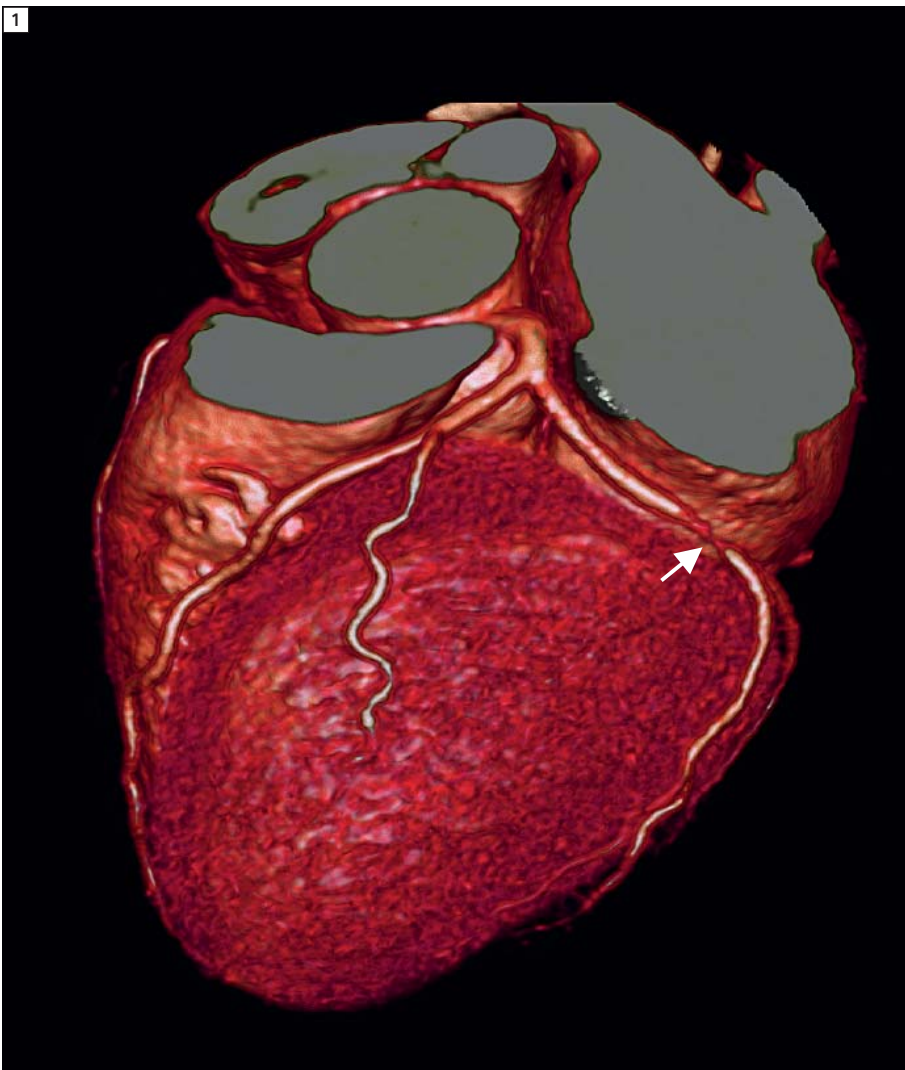


## Case 2

# Low Dose Coronary CTA Reveals High Grade Stenosis

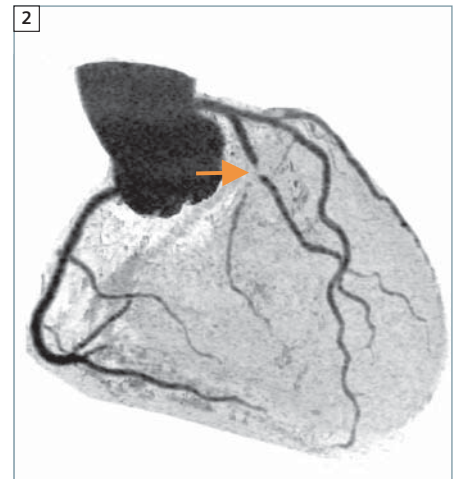
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## HISTORY

A 38-year-old female patient with a history of former nicotine abuse, arterial hypertension, and family history of premature coronary artery disease, hyperlipidemia, and apoplectic stroke was referred to the Cardiology Department with atypical chest pain to rule out coronary artery disease. Coronary CT-Angiography (CTA) was performed with a SOMATOM Definition Dual Source CT in low dose technique using prospective triggering (Adaptive Cardio Sequence), with a temporal resolution of 83 ms and spatial resolution of 0.33 mm.



