VARIATIONS IN LEVELS OF ORIGIN OF THE CORONARY ARTERIES

Normal
Abnormal
Illustrative Cases
Variations in Levels of Origin of the Coronary Arteries

The ascending Ao may be divided into two parts, the sinus, or proximal, portion, and the tubular, or distal, portion. The junction between these two parts lies at about the level of the free edge of the aortic cusps. Deviation of a few millimeters in the level of origin of the coronary arteries with respect to the junction is common. When the origin is as much as 1 cm above the junction, a condition of congenital high takeoff or ectopic origin should be considered. Instances of congenital high takeoff of a coronary artery usually involve the RC. Variations within the normal range are shown in Figure 124, after which cases exhibiting high takeoff will be illustrated.

High takeoff may be a primary (congenital) phenomenon or it may be seen as a secondary change in proximal aortic ectasia including dilatation with cystic medial necrosis. In the latter situation, the high takeoff may be secondary to elongation of the Ao and may be termed acquired high takeoff of a coronary artery. In this condition, both coronary arteries tend to be involved.

While it has been suggested that high takeoff of a coronary artery may predispose to premature atherosclerosis, we have no evidence to support this.

Although it is uncommon, the origin of the coronary artery may lie very low in the deep part of the aortic sinus.

As a practical point, high or very low takeoff of a coronary artery may present problems in finding the ostium during attempted coronary arteriography. In cases with low origin of the coronary artery, cuspogram studies should be performed to properly visualize the artery.