A 78-year-old male was admitted to our centre because of III/IV CCS stable angina despite optimal medical treatment. Stress-induced myocardial ischaemia was demonstrated by SPECT in the inferior wall (Panel A), and a coronary angiography was performed.

Severe coronary stenosis was observed in the first diagonal and in the circumflex. The right coronary artery (RCA) showed an intraluminal filling defect and a tortuous mottled appearance in the mid-segment, severe stenosis in the distal segment, and a chronic total occlusion (CTO) of the posterior descending artery (Panels B and C; Supplementary material online, Videos S1 and S2). TIMI 3 flow was evident through the mid-segment and into posterolateral branches. For a better anatomical characterization of the RCA, optical coherence tomography (OCT) was performed, confirming the presence of a woven coronary artery (Panels D–J; Supplementary material online, Video S3). Multiple thin and tortuous epicardial arterial conduits were shown, reassembling again into a single lumen in the distal segment of the RCA. Interestingly, neither traces of thrombus nor dissection flaps were observed. Arterial wall integrity was preserved in all sections, with atherosclerotic plaques in some conduits. Advancing of the wire and the Dragonfly™ probe was extremely difficult because of channel tortuosity, anticipating an eventual percutaneous coronary intervention on the RCA most probably unsuccessful. Finally, the patient underwent coronary artery bypass grafting.

A woven coronary artery is an extremely rare and underdiagnosed congenital anomaly. Optical coherence tomography was crucial in doing the differential diagnosis with intracoronary thrombus, spontaneous coronary artery dissection or CTO with bridging collaterals. Ruling these conditions out with OCT guided revascularization towards a surgical approach.

Supplementary material is available at European Heart Journal online.