TEVAR Outcomes in Blunt Thoracic Aortic Injury

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Presented by:

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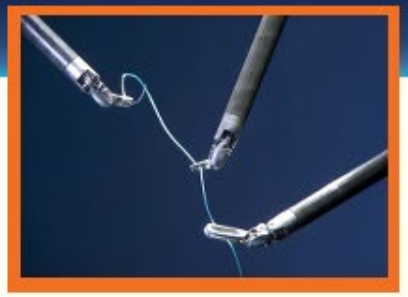

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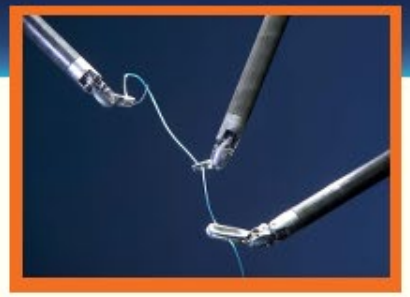
Disclosures

- None



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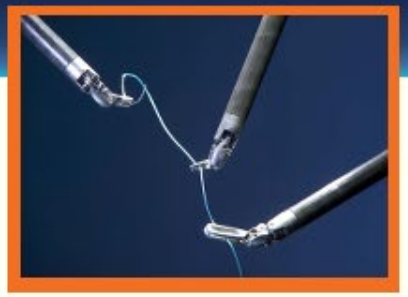
Introduction

- TEVAR has been the gold standard for blunt thoracic aortic injuries
- Despite improvements in technique and devices, long-term data on outcomes remains scarce
- Surveillance post-TEVAR has been debated along with associated complications



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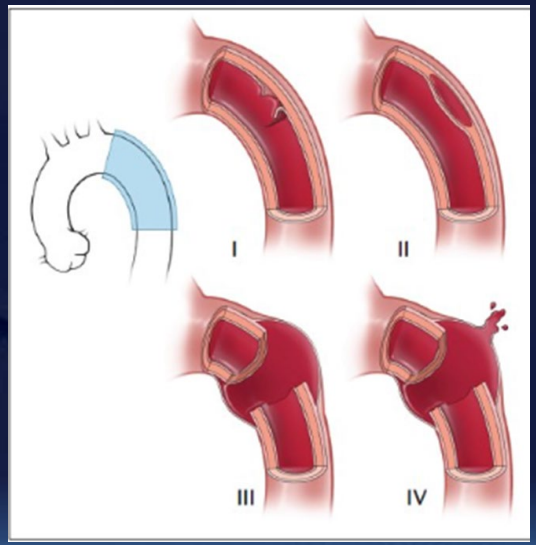
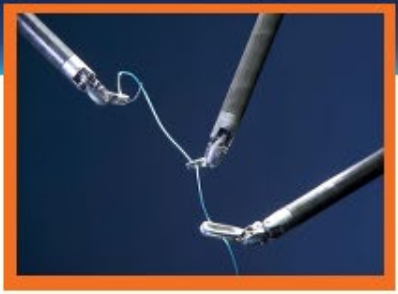
Introduction

- Blunt thoracic aortic injury remains rare and occurs in about 1-2% of high mechanism blunt injuries
- Grade III aortic injuries account for about 47% of blunt thoracic aortic injuries
- Grade IV about 2-19%





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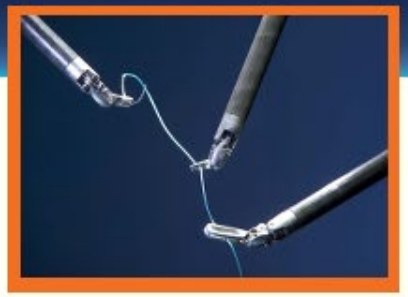
Device

- Our institution participated in the original GORE device trial for TEVAR (2009)
- Unibody was used in all patients



