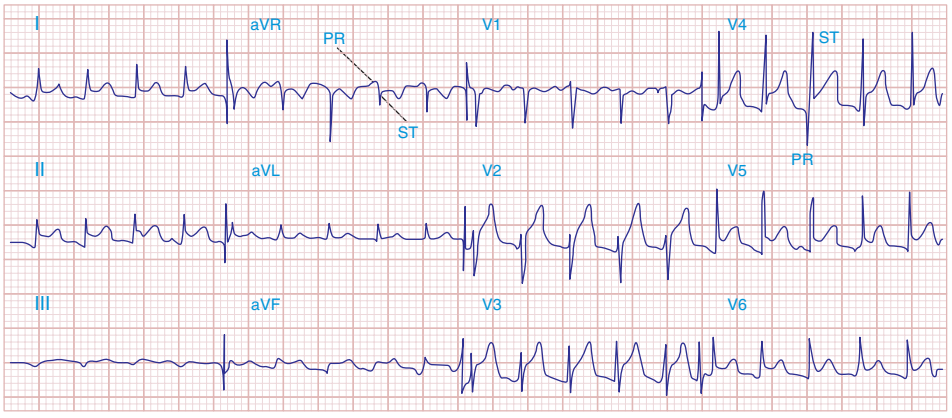

FIGURE 288-1 **Acute pericarditis.** There are diffuse ST-segment elevations (in this case in leads I, II, aVF, and V_2 to V_6) due to a ventricular current of injury. There is PR-segment deviation (opposite in polarity to the ST segment) due to a concomitant atrial injury current.

Pericardial effusion is especially important clinically when it develops within a relatively short time because it may lead to cardiac tamponade (see below). Differentiation from cardiac enlargement may be difficult on physical examination, but heart sounds may be fainter with pericardial effusion. The friction rub and the apex impulse may disappear. The base of the left lung may be compressed by pericardial fluid, producing *Ewart's sign*, a patch of dullness and increased fremitus (and egophony) beneath the angle of the left scapula. The chest roentgenogram may show enlargement of the cardiac silhouette, with a "water bottle" configuration, but may be normal.

Diagnosis *Echocardiography* **(Chap. 270e)** is the most widely used imaging technique. It is sensitive, specific, simple, noninvasive, may be performed at the bedside, and can identify accompanying cardiac tamponade (see below) **(Fig. 288-2)**. The presence of pericardial fluid is recorded by two-dimensional transthoracic echocardiography as a relatively echo-free space between the posterior pericardium and left ventricular epicardium in patients with small effusions and as a space between the anterior right ventricle and the parietal pericardium just beneath the anterior chest wall. In patients with large effusions, the heart may swing freely within the pericardial sac. When severe, the extent of this motion alternates and may be associated with electrical alternans **(Fig. 288-3)**. Echocardiography allows localization and identification of the quantity of pericardial fluid.

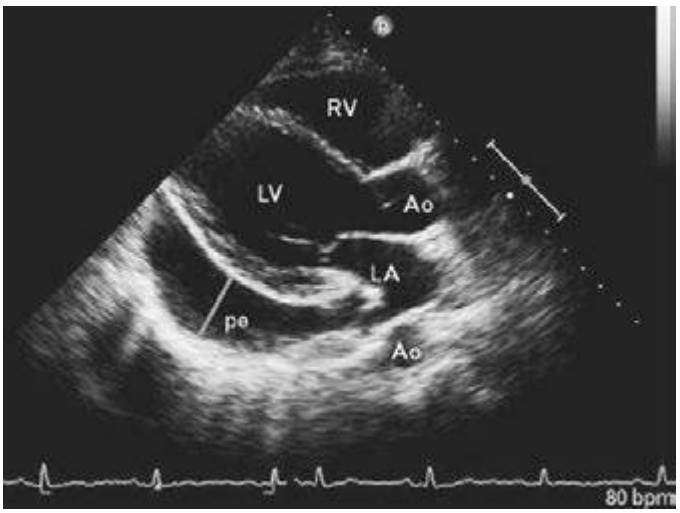

FIGURE 288-2 **Two-dimensional** echocardiogram in lateral view in a patient with a large pericardial effusion. Ao, aorta; LV, left ventricle; pe, pericardial effusion; RV, right ventricle. *(From M Imazio: Curr Opin Cardiol 27:308, 2012.)*

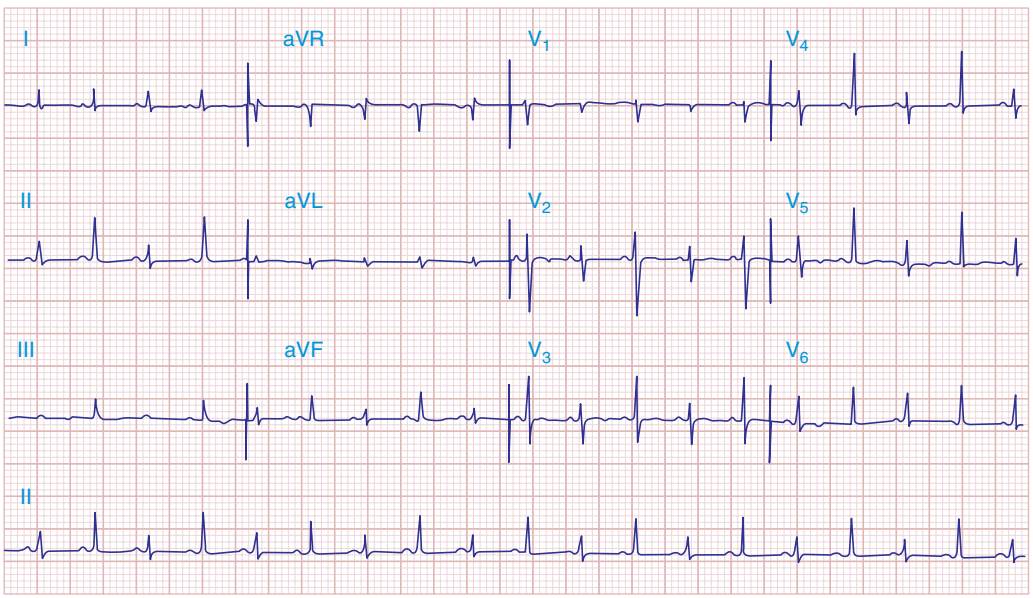

FIGURE 288-3 **Electrical alternans.** This tracing was obtained from a patient with a large pericardial effusion with tamponade. *(Reproduced from DM Mirvis, AL Goldberger: Electrocardiography, in RO Bonow et al [eds]: Braunwald's Heart Disease, 9th ed. Philadelphia: Elsevier, 2012.)*