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Pressure Tracings in Hypertrophic Cardiomyopathy With Dynamic Midventricular Obstruction

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A 50-year-old man was admitted for evaluation of syncope. Clinically, he had an irregular pulse and an ejection systolic murmur loudest at the left sternal border. Transthoracic echocardiography revealed hypertrophic cardiomyopathy (HCM) with midventricular obstruction and apical aneurysm with maximum pressure gradient greater than 74 mm Hg. Coronary angiogram showed normal coronary arteries. Left ventriculogram using 4 Fr pigtail catheter via right radial approach showed nearly total obliteration of left ventricular (LV) cavity at the midventricular level (arrows) with apical aneurysm (Fig. 1A and B). Pressure tracing from LV apex to the aorta showed a significant systolic pressure gradient within the left ventricular cavity (Fig. 1C). The day after cardiac catheterization, he complained of palpitation and mild dizziness and an electrocardiogram showed sustained monomorphic ventricular tachycardia (VT) of LV apical origin. The final diagnosis was HCM with midventricular obstruction complicated by VT.

HCM is an extremely heterogeneous disease. In a patient with HCM with midventricular obstruction and apical aneurysm, VT arising from the scarred aneurysm wall often occurs, predisposing the patient to sudden cardiac death.[1)2)] In a patient with HCM with severe midventricular obstruction, catheterization of LV apex is very difficult. The pressure tracings in this patient strongly resembled those of HCM with LV outflow tract (LVOT) obstruction, but the pressure gradient existed between LV apex and LVOT, not between LVOT and aorta.

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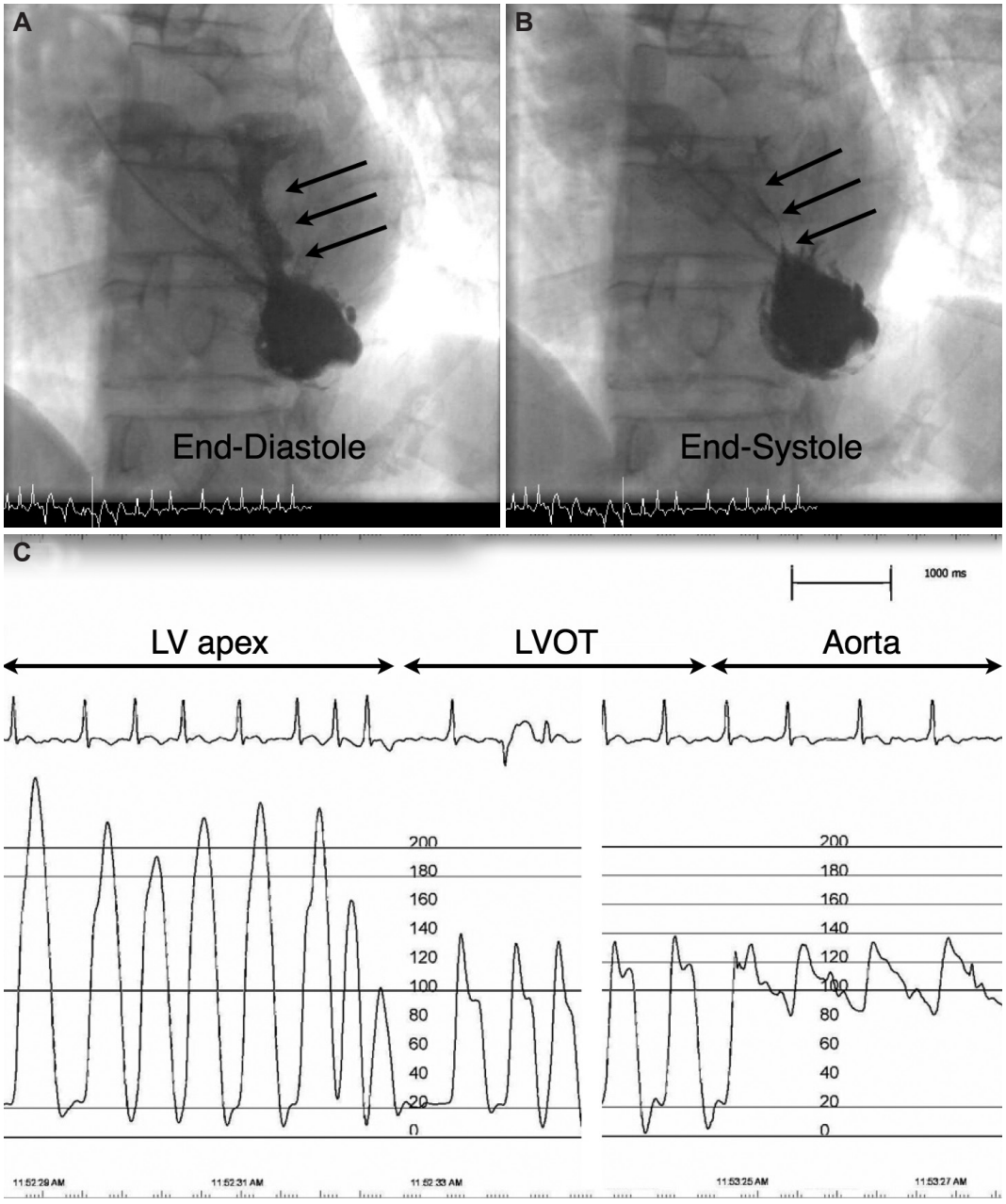

Fig. 1.

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