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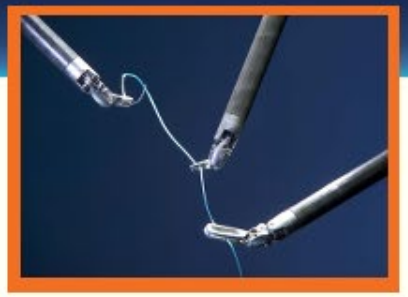
Aim

To assess post TEVAR long-term survivability and freedom from procedure related complications



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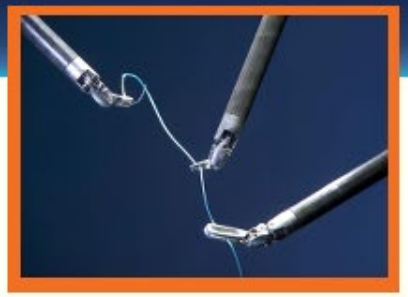
Methods

- Retrospective observational study
- April 2010 – April 2022
- All blunt aortic injuries Grade III and IV that underwent TEVAR
- University of Florida, Jacksonville
- Data analyzed with Kaplan Meier curve for survivability



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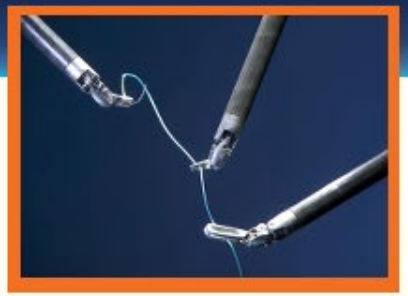
Methods

- TEVAR complications assessed: Endoleak, migration, occlusion, spinal cord ischemia, left upper extremity ischemia or vertebral insufficiency

- Primary Outcome
  - Overall Survival

- Secondary outcome
  - TEVAR related complications



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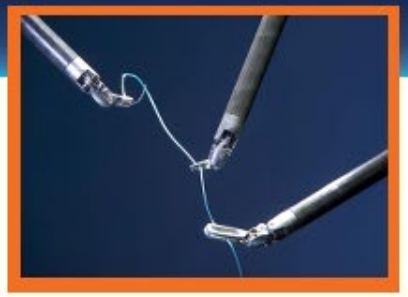
Demographics

Variable	Result
Age (median, years)	50.3 years
Sex	Male: 32 (70%) Female: 14 (30%)
SVS Injury Grade	
	Grade III: 37 (80%)
	Grade IV: 2 (4%)
	Uncharacterized: 7 (16%)
Concomitant injuries	45 (98%)
Injury location	Aortic isthmus (100%)
Mechanism of injury	High- energy blunt mechanism



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Results

Total Patients

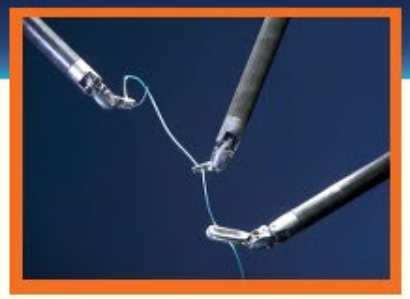
N = 46

Overall Survival

n = 44

Deaths

n = 2



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Results

Total Patients

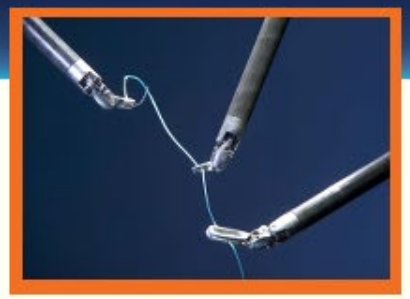
N = 46

Subclavian coverage

n = 13

Subclavian preserved

n = 33



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Results

Total Patients

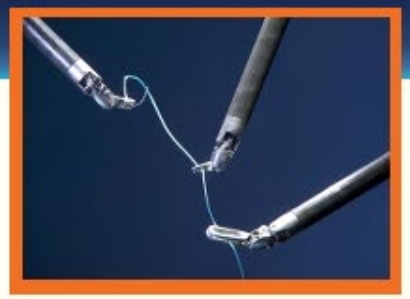
N = 46

No Complications

n = 46

Complications (directly TEVAR related)

