Poor R-Wave Progression in the Precordial Leads in Left-Sided Spontaneous Pneumothorax

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A 30-year-old man without any cardiovascular history was transferred to our hospital because of chest pain. On arrival, his blood pressure was 166/93 mm Hg, with a pulse rate of 58 bpm. His oxygen saturation level was 98%. His ECG showed normal sinus rhythm, with poor R-wave progression in the precordial leads (Figure, A). The white blood cell count was 7990/mm³, and the level of creatine kinase was 93 IU/L (normal range <163). Left ventricular wall motion was normal on echocardiography. The chest x-ray revealed left-sided spontaneous pneumothorax (Figure, A). After simple aspiration with cannula, the left lung was reexpanded, and the poor R-wave progression in the precordial leads was completely resolved (Figure, B).

Pneumothorax and myocardial infarction are common diseases presenting chest pain, and ECG is one of the most important diagnostic tools for them. Here, we describe ECG findings with left-sided pneumothorax mimicking anterior myocardial infarction. The mechanism of poor precordial R-wave progression in this patient seemed to be rotation of the heart due to intrathoracic air, because the ECG findings immediately improved after simple aspiration. Left-sided pneumothorax should be considered in patients with chest pain and suspected anterior myocardial infarction on ECG.

Disclosures
None.

Figure. ECG and chest radiograph of patient on arrival (A) and after aspiration (B). A, ECG showed normal sinus rhythm with poor precordial R-wave progression, and the collapse of the left lung was seen on the chest radiograph (arrows). B, After simple aspiration, both abnormalities as demonstrated by ECG and chest radiograph improved.
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