

4. **The Impact of TEVAR Use on an Established Thoracic Aortic Surgical Service**

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OBJECTIVE: The availability of thoracic endografts (TEVAR) has expanded the options for treating thoracic aortic pathologies. Most TEVAR reports have focused on TEVAR results or TEVAR results compared to open results rather than what utility TEVAR adds to treatment options. This report describes how TEVAR has been incorporated into an active thoracic aortic surgical service, what the problems and outcomes have been, and how TEVAR has changed our approach to treatment.

METHODS: From a concurrently maintained database of 733 patients treated for thoracoabdominal aortic disease we evaluated 145 patients with treatment confined to the distal arch and descending thoracic aorta (TAA). Our standard spinal cord protection protocol of steroids, spinal fluid drainage, hypothermia and naloxone was used. We looked at outcomes overall and between two Eras: ERA 1 before TEVAR, ERA 2 after TEVAR. We evaluated mortality, paraplegia, length of stay (LOS) and use of TEVAR for traumatic injuries (TAT), dissection, plaque hemorrhage or mural thrombus (TAD) as well as degenerative TAA.

RESULTS: Of the 145 TAA patients 55 (38%) had TEVAR. Mean age was 55.7 years and 88 (61%) were male. Forty-nine (33.8%) were traumatic injuries (TAT), 21 (14.5%) had dissection, plaque hemorrhage or mural hematoma (TAD), 85 (51.7%) had degenerative aneurysms, 74 (51%) were acute, 8 (5.5%) involved the arch and 6 of these required hypothermic circulatory arrest (HCA) for repair. Nine patients (6.2%) died during hospitalization (elective 1/71, 1.41%; acute 8/74, 10.8%). One patient (0.7%) was paraplegic.

Since introducing TEVAR (ERA 2) 62% (26/42) of TAAs, 77% (10/13) of TAD and 69% (11/16) of TAT were treated with TEVAR. The mortality declined to 1.47%, (1/68, $P=0.0337$; acute 0/26; elective 1/42, 2.38%) and length of stay declined from 20.4 to 9.2 days ($P<0.0001$). However in a multivariate model for mortality, age, preoperative creatinine and acute were significant ($P<0.02$), but ERA was not ($P=0.0705$).

CONCLUSION: TEVAR is perceived as a useful option to treat acute and chronic thoracic aortic pathologies; it shortens length of stay and appears to improve mortality, but it is unclear statistically if the mortality benefit is real.