n = 0



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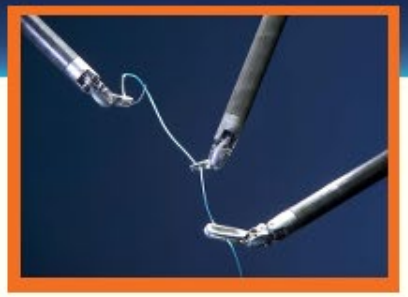
Results

Overall, 31 patients (67%) had follow-up imaging

Of these:

- 24 (77%) underwent imaging at one year
- 17 (71%) had imaging ≥ 7 years
- 15 (63%) ≥ 9 years
- 9 (38%) ≥ 11 years

Median > 7 years



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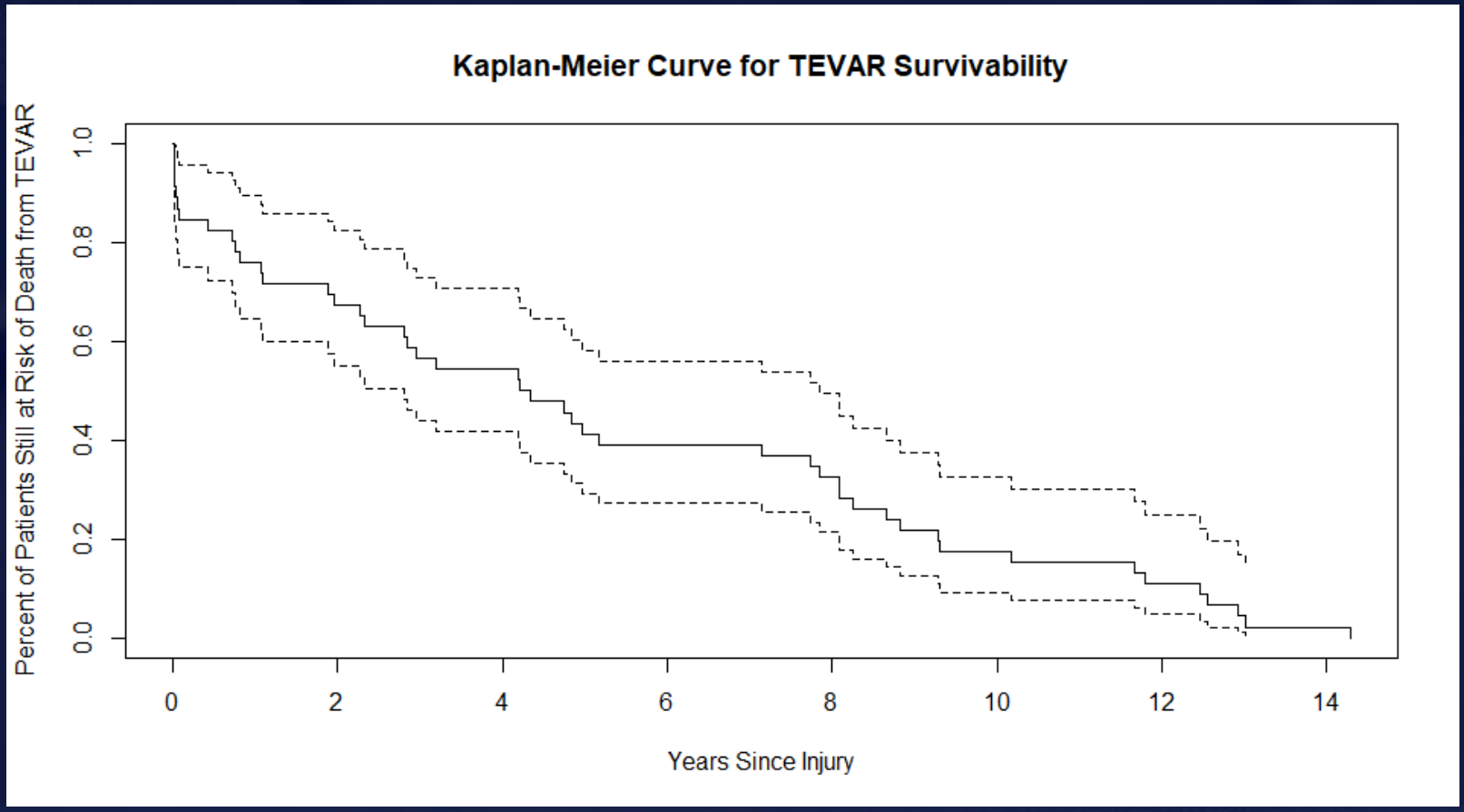
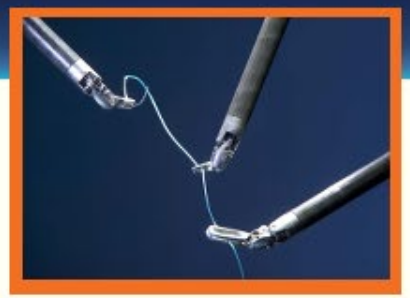
Results





