

8. CORONARY ARTERY ANOMALIES ^{1,2}

The heart is supplied by two main arteries known simply as the left coronary artery and the right coronary artery. Both arteries are branches of the largest artery in the body which is the aorta. The aorta in turn, arises from the left ventricle which is the main pumping chamber of the heart. The left and right coronary arteries originate from the left and right side respectively. Occasionally both arteries originate from the right side of the aorta. This anomaly or oddity is usually safe but in a few unfortunate cases can predispose to exercise related death making coronary artery anomalies the second commonest cause of death in young athletes (aged below 25 years) after the cardiomyopathies.

Warning symptoms are sometimes present and include chest pain or blackouts during physical exercise. The exact mechanism for the cause of death is not entirely certain but it is thought that the abnormal path taken by the artery causes it to “kink” or “become squashed” between large vessels which are greatly stretched with blood during exercise. The consequent loss of blood supply to the heart can lead to the development of a heart attack or electrical abnormality of the heart, producing sudden death.

Screening for this coronary artery anomaly is possible using ultra sound imaging of the heart, which is essentially the same equipment used to diagnose cardiomyopathy. In thin athletic individuals the aorta and the origins of both coronary arteries are easy to visualise. In those individuals with symptoms in whom the coronary arteries cannot be seen with the ultrasound, it is possible to perform a more detailed, yet non-invasive (not requiring introduction of needles or small tubes into the body) test known as a MRI (Magnetic Resonance Imaging) scan which is good in visualising the coronary arteries. Coronary artery anomalies may or may not run in families but the abnormality is always looked for when screening any individual with a family history of premature sudden death.

Treatment involves surgical plumbing of the left coronary artery to the left side of the aorta. Many other coronary anomalies have been described which are generally without the risk of exercise related death.

¹ The following medical information has been kindly provided by CRY and is available for download in the website: <http://www.c-r-y.org.uk>.

² The medical information contained in this website is provided for information only. It is not intended to replace a consultation with an appropriately qualified medical practitioner and should not be used for the diagnosis, treatment or management of a heart abnormality. If you would like more information or are concerned that you might be affected by any of the conditions described in this website you should seek professional medical help and/or consult your doctor.