Aortic valve surgery and an anomalous origin of the intramural right coronary artery from the ascending aorta

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Received 16 December 2012; accepted 26 January 2013

Keywords: Coronary artery congenital anomalies • Aorta/aortic • Aortic operation • Coronary artery imaging

A 57-year old man underwent coronary angiography before aortic valve replacement. The right coronary artery (RCA) was discovered to arise from the ascending aorta (Fig. 1). During surgery, the preoperative imaging study helped to visualize the intramural course of the RCA, allowing a safe aortotomy incision (Fig. 2).

Figure 1: Coronary angiography in the left anterior oblique view demonstrating an abnormal origin of the RCA from the distal ascending aorta. An RCA arises high on the aorta and then goes down intramurally (arrows) towards the right coronary sinus (asterisk).

Figure 2: Intraoperative findings. After opening the pericardium, the abnormal course of the RCA was searched and visualized as a bulge on the aortic wall before aortotomy. A longitudinal aortotomy incision was done far from the intramural RCA. The RCA ostium very high on the ascending aorta was cannulated with the cardioplegia cannula (view from the patient’s feet). The RCA ostium originates on the left side of the anterior face of the aorta and then moves down intramurally towards the right coronary sinus, transversally crossing the aorta. L: left; R: right.