**1** VR visualization of the left circumflex (LCX) artery shows the stenotic segment (arrow).

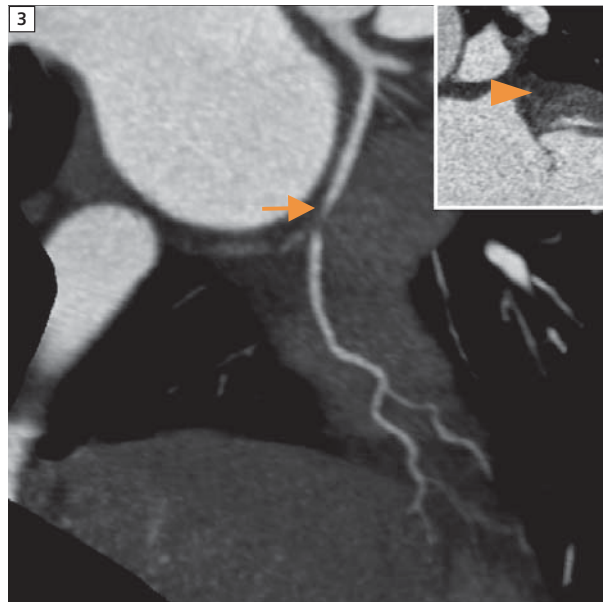
**2** syngo Circulation provides angiographic like view of the entire heart.

## DIAGNOSIS

After determination of the contrast transit time using a test bolus approach, coronary CT-Angiography was performed in cranio-caudal direction injecting 75 ml of iodine contrast agent followed by a 50 ml saline chaser, both at 6 ml/s.

Due to the relatively low heart rate of 50 bpm, a sequential scan was chosen. Tube voltage was set at 100 kV, with a tube current of 215 mAs, which resulted in a very low dose (1.6 mSv). Total scan time was 8 seconds.

Coronary vessels were visualized free of artifacts. The left circumflex coronary artery (LCX) revealed a high grade stenosis. The left anterior descending coronary artery (LAD) and the right coronary artery (RCA) showed no relevant plaques or stenosis.



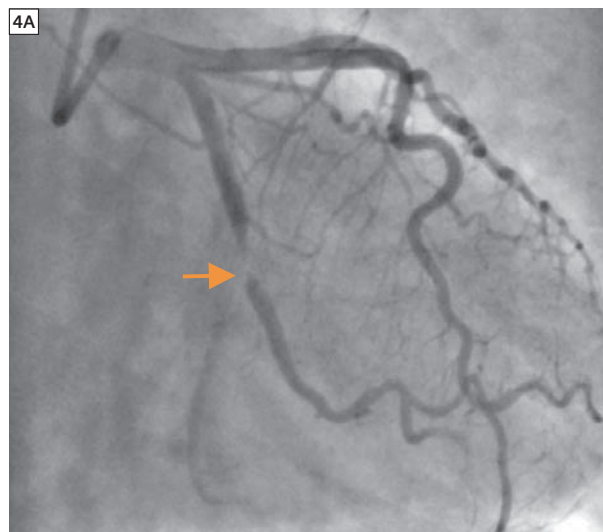
**3** Multi Planar Reformation (MPR) of left circumflex artery (LCX) and a crosssectional view of LCX.

## COMMENTS

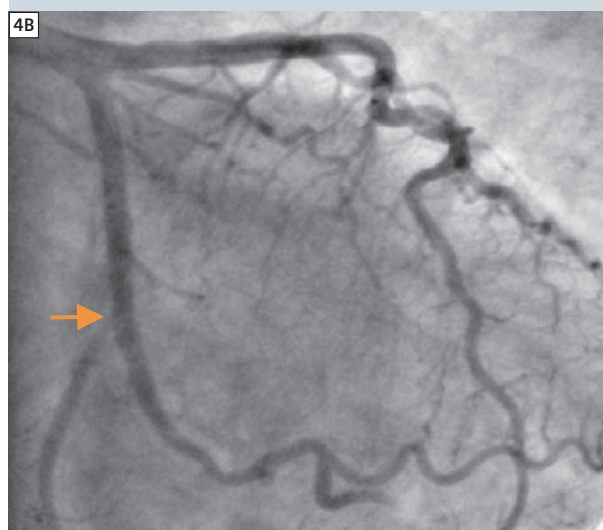
SOMATOM Definition Dual Source CT allowed accurate and artifact-free visualization of LM, LAD and RCA without showing any stenosis or plaques, while a high grade stenosis was demonstrated in the left circumflex coronary artery, at a total dose of 1.6 mSv. The patient was referred to the angiography suite for revascularisation of the circumflex artery by percutaneous coronary intervention (PCI).

## EXAMINATION PROTOCOL

| Scanner                       | SOMATOM Definition |
|-------------------------------|--------------------|
| Scan area                     | heart              |
| Scan length                   | 104 mm             |
| Scan direction                | cranio-caudal      |
| Scan time                     | 8 s                |
| Heart rate                    | 50 bpm             |
| Tube voltage                  | 100 kV             |
| Tube current                  | 215 mAs            |
| Dose                          | 1.6 mSv            |
| Spatial resolution            | 0.33 mm            |
| Rotation time                 | 0.33 s             |
| Slice collimation             | 0.6 mm             |
| Reconstructed slice thickness | 0.75 mm            |
| Increment                     | 0.6                |
| Kernel                        | B30f               |



**4A** Conventional angiography prior to percutaneous coronary intervention (PCI).



**4B** Conventional angiography after PCI.