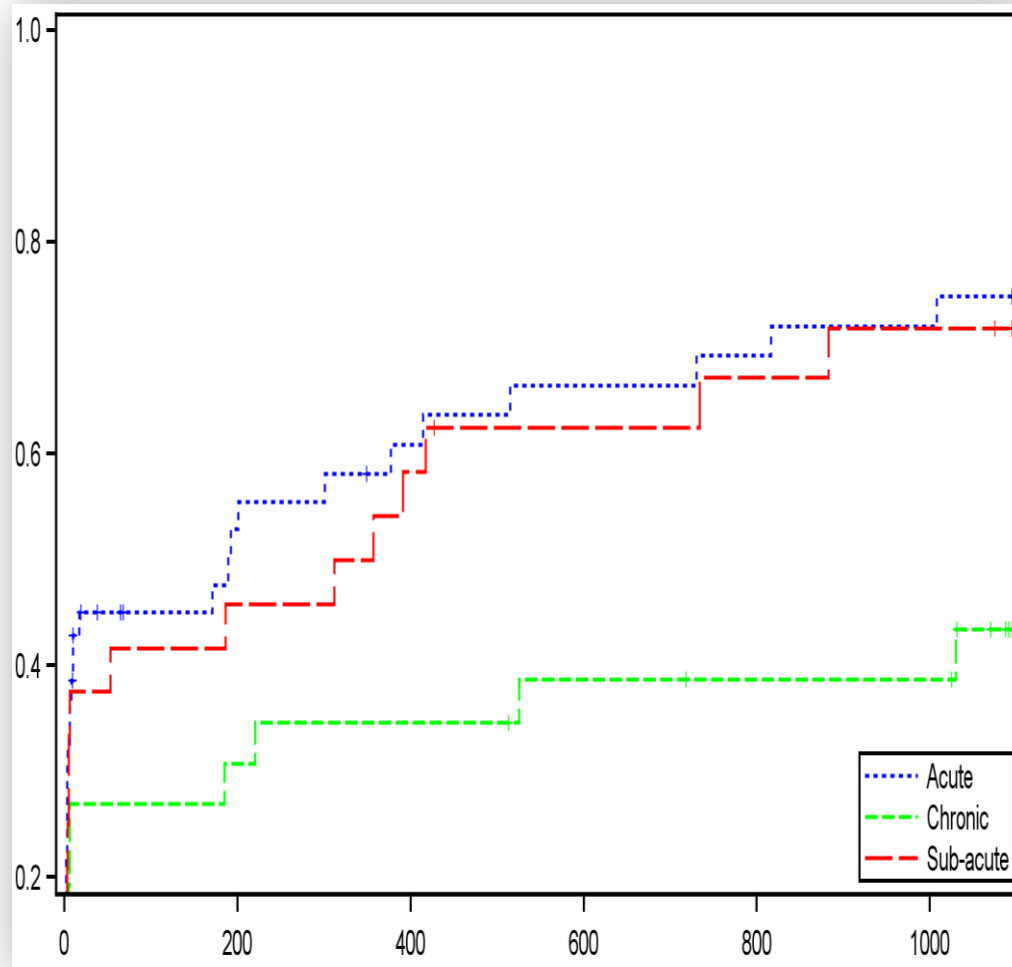
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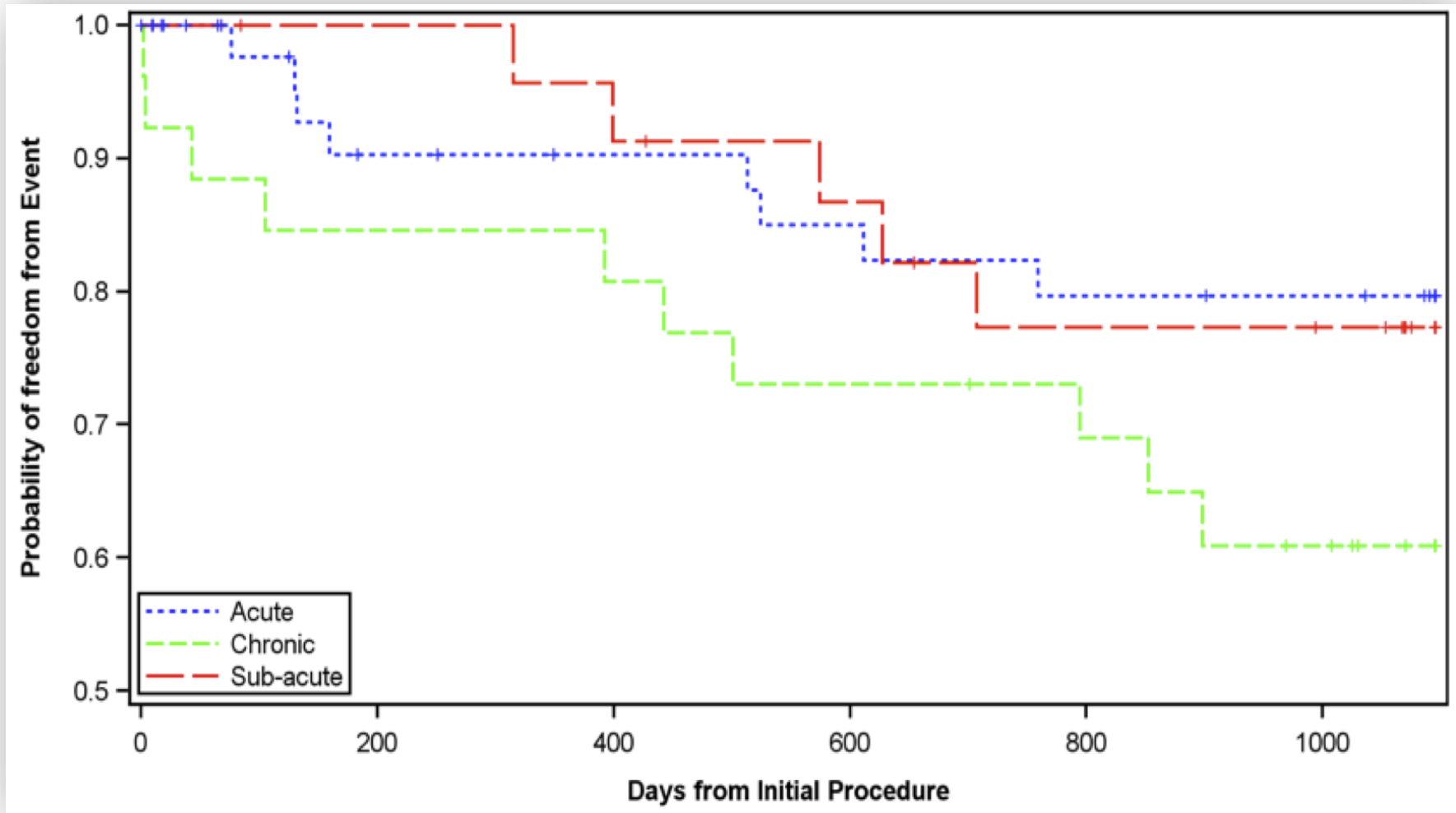
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1078-5884/\$36 © 2010 Published by Elsevier Ltd on behalf of European Society for Vascular Surgery.
doi:10.1016/j.ejvs.2010.08.016

False Lumen Thrombosis (3 years): *Diaphragm*



Virtue: Aortic Related Interventions



Aortic Related Re-intervention

	Acute (n=50)	Sub-Acute (n=24)	Chronic (n=26)
TEVR extension	4 (8%)	4 (16.7%)	8 (30.8%)
Open AAA repair	2 (4%)	0	0
Remodelling	1 (2%)	0	1 (3.8%)
LSA plug	1 (2%)	1 (4.2%)	0

Conclusions

- Early outcomes for sub-acute better than acute TBD
- Long term outcomes/re-modelling similar
- Consider delay intervention >2 weeks unless 'hard' indication
- 'Softer' indications are not more benign
- Care that we don't increase non-operative mortality
- Close monitoring until intervention
- Further work required ?clinical trial