

Coronary fistulae behind an abnormal electrocardiogram interpretation: an unexpected guest

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Electrocardiogram (ECG) remains the first-line tool for any heart disease in general population.

An ECG of a 66-year-old male, smoker, with atypical symptoms and no pathological auscultatory findings, fulfilled the criteria for left anterior fascicular block with coexistence of biphasic T wave in V4 and negative T wave in V5 and V6 precordial leads (Supplementary material online, Figure S1).

Left anterior fascicular block is occasionally related with Lev's disease, coronary artery disease, left ventricular hypertrophy-hypertensive heart disease, cardiomyopathies, or valvular heart disease and sometimes without obvious cause.¹

Following guidelines' recommendations, a transthoracic echocardiography (TTE) was performed which revealed a normal-sized left ventricle, with an ejection fraction of 65%.

Using Doppler function, incidentally, we discovered coronary flow towards the left ventricle, steering the diagnosis to coronary cavernous fistulas which are known to present with flow at the origin site when using Doppler flow imaging (Figure 1, Video 1).² This group of rare cardiac malformations, with either congenital or iatrogenic aetiology, could present a wide spectrum of clinical manifestations; from no symptoms to dyspnoea, fatigue, angina, and arrhythmias.³

Coronary angiography revealed multiple coronary artery microfistulae arising from the distal end of the left anterior descending artery, emptying into the left ventricle, thus confirming the echocardiography findings (Figure 2, Supplementary material online, Figure S2 and Video 2).

Coronary Artery Fistulas (CAFs) are present in 0.05–0.25% of patients undergoing coronary angiography, but this low incidence is probably associated with the limited number of patients undertaking this procedure. We suggest that CAFs could be a possible underlying

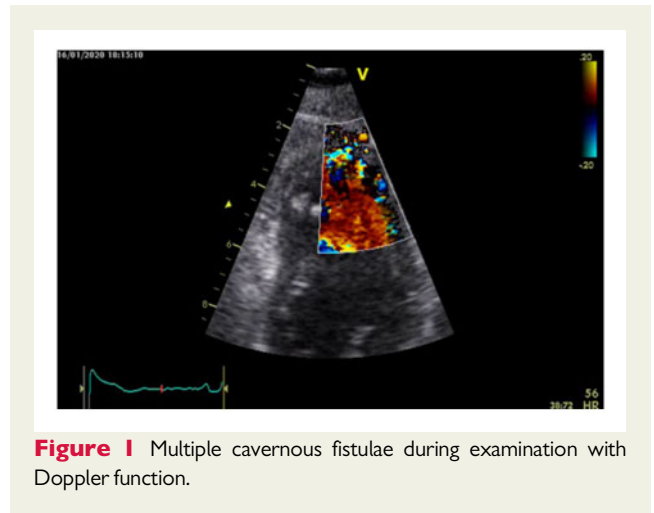


Figure 1 Multiple cavernous fistulae during examination with Doppler function.

cause of an abnormal ECG and we firmly believe that a TTE examination is indispensable in these patients and it should include a Doppler evaluation of coronary flow at the apex of the heart, in order to rule-out CAFs.

Supplementary material

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

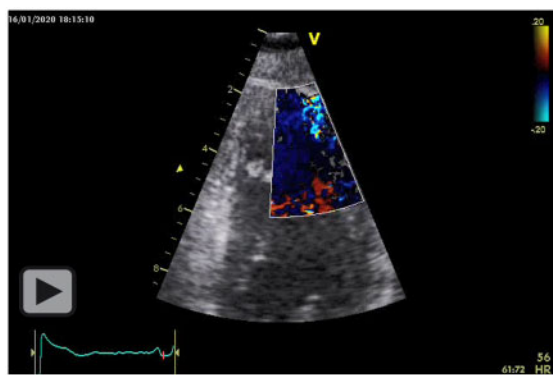
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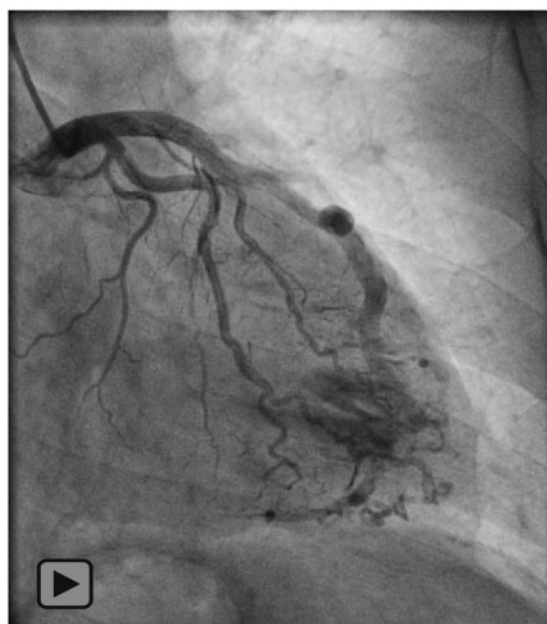
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Video 1 Colour Doppler depicts coronary flow towards the left ventricle, originating from multiple coronary fistulas.



Figure 2 Coronary angiography revealed multiple coronary artery microfistulae arising from the distal end of the left anterior descending artery, emptying into the left ventricle.



Video 2 During coronary angiography, multiple coronary artery microfistulae arising from the distal end of the left anterior descending artery, emptying into the left ventricle, mimicking a ventriculography.

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Consent: The authors confirm that written consent for submission and publication of this case report including images and associated text has been obtained from the patient in the line with COPE guidance.

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