Apical pouches with hypertrophic cardiomyopathy

Hipertrofik kardiyomiyopatide apikal keseler

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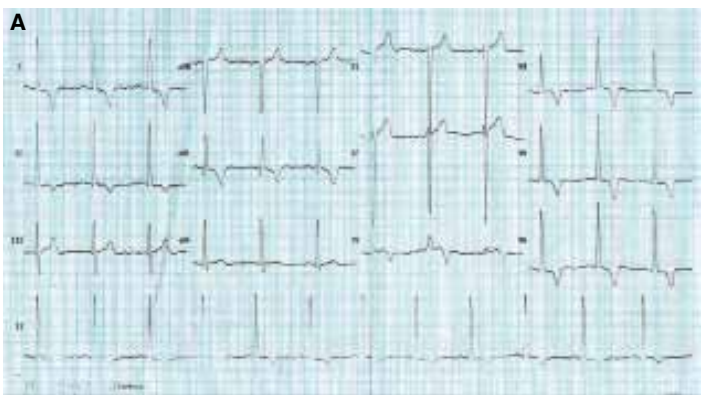
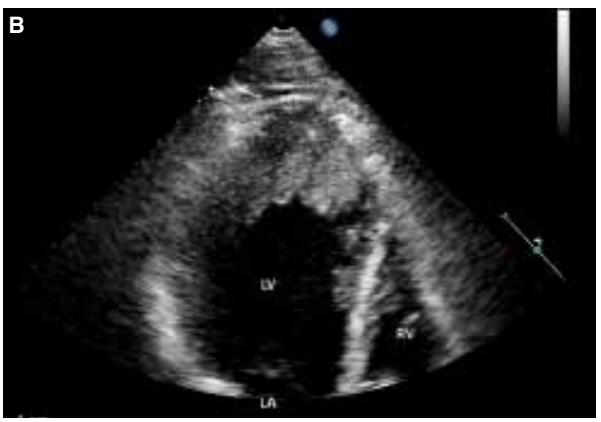
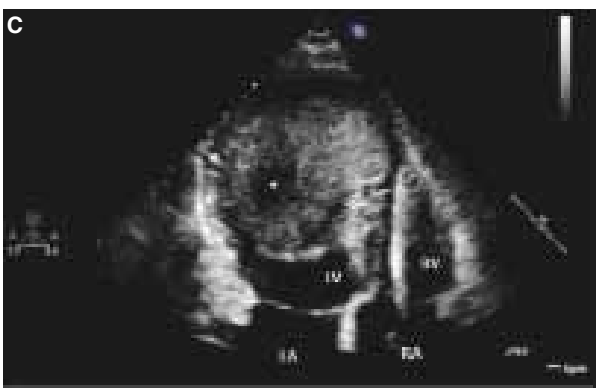
An 18-year-old man is admitted to the emergency department after an episode of syncope at school. His family history showed that the elder brother had hypertrophic cardiomyopathy (HCM), and another elder brother died suddenly at age 52. On physical examination, the patient's vital signs were normal. A grade 2/6 systolic murmur was heard at the cardiac apex. The remainder of the findings on physical examination was normal. Electrocardiography revealed sinus rhythm and deep symmetrical T-wave inversions in leads I, II, aVL, and V3-V6 (Figure A). His laboratory findings including serum electrolytes were within normal limits. Two-dimensional transthoracic echocardiography showed typical of massive HCM (Figure B) with apical pouches (star in Figure C, and Video 1*) and color Doppler transthoracic echocardiography at apical four chamber view showing apical HCM with coronary artery-left ventricular micro-fistulas (Video 2*). Development of the apical pouches are also rare finding in HCM. The mechanisms contributing to the formation of apical pouches in HCM are multiple and still to be clarified. Possible causes include the increased afterload and high apical pressure, ventricular remodeling, the increased oxygen demand due to increased myocardial thickness and decreased oxygen supply due to the decreased capillary network and apical myocardial infarction. Investigators have suggested that the progression of myocardial disease in the left ventricular apex causing apical aneurysm or apical pouches could be a mechanism for the disappearance of negative T-waves during the course of the disease.







Figures– (A) Electrocardiogram at admission showing sinus rhythm and inverted T-waves in leads V3-6, I, II, and aVL. **(B)** Two-dimensional transthoracic echocardiography at apical four chamber view showing apical hypertrophic cardiomyopathy. LV: Left ventricle; RV: Right ventricle; LA: Left atrium. **(C)** Two-dimensional transthoracic echocardiography at apical four chamber view showing apical hypertrophic cardiomyopathy with apical apical pouches (*). LV: Left ventricle; RV: Right ventricle; LA: Left atrium; RA: Right atrium. **Supplementary video files associated with this presentation can be found in the online version of the journal.*