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Left main coronary artery dissection revealed by transoesophageal echocardiography

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A 68-year-old woman was referred to our department after presenting late anterior ST-elevation myocardial infarction. Coronary angiography revealed severe atherosclerosis and a giant aneurysm of the proximal left anterior descending coronary artery (Supplementary material online, *Video S1*). A surgical approach combining aneurysm exclusion and coronary artery bypass grafting (CABG) using the left internal mammary artery was recommended. Echocardiography showed a preoperative left ventricular ejection fraction (LVEF) of 38%. Intraprocedurally, the ascending aortic cannulation caused an extensive aortic haematoma with dissection. Aortic dissection was repaired using Bahnson's technique (supracoronary aortic replacement); cannulation was replaced in carotid and femoral position and planned CABG was performed.

In the immediate post-operative period, patient was unstable under extracorporeal membrane oxygenation. Left ventricular ejection fraction decreased to 15%. Electrocardiogram was unchanged, whereas high-sensitive troponin I raised to 50 000 ng/L ($N < 34$ ng/L). Three-dimensional transoesophageal echography (TOE) demonstrated a flap in the ascending aorta (Supplementary material online, *Video S2*) below the aortic tube extending to the origin of the left main coronary artery (*Figure 1*, Supplementary material online, *Videos S3 and S4*). Emergent coronary angiography confirmed the dissection of the entire left coronary artery (*Figure 2*, Supplementary material online, *Videos S5 and S6*), which was treated by direct stenting of the left main and the left circumflex arteries (Supplementary material online, *Videos S7 and S8*). At follow-up 6 months later, the patient described New York Heart Association Class II dyspnoea with a calculated LVEF of 30%.

Intraoperative aortic dissection is a rare and potentially fatal complication of open-heart operations. Intraoperative aortic dissection is most commonly iatrogenic in origin.[1] In some cases of ascendant aortic dissection, the intimal flap propagates retrogradely to involve the origin of one or both coronary arteries.[2] Intraoperative TOE usually helps assessing aorta, valves, global, and regional left ventricular function.[3] To our best knowledge, this observation is the first to describe a left main coronary artery dissection initially diagnosed using Three-dimensional TOE and confirmed by coronary angiography.

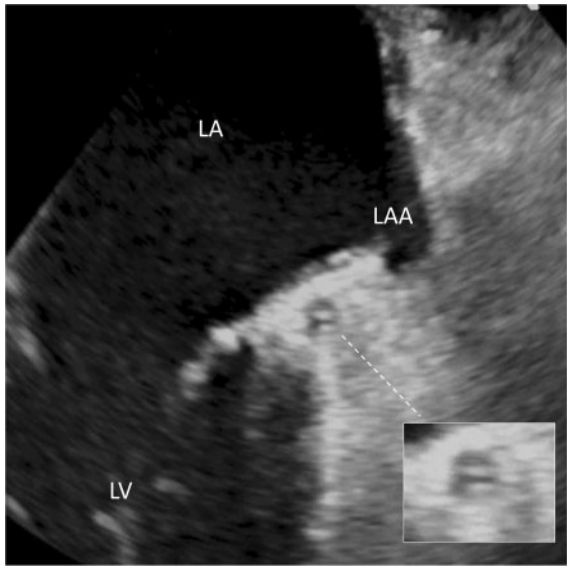

Figure 1 Modified mid-oesophageal transoesophageal echocardiography view (bi-commissural view; transducer angle: ~60°) showing a flap in the left coronary artery similar to that one observed in the ascending aorta (Supplementary material online, *Video S2*). LA, left atrium; LAA, left atrial appendage; LV, left ventricle.

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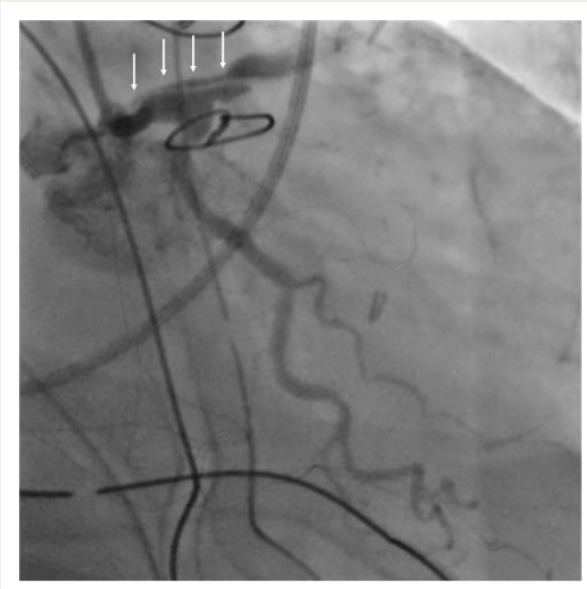

Figure 2 Coronary angiography revealed the dissection of the left main coronary artery (white arrows) extending to the entire left coronary artery.

Supplementary material

Supplementary material is available at *European Heart Journal - Case Reports* online.

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Consent: The author/s confirm that written consent for submission and publication of this case report including image(s) and associated text has been obtained from the patient in line with COPE guidance.

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