The anomalous origin of the coronary artery arising from the opposite sinus (ACAOS) is a rare coronary artery anomaly which potentially may cause coronary ischemia when an aortic intramural course of the vessel is present. When ischemia caused by a phasic compression of the intramural decourse is confirmed, stenting or surgical unroofing are generally proposed. A 47-year-old hypertensive man with acute coronary syndrome and ST changes in the inferior-lateral wall underwent emergent coronary angiography. The left circumflex presented a sub-occlusive lesion which was treated with a III-generation drug-eluting stent (DES). The right coronary artery (RCA) originated from the opposite sinus with a decourse which appeared closed to the left stem, anterior to the aorta with no impingement (Figure 1). A computed tomography (CT) angiographic scan failed to clearly demonstrate an intramural course (Figure 2). Because of a residual thoracic discomfort and abnormal electrocardiogram, a new transthoracic echocardiogram was performed in order to ruling out eventual procedure-related complications. An intramural decourse of the proximal portion RCA was
clearly visible in the parasternal short axis view (Figure 3). A new coronary angiography with intravascular ultrasound examination of the intramural course demonstrated a phasic compression of the intramural decourse not apparent on the previous coronary angiography (Figure 4). A III generation DES has been successfully implanted (Figure 5) with ST changes and symptomatology resolution (Figure 6). Emotional or environmental stress and hypertensive status may have a potential role in phasic lumen reduction of the proximal vessel.
**Figure 4.** Urgent coronary angiography in right anterior oblique projection (A) and IVUS examination: a compression of the intramural course is apparent being the proximal part of the vessel squeezed into an elliptical shape with clearly reduced luminal area and no real plaque burden (B). The rest of the vessel is free from significant atherosclerosis (C). IVUS = intravascular ultrasound.

**Figure 5.** IVUS control after successful stenting (A): the first 20 mm of the proximal portion of the vessel, that is the length of the intramural course were covered by the stent with a normal luminal area (B, C). IVUS = intravascular ultrasound.
lumen in case of ACAOS when an intramural de-course is present. A careful use of both non-invasive and ancillary invasive imaging tools are fundamental for the proper management of such rare anatomo-pathological entity.2)

REFERENCES


Figure 6. Electrocardiogram (A) pre- and (B) post-successful stenting of the intramural course demonstrating resolution of the ST changes in inferior leads, in particular D3.