TYPE A AORTIC DISSECTION AT A DIAMETER <5.5 CENTIMETERS: DOES MODERATE ENLARGEMENT OF THE AORTIC ROOT CARRY GREATER RISK THAN MODERATE SUPRACORONARY ASCENDING AORTIC ENLARGEMENT?

Poster Contributions
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Background: Previous work has demonstrated that >50% of acute type A aortic dissections (ATAD) occur at a maximal aortic diameter (MAD) <5.5 cm. However, no study to date has investigated whether the risk for ATAD at smaller aortic diameters is more common with modest dilation of the aortic root (AR) versus the supracoronary ascending aorta (AA), as increased risk with a specific aortic segment may have implications for future guidelines regarding elective aortic replacement.

Methods: Using the International Registry of Acute Aortic Dissection (IRAD) database, n=586 ATAD patients with MAD <5.5 cm were identified, representing 44% (n=586/1,324) of ATAD in the database. Patients were stratified according to whether or not the largest proximal aortic segment at the time of dissection was the AR or AA. Patients with genetically-triggered aortopathy were excluded as current guidelines dictate aortic replacement at smaller diameters in these patients. Demographics and MAD at time of dissection were compared between AR and AA groups. Secondary outcomes included operation performed, 30-day/in hospital outcomes, and long-term survival between groups.

Results: Of patients with ATAD at a MAD <5.5 cm, 80.5% (n=472) were in the AA group and 19.5% (n=114) in the AR group. Modestly dilated AR dissected at a significantly smaller diameter than modestly dilated AA (median AR MAD 4.6 cm [IQR: 4.1-5.0] vs median AA MAD 4.8 cm [IQR: 4.4-5.1], p=0.02). AR patients were significantly younger than AA patients (58.7±12.5 vs 63.5±12.9 years; p < 0.01) and more commonly male (83% vs 66%; p<0.01). Notably, only 37% (n=32) of AR patients underwent aortic root replacement. 30-day mortality and major morbidity, as well as long-term survival, did not differ between groups.

Conclusions: ATAD appears to occur at smaller diameters in patients with modest dilation of the aortic root vs the supracoronary ascending aorta (4.6 vs 4.8 cm), arguing for a change in elective repair criteria to 5.0 cm in patients with non-genetically triggered aortic root aneurysm. The performance of aortic root replacement in ATAD patients with AR dilation appears to be underutilized.