A previously healthy 43-year-old woman presented with atypical chest discomfort. On physical examination, no abnormal findings were obtained. The electrocardiogram was not suggestive of ischaemia. Echocardiography revealed an aneurysm extending from the left ventricular posterior wall (Panel C). This pouch showed paradoxical contraction with a relatively thin wall. No thrombus was seen in the left atrium, left ventricle, or inside the aneurysm. Coronary angiography showed normal coronary anatomy. Left ventriculogram demonstrated a narrow neck, 4 cm in size, contractile aneurysm of the posterior wall (Panels A and B, Movies 1 and 2).

Given the potential risks for rupture, systemic embolism, and ventricular arrhythmia, the aneurysm was surgically excluded by closure of the orifice with a Dacron patch, using cardio-pulmonary bypass.

Left ventricular aneurysms usually occur as a late consequence of myocardial infarction. With no previous history of cardiac disease or surgery, and demonstrably normal coronary arteries in this case, this aneurysm might be congenital in aetiology. As the operative findings revealed (Panel D), this aneurysm had all the layers of the ventricular wall intact and was capable of contraction; thus we defined this outpouching of the left ventricular chamber as a diverticulum. The patient enjoyed an uneventful recovery with completely diminished diverticulum (Panels E and F).

Immediate surgical treatment should be considered to prevent the rupture of aneurysm, systemic embolism, and ventricular arrhythmia in patients with left ventricular diverticulum.

Panels A and B. Pre-operative left ventriculography in 30° right anterior oblique projection (A) and in 60° left anterior oblique projection (B) showing the diverticulum arising from posterior wall (arrows).

Panel C. Four-chamber view of echocardiogram showing the diverticulum arising from posterior wall. RA, right atrium; RV, right ventricle; LA, left atrium; LV, left ventricle; DV, diverticulum.

Panel D. Intraoperative view inside the diverticulum. Note that small orifice of diverticulum was seen.

Panels E and F. Post-operative left ventriculography in 30° right anterior oblique projection (E) and in 60° left anterior oblique projection (F) showing that the diverticulum was completely diminished (arrows).

Movies 1 and 2. Pre-operative left ventriculography in 60° left anterior oblique projection (1) and in 30° right anterior oblique projection (2) showing the diverticulum arising from posterior wall.