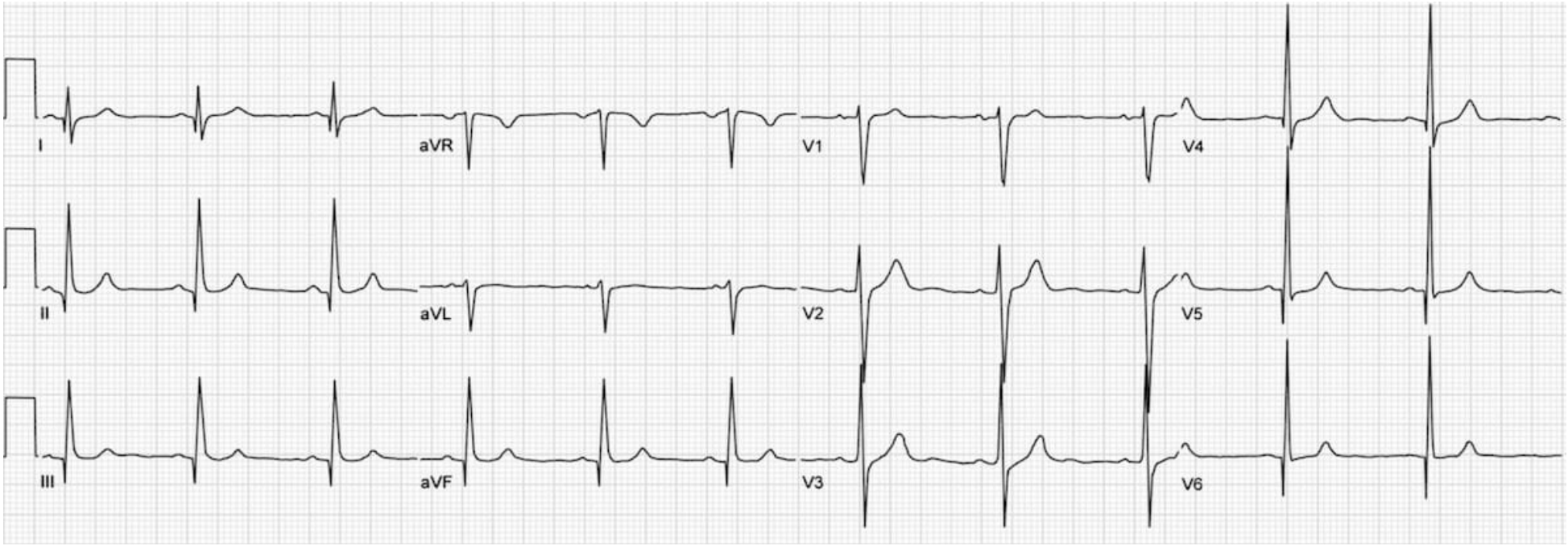
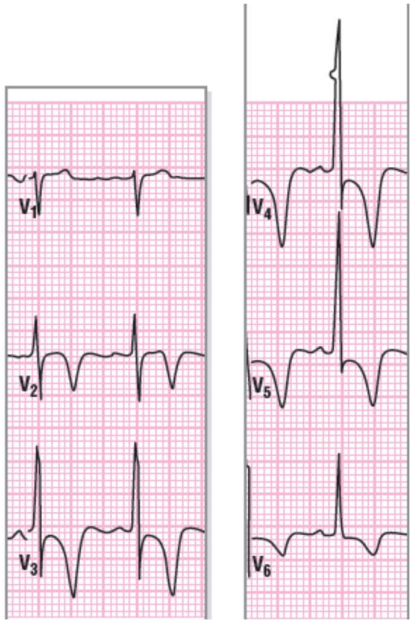
- Hypertrophic cardiomyopathy (HCM)



HCM with dagger-like deep but narrow "septal Q waves" in I, II, III, aVF, V5, V6, and LVH

Nearly all HCM patients have abnormal ECGs; repolarization abnormalities (ST and T wave changes secondary to LVH) are the most common findings, with LVH voltage in 60%, left atrial abnormality/enlargement in 20%–40%, and septal Q waves in 30%. The most frequent cause of mortality in HCM is sudden death, with risk factors including young age and a history of syncope and/or asymptomatic VT on ambulatory monitoring.

- Severe septal hypertrophy of HCM often produces “dagger-like” deep but narrow “septal Q waves” in the lateral (I, aVL), anterolateral (V5, V6), and less often in the inferior (II, III, aVF) leads. Although this pattern can be mistaken for prior MI, the Q waves due to infarction are typically > 30 msec in duration, whereas the septal Q waves in HCM are < 30 msec.
  - ST-T wave changes are secondary to ventricular hypertrophy, but often mimic ischemic changes
  - Prolonged QT interval occurs in 15% of cases
  - Apical variant of HCM (severe LVH localized to the apex of the LV) characterized by giant negative T waves in the precordium (deep T wave inversions in V2–V6)



Apical variant HCM