**ANATOMY OF MAIN CORONARY ARTERY LOCATION: RADIAL POSITION AROUND THE AORTIC ROOT CIRCUMFERENCE**

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Objectives: Recent literature has emphasized the importance of this anatomic component in the orientation of coronary buttons for the composite graft operation, especially as regards of design of novel mechanical or biological composite grafts. Problems in orientation of reattached buttons can lead to life-threatening ischemia.

Background: There is a relative dearth of fundamental anatomic information regarding the radial component of right and left coronary ostial location along the circumference of the aortic root.

Methods and Results: We assessed the radial location of native coronary arteries by high-definition CT scan in 100 patients (75 aneurysm patients undergoing aortic root replacement and 25 control patients undergoing coronary artery bypass). We excluded 6 patients with unclear coronary anatomy and one with an anomalous origin. The center point of the aortic lumen was located, radii drawn from there to each coronary ostium, and the angle computed geometrically. The mean angle between the radii for the right and left coronary ostia was approximately 123o. The angle was similar for aneurysm patients (121.6o) and for controls (126.5o). The angle showed very little variation among individuals for the overall group (SD 13.1o), for the aneurysm patients (SD 13.4o), for the controls (SD 12o).

Conclusions: The normal human angular separation between the right and left coronary ostia is approximately 123o. This anatomic relationship is different from that of porcine aorta. This anatomy needs to be borne in mind intra-operatively. This anatomic relationship can be used in the design of novel aortic root biological or composite grafts.

