IMAGE FOCUS

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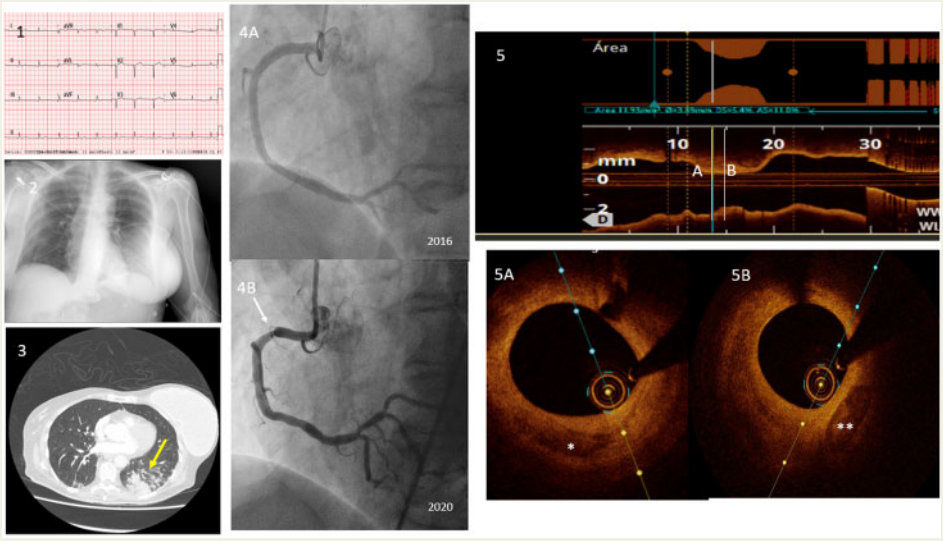
Unusual presentation of acute coronary syndrome in a patient with SARS-CoV-2 infection

Luisa Salido-Tahoces*, Angel Sánchez-Recalde, Ana Pardo-Sanz, and José Luis Zamorano Gómez

University Hospital Ramon y Cajal, Madrid, Spain



A 62-year-old woman with hypertension and chronic ischaemic heart disease was referred to the hospital for asthenia and self-limiting episodes of chest pain. ECG showed no evidence of acute ischaemia (*Figure 1*). High sensitivity troponin T and C-reactive protein were elevated. Chest X-ray showed a subtle consolidation on the left lung base (*Figure 2*). Baseline chest scan confirmed an opacity on the left lung (yellow arrow) and ruled out pulmonary embolism (*Figure 3*). Nasopharyngeal swab was positive for SARS-CoV-2. Due to the persistence of chest pain, coronary angiography was requested. Coronary angiography showed a focal and moderate stenosis (white arrow) in the proximal right coronary artery (*Figure 4B*; Supplementary material, *Video 1*), that was not present in the previous coronary angiography 2 years previously (*Figure 4A*; Supplementary material, *Video 2*). Optical coherence tomography showed a plaque with a crescent-shaped low-signal region (*) with heterogeneous content adjacent to the calcification (**) that suggested intraplaque haemorrhage (*Figure 5A* and *B*; Supplementary material, *Video 3*). There was no disruption of the intima or thrombus. Intraplaque haemorrhage is described as an unstable plaque mechanism, so it was decided to implant a drug-eluting stent. The patient evolved well without new episodes of chest pain and a benign course of COVID-19 disease. The systemic inflammatory response of SARS-CoV-2 infection could trigger a focal inflammatory response in the coronary wall and be responsible for the instability of an atherosclerotic plaque. We showed the first direct evidence of complicated atherosclerotic plaque in a COVID-19 patient, undergoing optical coherence tomography characterization.

Supplementary material

Supplementary material is available online at *European Heart Journal – Cardiovascular Imaging*.