

10-year outcome of the Thoracic Endovascular Aortic Repair (TEVAR) Procedure (Poster)

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10-year outcome of the Thoracic Endovascular Aortic Repair (TEVAR) Procedure

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OVERVIEW

- Purpose:** The goal of the study was to assess the positive and negative outcomes of the TEVAR procedure in hopes of identifying recurrent issues.
- TEVAR has been FDA approved and implemented at Lehigh Valley Health Network (LVHN) since 2006.
- TEVAR is used to treat aneurysms and dissections in the descending aorta and/or the aortic arch¹. The Cardiothoracic surgeon accesses the aorta via the femoral artery. This is referred to as the Transfemoral (TF) approach and is the preferred method, although other methods of access are sometimes implemented. Several catheters are guided through the arteries to the aortic aneurysm/dissection. The catheters and stent are monitored using X-rays and ultrasounds. Once the stent is positioned properly, it is deployed (expanded) to fit the aorta and act as a new vessel through which blood can flow². The aneurysm will eventually shrink in the most successful cases.

METHODS & DEMOGRAPHICS

- This was a retrospective study that included 80 procedures performed on 76 patients at LVHN. The interval of study was from April 2006 to March 2016.
- Patients were followed-up with post-operatively in the Cardiothoracic office. CT scans were performed at the time of each follow-up in order to check the status of the graft implant.
- Data collection for this study consisted of reviewing the CT scan report at each follow-up and recording any complications with the graft or lack thereof.
 - Complications include leakage or migration of the graft implant³

DEMOGRAPHICS OF TEVAR PATIENTS

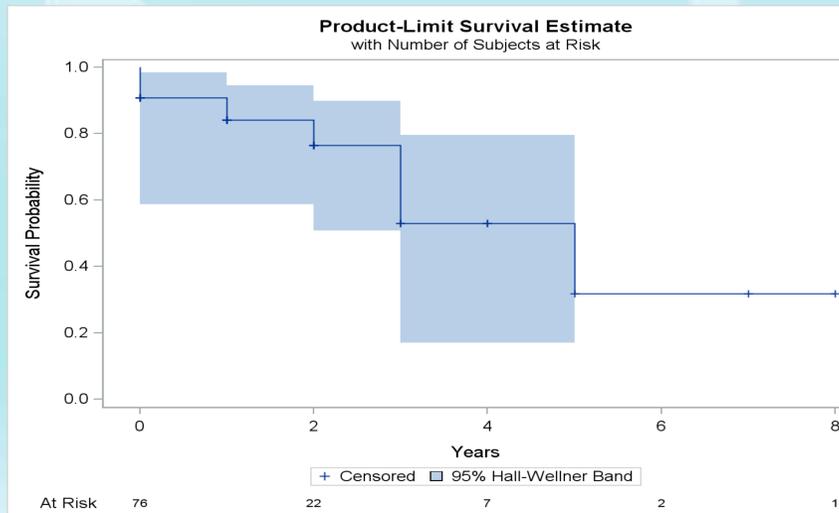
Number of Patients (n)	N = 76
Age (Years), Range	Mean Age = 83, Range = (18 – 88)
Sex (Male or Female)	Male = 46 Female = 30

- Table 2: representing the variables analyzed in this study and their results

Table 2: Comorbidities

Hypertension – 80.26% (61/76)
Obesity – 17.11% (13/76)
Diabetes – 14.47% (11/76)
Kidney Disease – (acute 9.21%), (chronic 15.79%), (kidney failure 2.63%)
Smoking history – 61.84% (47/76)
Readmission within 90 days – 36.84% (28/76)
Aneurysm shrinkage – 25% (13/76)

OUTCOMES



- Kaplan Meier curve representing if a patient has a TEVAR complication, there survival probability

Table 3: Patient status at time of follow-up

What was the patient's status at the time of follow-up	Survival(Did the patient survive?)		
	Dead	Survival	Total
Did Not Experience TEVAR Complication by the End of Follow-up	17 22.37 29.31 68.00	41 53.95 70.69 80.39	58 76.32
Experienced TEVAR Complication	8 10.53 44.44 32.00	10 13.16 55.56 19.61	18 23.68
Total	25 32.89	51 67.11	76 100.00

- Table 3: representing patients status at time of follow-up

- Table 4: Patients experiencing neurological complications post-operatively

Table 4: Neurological Complications

- Hemiparesis – 1.40% (1/76)
- Weakness of the lower extremities – 1.40% (1/76)

RESULTS

- 51 of the patients survived and 25 of them died
- A total of 2 patients (8%) experienced TEVAR related deaths . One patient died during surgery while another patient died post-operatively due to a faulty graft and subsequent aneurysm.
- Of the 76 patients 58 (76.32%) of them did not experience a complication at time of follow-up.
- A total of 13 patients, around 25%, did report a shrinkage of their aneurysm at time of follow-up. At time of follow-up 39 (75%) did not report a shrinkage. Also, 24 of the patients had a unknown size of their aneurysm post-operatively.
- In the Kaplan-Meier curve as the years increase the survival probability decreases. So, at 5 years post-operatively the median survival is 50%.
- Of the 18 (23.68) patients who did experience a complication 10 (13.16%) of them survived and 8 (10.53%) of them died.
- 1 patient out of the 76 patients experienced right hemiplegia and subsequent death 5 months after the procedure, and 1 patient experienced weakness in the lower body

CONCLUSIONS

TEVAR is well tolerated in a patient population with high co-morbid conditions. Ten out of eighteen of the patients who did experience a complication during follow-up experienced it within two years post-operatively of the procedure. LVHN or the manufacturers should look into a better implantation method or device material that better suits the needs of the patient. The data shows that the patients who did not experience complications had a higher chance of survival. Patients and LVHN should minimize risk factors that contribute to post-operative problems. (Obesity, Smoking, etc.). Also, patients should make sure to follow-up with their physician well after the procedure has been completed.

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