Persistent thebesian veins presenting with myocardial ischemia

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An 82-year-old man presenting with acute coronary syndrome (exercise-induced chest pain, ST-T wave changes and troponin I 0.21 µg/L) underwent coronary angiography. The left anterior descending artery (LAD) and right coronary artery (RCA) had

minor nonobstructive plaque (Figures 1A and 1B). Left coronary injection demonstrated a capillary blush draining into the left ventricular (LV) cavity due to multiple microfistulae (Figure 1C and Video) all along the wall of the left ventricle, extensive enough to

Figure 1

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produce an LV angiogram (Figure 1D). In the absence of any myocardial tumour, ventricular hypertrophy or evidence of noncompaction (on echocardiography), this appearance suggested arterioluminal-type thebesian veins communicating between the coronary arteries and LV cavity.

Although arterioluminal thebesian veins have a larger diameter, a network extensive enough to produce LV opacification is rare. These veins bypass myocardial capillaries and may give rise to myocardial ischemia due to coronary steal (1), because the normal circulation offers a greater resistance to flow than the fistula. Extensive communication, as in the present patient, may lead to myocardial ischemia, severe enough to cause enzyme leak. This is due to a considerable decrease in intracoronary diastolic perfusion pressure that

diminishes in proportion to the size of the fistula, especially during exercise. Anginal symptoms with ST segment changes due to myocardial hypoxia confirmed by elevated coronary sinus lactate levels has been demonstrated after atrial burst pacing in patients with multiple coronary artery-LV fistulae and normal epicardial coronary arteries (2).

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