CORONARY ARTERY DISEASES (MAGNETIC RESONANCE ANGIOGRAPHY VERSUS MULTISLICE CT ANGIOGRAPHY)

Essay
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of Master Degree in
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List of abbreviations

- **2D:** Two-dimensional.
- **3D:** Three-dimensional.
- **AHA:** American heart association.
- **AMI:** Acute myocardial infarction.
- **AV:** Atrio ventricular.
- **BH:** Breath hold.
- **CABG:** Coronary artery bypass graft.
- **CAD:** Coronary artery disease.
- **CS:** Calcium score.
- **DIR:** Double inversion recovery.
- **DTPA:** Diethyl triamine penta acetic acid.
- **DVR:** Direct volume rendering.
- **EBCT:** Electron beam computed tomography.
- **ECG:** Electrocardiogram.
- **FA:** Flip angle.
- **FOV:** Field of view.
- **GE:** Gradient echo sequence.
- **IHD:** Ischemic heart disease.
- **IMI:** Internal mammary artery.

- **IVUS:** Intravascular ultra sound.
- **LAD:** Left anterior descending.
- **LCA:** Left coronary artery.
- **LCX:** Left circumflex artery.
- **LDL:** Low density lipoprotein.
- **LV:** Left ventricle.
- **MDCT:** Multi detector computed tomography.
- **MIP:** Maximum intensity projection.
- **MPR:** Multi planar reformation.
- **MRA:** Magnetic resonance angiography.
- **MSCT:** Multi slice computed tomography.
- **NAV:** Navigator technique.
- **PCI:** Percutaneous coronary intervention.
- **PDA:** Posterior descending artery.
- **RCA:** Right coronary artery.
- **RV:** Right ventricle.
- **SE:** Spin echo sequence.
- **SSD:** Shaded surface display.
- **SVC:** Superior Vena Cava.
- **TR:** Time to repeat.
- **VRT:** Volume rendering technique.

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GROSS ANATOMY OF THE CORONARY ARTERY

The heart is a hollow muscular organ of a somewhat conical form; it lies between the lungs in the middle mediastinum and is enclosed in the pericardium. The heart is subdivided by septa into right and left halves, and a constriction subdivides each half of the organ into two cavities, the upper cavity being called the atrium, the lower the ventricle. The heart therefore consists of four chambers, right and left atria, and right and left ventricles.

The division of the heart into four cavities is indicated on its surface by grooves. The atria are separated from the ventricles by the coronary sulcus (*auriculoventricular groove*); this contains the trunks of the nutrient vessels of the heart, and is deficient in front, where it is crossed by the root of the pulmonary artery. The interatrial groove, separating the two atria, is scarcely marked on the posterior surface, while anteriorly it is hidden by the pulmonary artery and aorta. The ventricles are separated by two grooves, one of which, the anterior longitudinal sulcus, is situated on the sternocostal surface of the heart, close to its left margin, the other posterior longitudinal sulcus, on the diaphragmatic surface near the right margin ***(William et al.,1995).***

The heart is supplied by two main coronary arteries.

Origin:

The aortic valve has three semi-lunar cusps anterior, right and left posterior cusps, above each cusp a localized dilatation or sinus these are known as the sinuses of valsalva ***(Edward WD,1984).***

The RCA arises from the anterior sinus and this known as the Rt. coronary sinus.

The LCA arise from the Lt. Posterior sinus which also known as the Lt. coronary sinus.

No artery arises from the Rt. Posterior sinus, which called as the non coronary sinus ***(Edward WD, 1984).***

Right coronary artery:

It arises from the anterior or Rt. sinus of valsalva and passes to the Rt. between the pulmonary trunk and right atrium to descend in the Rt. atrio ventricular groove as the marginal artery on the inferior surface of the heart ***(fig. 1 & 2)***, it anastomoses with the LCA in the region of the posterior inter ventricular groove ***(Edward WD,1984)***.

The RCA supplies the RV and Inferior wall of the LV.