The first reported case of a retained epicardial pacing wire causing coronary artery compression and out-of-hospital cardiac arrest

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A 55-year-old female underwent therapeutic hypothermia for an out-of-hospital cardiac arrest (OHCA) due to VF which was successfully defibrillated by paramedics. Seven months earlier, this patient had undergone an elective surgical prosthetic aortic valve replacement for severe aortic stenosis.

She underwent coronary angiogram (CAG) with a view to subsequent implantation of an internal cardiac defibrillator. CAG revealed a discrete severe stenosis of the mid-LAD (Panel A) and no angiographic evidence of atherosclerotic disease elsewhere. It was noted that a retained epicardial pacing wire (EPW) was in the immediate vicinity of the mid-LAD lesion. IVUS examination revealed that the lumen was severely narrowed with no evidence atherosclerotic plaque and there was also a definite change in echo density within the artery wall. Extrinsic compression by the retained pacing wire was suspected. In view of OHCA, she underwent successful PCI to the mid-LAD with two DES.

A prospectively acquired, ECG-gated CT CAG demonstrated that the retained pacing wire was posterior to the mid-LAD, in direct contact with it (Panels B and C). There was also a cuff of soft tissue attenuation material along the full length of the EPW, suspicious for infection. A SPECT/CT scan and an Indium-111 white cell-labelled scan confirmed the presence of a linear area of an increased radioisotope uptake which mapped to the EPW from a point behind the inferior aspect of the sternum, along the pacing wire as far as the LAD stent (Panel D). Altogether, these findings were highly suspicious for an infection. She underwent successful surgical retrieval of the infected EPW. There was no direct visual evidence of infection during the removal of the EPW and, subsequent, microbiological culture of the segment of epicardial wire was negative.

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