ABSTRACT Introduction: It is important to remember that pericarditis in young patients are associated with chest pain and accompanying electrocardiogram (ECG) signs, such as PR-segment depression and electrical alternans, in emergency departments. However, similar ECG changes may be found in patients with pneumothorax without pericarditis. The aim of this case study is to review the ECG changes of pneumothorax. Case Report: A male patient was admitted to our department with chest pain. The ECG examination showed sinus tachycardia, electrical alternans in all leads, PR-segment depression in inferior derivations, and loss of R progression in V5-V6. Chest X-ray radiography was taken for differential diagnosis, and it revealed pneumothorax in the left hemithorax. A chest tube was inserted on the left mid-axillar line. Control chest X-ray radiography revealed disappearance of the pneumothorax border. The control ECG showed that all changes were improved. Conclusion: Young patients with chest pain who are admitted to the emergency department should be evaluated for life-threatening cardiac and pulmonary emergencies with early ECG examination. Electrical alternans, sinus tachycardia, and PR-segment depression are major signs in pericarditis. However, pneumothorax, especially occurring in the left hemithorax, may show similar findings. Keywords: ECG changes, pneumothorax, pericarditis