Aortic dissection with diastolic prolapse of intimal flap into left ventricle

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Abstract Ascending aortic dissection is often a catastrophic condition. Dissection into the commissures or into an aortic valve leaflet may lead to leaflet avulsion and valvular insufficiency due to a flail valve. We present an image report describing an important and life-threatening complication due to the movement of a partially dehisced intimal aortic flap into the left ventricle causing aortic valve insufficiency in a patient with acute dissection of the ascending aorta.

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A 68-year-old man was admitted to the emergency department because of the acute onset of pain in the chest and upper back. The pain was located initially in the throat, then radiated over the anterior aspect of his chest and midway down his back. There was a report of a strong family history of coronary artery disease. He had a history of hypertension, but was not on medication. His blood pressure on admission was 190/50 mmHg and there was no difference between the 2 arms. A systolic ejection murmur and a grade 3/6 diastolic decrescendo murmur were audible along the left sternal border. Neurological examination revealed no abnormalities. An electrocardiogram showed no abnormalities except for sinus tachycardia. No abnormality of the heart and lungs was apparent on chest X-ray examination. Hematological tests were within normal limits and cardiac markers, including CK-MB, ALT, LDH and troponin-T, were not high. The transthoracic echocardiography in the parasternal long axis view demonstrated a dilated aortic root, severe aortic regurgitation and intimal flaps parallel to the anterior and posterior aortic walls, and a proximal dissection flap prolapsing during the diastole from aorta to the left ventricle. Associated with the movement of the intimal flap, an aortic cusp was shifted from its original position to the left ventricular outflow tract in diastole (Fig. 1, LV: left ventricle; RV: right ventricle; Ao: aorta; LA: left atrium; white
Aortography disclosed type I aortic dissection and severe aortic regurgitation, and coronary angiography showed normal coronary arteries. These findings were confirmed at the surgery to represent flail movement of a partially dehisced intimal aortic flap. The patient made an uneventful recovery and was discharged 1 week later.