

## Case 2

# Diagnosis of Coronary-Ventricular Fistula with Giant Coronary Aneurysm using Flash Mode

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### HISTORY

A 44-year-old female patient presented herself to the hospital with paroxysmal chest distress after exertion for the past 10 days. The duration of the distress varied between 10 minutes and several hours. There was no history of hypertension or diabetes. An electrocardiogram showed a sinus rhythm without significant ST-T changes. A coronary CTA was requested for further evaluation.

### DIAGNOSIS

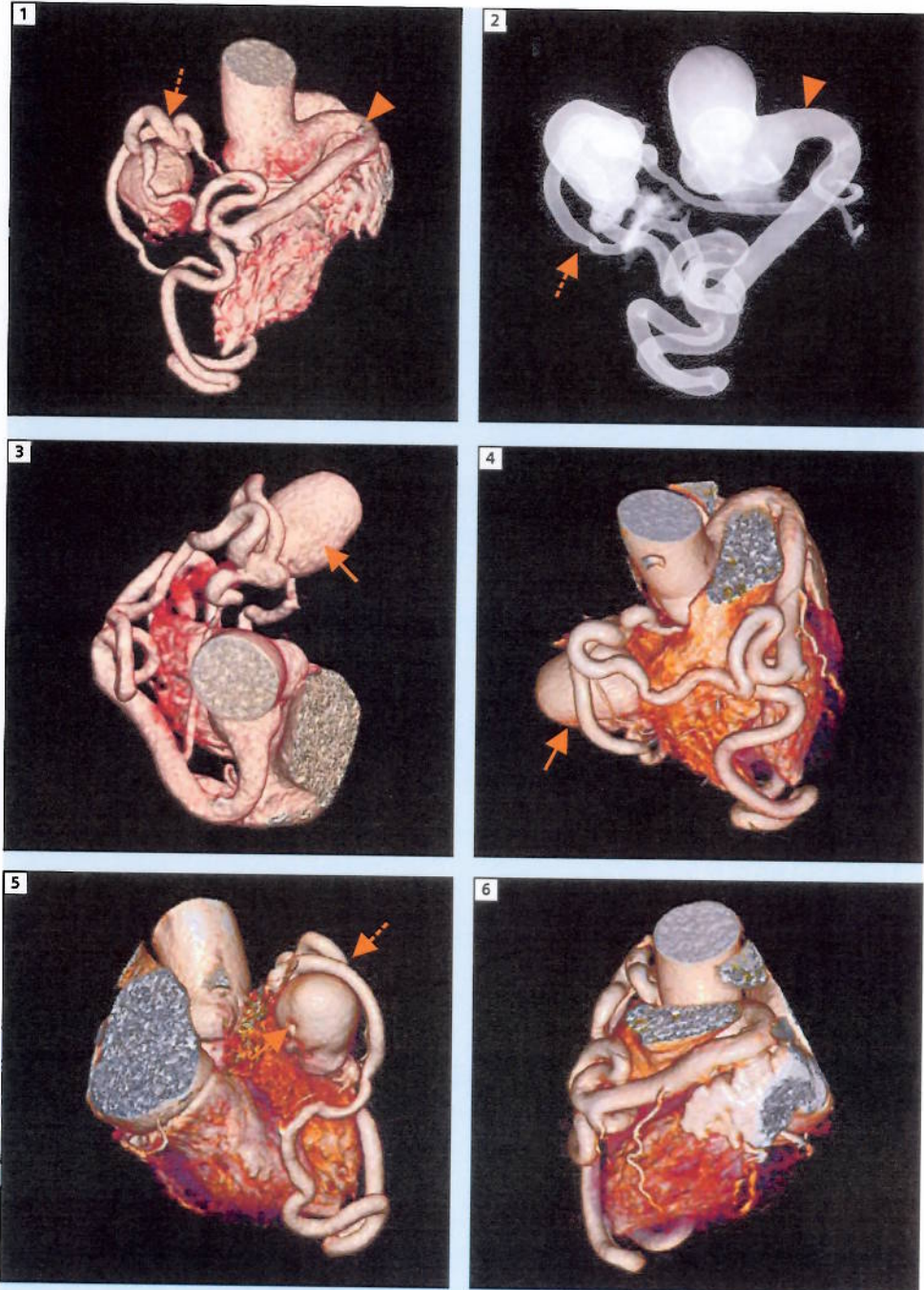
A coronary CT Angiography (cCTA) using Flash mode with a high pitch and an ECG-triggered spiral scanning revealed an extremely rare combination of coronary anomalies. These included a giant coronary aneurysm originating off a fistula connecting the left coronary artery and the right ventricle, an anomalous single coronary artery arising from the left sinus of Valsalva, and the absence of the right coronary artery (RCA) as well as of the left circumflex coronary artery (LCx).

### COMMENTS

The combination of such coronary anomalies is extremely rare. cCTA imaging provided a comprehensive overview of the anomalies, thus offering information necessary to aid the physician in diagnosis. Dual Source CT with Flash mode and ECG-triggering, using single spiral scanning and a very high pitch, not only shortens the acquisition time but also reduces the radiation exposure to the patient. In this case, the entire heart was scanned in just 0.23 s with a dose of only 0.8 mSv.

### EXAMINATION PROTOCOL

Scanner	SOMATOM Definition Flash		
Scan area	Heart	Rotation time	0.28 s
Scan length	13 cm	Pitch	3.4
Scan direction	Cranio-caudal	Slice collimation	128 x 0.6 mm
Scan time	0.23 s	Slice width	0.75 mm
Tube voltage	100 kV	Reconstruction increment	0.4 mm
Tube current	375 ref. mAs	Reconstruction kernel	B26f
Dose modulation	CARE Dose4D	Contrast	
CTDI <sub>vol</sub>	3.59 mGy	Volume	60 mL
DLP	59 mGy cm	Flow rate	5 mL/s
Effective Dose	0.8 mSv	Start delay	8 s



1-6 Images show a giant coronary aneurysm (Figs. 3-5, solid arrows) originating off a fistula (Figs. 1, 2, 5, dashed arrows) connecting the left coronary artery and the right ventricle, and an anomalous single coronary artery arising from the left sinus of Valsalva (Figs. 1-2, arrowheads). The right coronary artery (RCA) and the left circumflex coronary artery (LCx) are absent.