Compression of an anomalous left main coronary artery in a 38-year-old woman

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Figure 1) A 64-slice cardiac computed tomography angiogram demonstrating an anomalous origin of the left main artery from the right sinus of Valsalva and stenosis of the anomalous left main artery, which had an intramural course (arrow) passing between the ascending aorta (Ao) and the main pulmonary trunk (PA). RCA Right coronary artery

A 38-year-old woman presented with an out-of-hospital cardiac arrest during a 10 km speed-walking event. Initial rhythm strips showed ventricular fibrillation. A baseline electrocardiogram showed sinus rhythm with no conduction abnormalities. Transthoracic echocardiography showed normal left ventricular function with no structural abnormalities. A 64-slice cardiac computed tomography angiogram (Figure 1) demonstrated an anomalous origin of the left main artery from the right sinus of Valsalva and stenosis of the anomalous left main artery, which had an intramural course passing between the ascending aorta and main pulmonary trunk. Conventional coronary angiography confirmed the anomalous origin of the left main artery (Figure 2) and suggested an asymmetric narrowing of the left main artery. Intravascular ultrasound (video) confirmed a pulsatile compression of the anomalous left main artery.

The patient had a full recovery from her cardiac arrest and underwent surgical repair with unroofing and reimplantation of the

Figure 2) Conventional coronary angiography confirming the anomalous origin of the left main artery and suggesting an asymmetric narrowing of the left main artery (arrow). Left anterior oblique projection with cranial angulation (A) and caudal angulation (B)

anomalous left main coronary artery. Intramural passage of an anomalous left main coronary artery from the right cusp is the most common coronary anatomy associated with ischemia and exertional sudden death in young adults (1). Symptomatic patients require surgical revascularization, either by coronary artery bypass grafting or unroofing (marsupialization) of the coronary artery (2). Intracoronary stents have also been used as an alternative therapy; stents protect the vessel against compression as a result of their considerable structural rigidity (3).

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