A 71-year-old man was transferred to the hospital’s emergency department with worsening dyspnea. He had been diagnosed previously with severe pulmonary emphysema caused by Aspergillus infection after chemotherapy and transplant therapy for acute myeloid leukemia. ECG revealed ST-segment elevation in leads II, III, and aVF, and ST-segment depression in leads I, aVL, and V2–5 (Figure A). Cardiac enzymes were almost normal. Computed tomography (CT) revealed tension pneumothorax affecting the right lung (Figure D). After the initial examination, his blood pressure abruptly dropped and the heart rate became tachycardic. A chest tube was immediately placed in the right pleural cavity and the ECG showed more marked ST-segment elevation in leads II, III, aVF, and syn-V3R–5R (Figure B). CT revealed a completely re-expanded right lung (Figure E). One hour later, the ST-segment elevation had returned to normal (Figure C).

Various ECG changes caused by pneumothorax have been reported, but very few have reported inferior ST-segment elevation on ECG in a patient with right tension pneumothorax. In this case, we speculate that the ST changes were caused by compression of the myocardial or right coronary artery, but we were unable to completely elucidate the mechanism. Further accumulation of cases is desirable.