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CARDIOVASCULAR FLASHLIGHT

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Ischaemic mitral regurgitation

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A 79-year-old woman with a history of treated hypertension and permanent atrial fibrillation was referred because of increasing shortness of breath at minimal exercise. Blood pressure was 110/49 mmHg, heart rate 80 b.p.m. (peak exercise rate 146 b.p.m.), and brain natriuretic peptide 86 pg/mL. Myocardial perfusion scan [Panel A: stress (upper rows) and resting (lower rows) single photon emission computed tomography images (left: short-axis views, right: long-axis views)], spirometry, and chest computer tomography were unremarkable. Resting transthoracic echocardiography revealed slight concentric hypertrophy of both ventricles, no wall-motion abnormalities, diastolic left-ventricular dysfunction grade 2, no valvular disease, and moderate pulmonary hypertension. Resting right heart catheter showed mildly elevated filling pressures and only mild pulmonary hypertension [Panel B: resting right heart catheter with pulmonary capillary wedge pressure (PCWP) mean 14 mmHg, v-wave 18 mmHg (arrow; caliper 40 mmHg)]. However, with minimal exercise (handgrip), PCWP increased significantly with marked v-waves, suggestive of exercise-induced mitral regurgitation [Panel C: exercise right heart catheter (hand grip): PCWP mean 30 mmHg, v-wave 46 mmHg (arrow; caliper 100 mmHg)]. Subsequent coronary angiography showed a severe stenosis of the left circumflex artery [Panel D: coronary angiography (ap view): high-grade stenosis of the left circumflex artery (arrow)] that was treated by percutaneous coronary intervention including stent implantation [Panel E: coronary angiography (ap view): left circumflex artery after implantation of a bare-metal stent (arrow)]. After the intervention, the symptoms disappeared. Two months later, the patient still does not report any shortness of breath. In conclusion, shortness of breath may be caused by various pathologies related to myocardial ischaemia.

