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Sex differences in the diameter of coronary arteries

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Coronary artery disease is a major cause of human mortality. It is stated that females have worse outcomes than men following myocardial infarction and coronary revascularization. Gender differences in the coronary artery diameters have also been speculated as one of the reasons for the above outcome. However, because of possible confounding effects, such as the body size and heart weight, it is unclear if there is a true sex-specific effect on coronary arterial size. The present study was undertaken to investigate the sex differences in the diameter of coronary arteries in a group of adult Sri Lankan population. The diameters of the coronary arteries and their branches were measured at predetermined sites in a total of thirty four apparently healthy hearts obtained from cadavers during routine gross anatomy dissections. All measurements were taken using a sliding caliper capable of measuring to the nearest 0.01mm. The mean coronary arterial diameters were significantly smaller in females than in males. These differences persisted even after the diameters of coronary arteries were corrected for heart weight and body surface areas. Precise knowledge of the expected normal coronary arterial diameter at a given anatomic location is the first step towards developing a quantitative estimate of the severity of the coronary artery disease. This study provides a reference data set for adult Sri Lankans against which to compare the diameters of coronary arteries in various pathological conditions.