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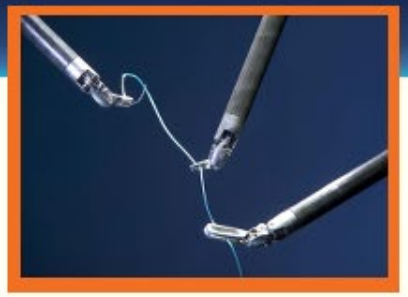
Results

- No TEVAR related complications identified
  - Longest follow-up: 15.9 years with imaging
- Overall, 1 year survival 92% (mortality not related to TEVAR or aortic injury)
- No deaths related to TEVAR/aortic complications in >15 years



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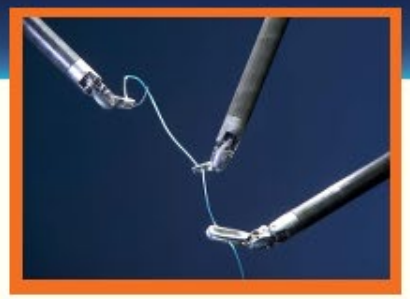
Limitations

- Single-center study
- Retrospective study
- Small sample size
- Follow-up in trauma patients
- Single device used



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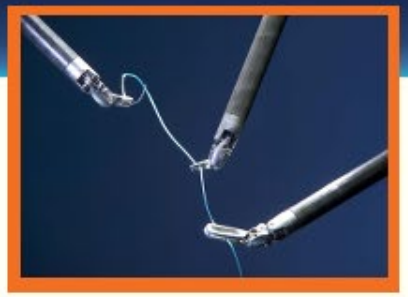
Conclusion

- Reinforces TEVAR as a safe, reliable and long-term solution for BTAI
- Surveillance imaging frequency can be decreased after stable findings 1 year post-TEVAR
  - Consider every 2-3 years after the first year of surveillance



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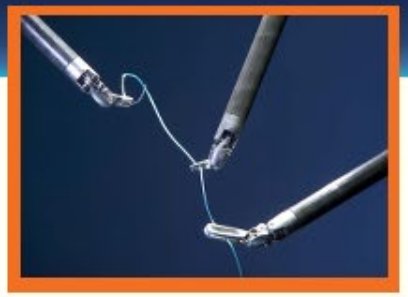

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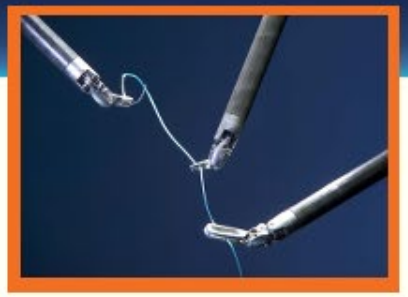

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