A 15 year-old girl was referred to our echocardiography clinic for systolic murmur and mild dyspnea during heavy exercise. Her past medical history was unremarkable and she was not taking any medications. Electrocardiogram was normal. Transthoracic echocardiography revealed a mobile, leaflet-like structure adjacent to the proximal portion of anterior leaflet of mitral valve that was moving toward left ventricular outflow tract (LVOT) during systole (Figure A, Video 1*). Further evaluation indicated a turbulent flow pattern with mild obstruction of LVOT generating a peak velocity of 2.9 meters per second (Figure B). Further evaluation with transesophageal echocardiography confirmed the presence of accessory mitral valve (AMV) leaflet with chordal attachment to interventricular septum (Figure C, Video 2*). Ventricular function was otherwise normal with trace regurgitation of both mitral and aortic valves. No other abnormality was noted in echocardiography. It was decided to observe the patient with serial echocardiography and start antiplatelet therapy to reduce the risk of thromboembolic events, as these events are reported even in the absence of significant LVOT obstruction. The patient remained stable with no further clinical and anatomical changes of the heart after 6 months. AMV is an extremely rare entity with a few reported cases in the literature. It is commonly associated with other congenital heart abnormalities. One-third of cases are isolated. In patients with LVOT mass, fibroelastoma, endocardial vegetation, and subaortic web should be considered in differential diagnosis along with the presence of AMV. Clinical signs and symptoms depend on the degree of LVOT obstruction and coexisting anomalies.

**Figures**—(A) Transthoracic long-axis parasternal view focus on left ventricular outflow tract (LVOT). Arrows indicate accessory mitral valve leaflet protruded toward LVOT. (B) Continuous wave Doppler tracing obtained through left ventricular outflow tract showing peak velocity of 2.9 meters per second caused by accessory mitral valve leaflet. (C) Midesophageal long-axis view of transesophageal echocardiography obtained at 120 degrees confirming the presence of the accessory mitral valve leaflet. AO: Aorta; LA: Left atrium; LV: Left ventricle. *Supplementary video files associated with this presentation can be found in the online version of the journal.