LSA Transposition and Bypass in Association with TEVAR Are Not Benin Procedures Although They Have Durable Patency
Mark K. Eskandari, MD

Background:
Strategies to preserve flow into the left subclavian artery in conjunction with thoracic endovascular aortic repair (TEVAR) include subclavian-carotid transposition and carotid-subclavian bypass. The purpose of this study is to compare the short and long term outcomes of both approaches.

Methods:
Single center, retrospective review from April 2000-July 2012 of 62 patients that have undergone combined left subclavian artery revascularization and TEVAR. Indications for TEVAR included degenerative aneurysm, pseudoaneurysm, rupture, traumatic aortic injury, dissection, or penetrating aortic ulcer. Analyzed outcomes include death, stroke, patency, cranial nerve injury, phrenic nerve injury, and re-operative surgery.

Results:
Forty patients underwent subclavian transposition and 22 had a carotid-subclavian bypass with proximal arterial endovascular embolization. Among the entire cohort the 30-day death, stroke, and cranial nerve injury rates were 10% (4/40) for the transposition group and 13% (3/22) for the bypass group. The 30-day event rates for transposition were not significantly different from the bypass group (p=0.21). Over a mean follow-up period of 32 months (range 2-146), the long term mortality was 13% (5/40) in the transposition group and 18% (4/22) in the bypass group. There was 1 stroke (MCA territory) in each group, neither being in the posterior circulation. Two (5%) patients required re-operative management in the transposition group, one due to postoperative hematoma, and the other lymph leak requiring thoracic duct ligation. In the bypass group, 1 (4.5%) patient required evacuation of hematoma, re-do anastamosis and muscle flap. Two (5%) patients required surgery for vocal cord paralysis in the transposition group, 1 (4.5%) in the bypass group. There were 2 (5%) phrenic nerve injuries in the transposition group, none in the bypass group. Patency was 100% in both groups on long term follow-up.

Conclusion:
Left subclavian revascularization combined with TEVAR when planned zone 2 coverage is anticipated can be accomplished by subclavian transposition or carotid subclavian bypass with proximal embolization. Comparable early and mid-term results with excellent patency rates can be seen with both surgical options.