

ORAL PRESENTATION

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A simple and reliable tool to quantify calcium burden of ascending aorta

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Background

Ascending aorta calcific plaques represent a potential source of emboli during open-heart procedures. The aim of our study was to validate a simple and new technique to quantify aorta calcium burden.

Methods

Ten thoracic CT scans (TCMD General Electric Light-Speed VCT 64 Slices) of octogenarian subjects were analysed by two radiologists and one vascular surgeon, using the Osirix Pro Software. A 3D reconstruction of the ascending thoracic aorta was obtained from the annular plane to the origin of the innominate trunk. The outer curvature maximal length was measured; therefore this value was divided by ten Region Of Interest (ROI) points. At each ROI an exact perpendicular section of the aorta was obtained, whose calcium involvement was expressed as a percentage. The overall calcium burden was expressed as the mean of the ten measurements.

Results

Cronbach test estimate was 0.975. Intraclass correlation coefficient (ICC) was 0.927 (95% confidence limits = 0.904-0.946) with F test = 39.3 and $p < 0.001$.

Conclusion

Our technique represents a simple and effective way to provide quantitative assessment of ascending aorta calcium burden. There is an excellent intra-observer congruity with high reproducibility of measurements. This method may be particularly useful when screening optimal candidates for transcatheter aortic valve implantation.

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