

## **Abnormal Dilation of the Ascending and Descending Thoracic Aorta is Associated with Features of Atherosclerosis on Non-contrast CT**

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**Background:** The role of atherosclerosis in abnormal dilation of the thoracic aorta (TA) is controversial and recent studies have suggested little or no association. The TA is included in non-contrast gated computed tomography (CT) obtained for assessment of coronary artery calcium (CAC), and therefore such scans provide an opportunity to readdress this issue.

**Methods and Results:** A total 3,283 consecutive adults with low likelihood of coronary artery disease testing were studied. Upper 95% CI of normative values of thoracic ascending aorta (TAA) and thoracic descending (TDA) aorta diameter were used to define abnormal aortic dilation. Risk factor-adjusted logistic regression models were used to assess the association between calcification in different segments of the TA and abnormal TAA or TDA dilation. Abnormal dilation of the TAA, TDA or both were identified in 198 (6%), 200 (6%) and 63 (2%) patients, respectively. After adjustment for other risk factors, any arch calcification was independently associated with abnormal TAA dilation (OR=1.45, p=0.02) and any TDA calcification was independently associated with abnormal TDA dilation (OR=1.54, p=0.01).

**Conclusion:** Abnormal dilation of the TA is strongly associated with evidence of TA atherosclerosis by non-contrast gated cardiac CT. Further studies regarding possible diagnostic and therapeutic implications are warranted.