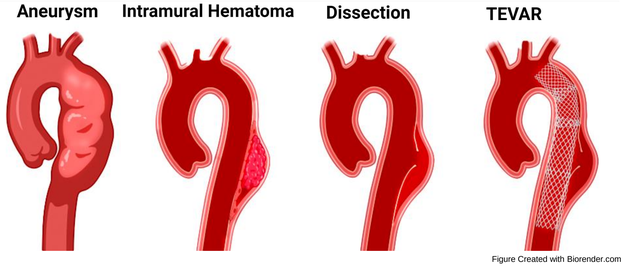
Trends in Thoracic Endovascular Aortic Repair in Patients 45 Years Old and Younger

Alexander Chen, D.O., Brandon Diaz, M.D., Graham W. Long, M.D, Diane Studzinski, BS, Rose Callahan, MS, O. William Brown, M.D., J.D.
Corewell Health East – William Beaumont University Hospital
Royal Oak, Michigan

Introduction

Acute aortic syndrome encompasses various conditions affecting the aorta, including aortic dissection, ruptured aneurysm, intramural hematoma and penetrating aortic ulcer. Thoracic endovascular aortic repair (TEVAR) has become the preferred method of repair for most thoracic aortic pathology. Though there is substantial data regarding its use, limited data is currently available regarding optimal surveillance in patients 45 years of age and younger.



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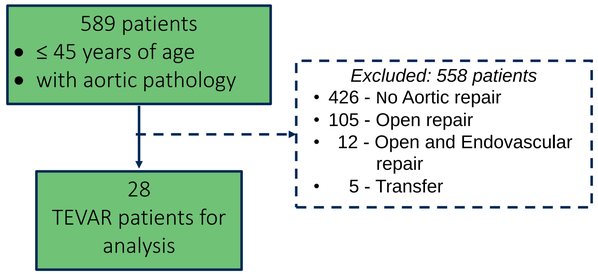
Methods

Retrospective Review, Single Institution

Inclusion:

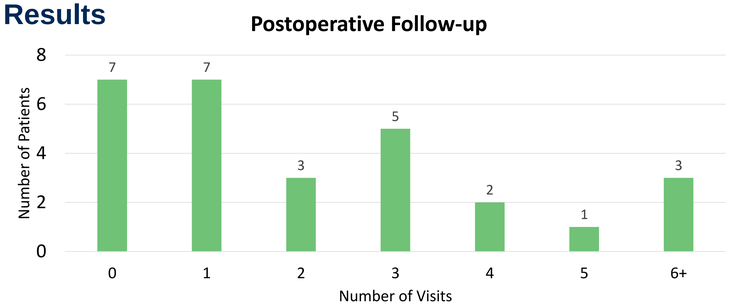
- ICD-10 diagnosis of aortic pathology on admission
- Patients < 45 years-old treated with TEVAR
- July 2006 to December 2022
- Descriptive analysis was performed using Graphpad Prism v9.5.1

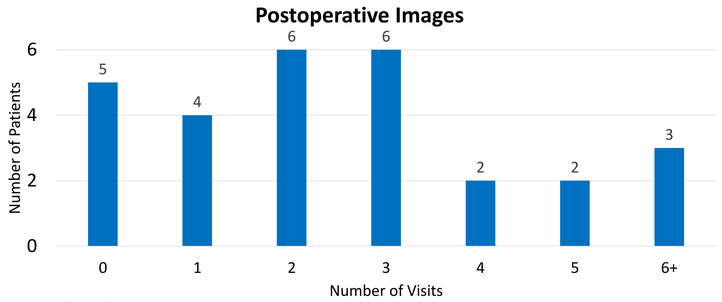


Results

Demographics and Comorbidities		TEVAR patients ≤ age 45 N=28
Male sex n(%)		21 (75)
Age at admission, years median (IQR)		33.0 (24.5 - 40.8)
BMI mean (SD)		27.9 (5.5)
Diagnosis		
Root Ectasia/ Aneurysm		0
Thoracic Ectasia/Aneurysm		1 (3.6)
Thoracic Aortic Dissection		11 (49.3)
Traumatic disruption of the thoracic aorta		15 (53.6)
Thoracic penetrating aortic ulcer		1 (3.6)
Abdominal Aortic Aneurysm		0
Abdominal Aortic Dissection		0
Abdominal Penetrating Aortic Ulcer		0
Aortitis		0
Comorbidities		
Hypertension		10 (35.7)
Hyperlipidemia		0 (0.0)
Diabetes mellitus		1 (3.6)
Coronary artery disease		0 (0.0)
Asthma/COPD		1 (3.6)
Chronic kidney disease		3 (10.7)
Smoking	Never	11 (39.3)
	Current	8 (28.6)
	Former	7 (25)
	Not assessed	2 (7.1)
Recreational drug use		4 (14.3)
Outcomes		
Complications		
Endoleak within 7 days		**5(17.9)**
Cardiac Event		**5 (16.7)**
Renal Failure		**7 (23.3)**
Spinal Cord Ischemia		**1 (3.3)**
CVA		**0**
Graft infection		**0**
Graft Failure		**3 (10)**
Limb Ischemia		**3 (10)**
Multisystem organ Failure		**3 (10)**
Lost to Follow up		7 (25)
Observed		21 (75)
Reintervention		4
Endovascular		1 (4.3)
Open		3 (17.4)
Median time to intervention		3.7 months
Death within 30 days		3 (10.7)
Mean time		4.3 days (± 3.8)
Mean Age		37.5 years (± 8.5)

Results





Conclusions

- Patients who undergo TEVAR for underlying aortic pathologies, especially young patients, are prone to loss to follow up
- In this cohort of young patients, we lost 7 patients to follow up
- Of those that did follow up, only 4 needed reintervention with most reinterventions (80%) occurring within 1 year.
- No patients with traumatic aortic disruption who underwent TEVAR required any reintervention by follow-up imaging. These patients may not require surveillance past one year.

References

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