Brief report

Simultaneous bilateral spontaneous pneumothorax as a presenting symptom of osteosarcoma

R.S. Boersma⁎, J. Buijs

Department of Internal Medicine, Atrium Medical Center Parkstad, Heerlen, The Netherlands

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Abstract

Simultaneous bilateral spontaneous pneumothorax (SBSP) is a very rare condition that is mainly encountered in patients with underlying lung disease. We present a patient with a SBSP as a presenting symptom of a metastasized osteosarcoma.

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1. Introduction

Simultaneous bilateral spontaneous pneumothorax (SBSP) is a very rare condition that is mainly seen in patients with underlying lung disease, such as COPD, infections, interstitial lung disease, connective tissue disease and cancer [1]. We present a case of a SBSP as a presenting symptom in a patient with a non-pulmonary primary disease.

2. Case report

A 50-year-old woman was admitted to the Department of Psychiatry because of a depressive disorder and weight loss. Her medical history revealed a cervical carcinoma that had been treated with radiation therapy in 1996. A few days after admission, she presented with acute dyspnea. Physical examination revealed extreme agitation, cyanosis, and tachypnea. Her body temperature was 38.0 °C, blood pressure 140/100 mm Hg, and pulse rate 100 bpm. Pulmonary examination revealed bilateral hyper-resonant percussion notes and diminished breath sounds on auscultation.

Laboratory tests showed respiratory failure with pH 7.32, PCO₂ 7.0 kPa, PO₂ 5.2 kPa, CRP 217 mg/l, hemoglobin 6.1 mmol/l, leukocytes 18.6 × 10⁹/l, thrombocytes 611 × 10⁹/l, alkaline phosphatase 1500 U/l, and lactate dehydrogenase 900 U/l. An ECG revealed a sinus rhythm with variable voltages of QRS complexes synchronized with the breath rate.

Fig. 1. Simultaneous bilateral pneumothorax with complete collapse of both lungs.
Chest X-ray showed a bilateral pneumothorax with a complete collapse of both lungs (Fig. 1).

The patient was transferred to the ICU, where bilateral chest drains were inserted promptly. This led to a dramatic clinical improvement. Further history-taking revealed pain in her leg, which started after a minor trauma 2 years earlier. On further physical examination, a very large soft tissue mass was encountered in her abdomen with a diameter of 20 cm.

Computed tomography of the abdomen, combined with PET scintigraphy, disclosed a large mass, 15 × 20 cm, in the left abdomen with destruction of the os ilium, processus transversus L5-S1, and the left paravertebral muscle. A biopsy was taken that showed an osteosarcoma. High-resolution computed tomography of the thorax demonstrated peripheral pulmonary nodules and pleural lesions.

As there were no curative or palliative therapeutic options for this large, locally advanced, and metastasized osteosarcoma, the patient was discharged home with palliative care and she died one month later.

### 3. Discussion

SBSP is a rare condition, occurring in up to 1.9% of cases of spontaneous pneumothorax [2]. A SBSP in malignant diseases may be the result of necrosis of subpleural metastases, which can lead to bronchopleural fistula, especially after tumor lysis due to chemotherapy. Pneumothorax has been described in several sarcomatous tumors and in other tumors with an aggressive and necrotic nature [3]. The incidence of one-sided pneumothorax in patients with osteosarcoma has been reported to be 5–7% during the course of treatment [4]. This is the first report of SBSP as a presenting symptom of a metastasized osteosarcoma. In our patient, this malignant disease was most likely related to the irradiation therapy she had received 7 years earlier [5].

### 4. Learning points

- Simultaneous bilateral spontaneous pneumothorax also occurs in patients with non-pulmonary primary disease.
- A spontaneous pneumothorax in a patient with a malignant disease should raise the suspicion of occult pulmonary metastases.

### References


