

An 18-year-old man with primary simultaneous bilateral spontaneous pneumothoraces: a case report

Omar Alberto Venegas Gurrola, Aarón Joel Herrera Gonzalez, Jose Isaias Badillo Almaraz

Abstract

Pneumothorax is defined as the presence of air in the pleural cavity. It usually occurs secondary to multiple pulmonary predisposing diseases and represents one of the most frequent forms of thoracic disease. On the other hand, primary spontaneous pneumothorax (PSP), defined as a non-underlying lung disease pneumothorax, is a less common condition, and frequently occurs in very thin, tall and young men. Its incidence goes from 5 to 9 cases per 100.000 populations per year.

Primary simultaneous bilateral spontaneous pneumothorax (PSBSP) is a very rare disease with an incidence of 1.3% of all primary pneumothorax cases. The spontaneous rupture of pleural bullae or blebs has been identified as a causal factor of primary pneumothorax. In this report we present the case of an 18-year-old male with multiple bullae who developed PSBSP.

Key words: pneumothorax, simultaneous, primary, spontaneous, bullae, blebs.

Case Report

This is an 18-year-old male patient, occupation farmer with no remarkable past medical history.

His current condition started while resting at home with an acute onset of severe, sharp and steady pleuritic chest pain accompanied by significant dyspnea with “feeling of imminent death” and cough with hemoptoic sputum.

At his admission, the most relevant findings at his physical examination were: BP 90/60, RR 42, HR 120

and temperature of 37 °C. The patient was conscious, oriented with circumoral cyanosis with no evidence of respiratory infection. On thoracic physical examination we found respiratory expansion and tactile fremitus were both diminished, percussion was tympanic on both hemithoraces and on auscultation vocal fremitus and breath sounds were decreased. Precordium with good intensity but tachycardic heart sounds, no murmurs or additional heart sounds were present. The rest of the physical examination was completed with no relevant findings.

Laboratory tests were performed with the ensuing results: leucocytes in 9500/mm³, Hb at 12.6 g/dl, hematocrit of 37.1 and a platelet count of 416,000. Arterial blood gases test revealed respiratory alkalosis.

At his arrival a chest x-ray was performed confirming the diagnosis of bilateral pneumothorax (**Figure 1**). The patient was treated with bed rest, supplementary oxygen and bilateral chest tubes were placed with a bloody output of 150 ml on the right side and 330 ml on the left side. After this, a chest CT scan was taken finding images compatible with

From Universidad Autónoma de Zacatecas, Hospital General Zacatecas “Luz González Cosío”, Zacatecas, Zacatecas, México (Omar Alberto Venegas Gurrola and Jose Isaias Badillo Almaraz), and Universidad de Monterrey, Monterrey, Nuevo León, México (Aarón Joel Herrera Gonzalez)

Address for correspondence:

Omar Venegas, MD
410 Circuito Ciudad Gobierno St.
Zacatecas 98160, Mexico
Tel: 492-92-4-01-01
Email: omarvenegas006@yahoo.com.mx

multiple bullae (**Figure 2**). During his hospitalization the patient underwent pulmonary and pleural biopsy by which underlying pulmonary pathology was discarded. Fungal and mycobacterial infection were also ruled out. HIV test was negative. Alpha-1 antitrypsin and immunologic profile were both normal. After two weeks of hospitalization an adequate lung re-expansion was achieved.

A chest x-ray was performed just before discharge, showing small residual bilateral pneumothorax, however, the patient was asymptomatic and supplementary oxygen was no longer needed, and finally, fourteen days after his admission the patient was discharged due to improvement of his condition. After 4 years of surveillance no new episodes or complications have occurred.

Discussion

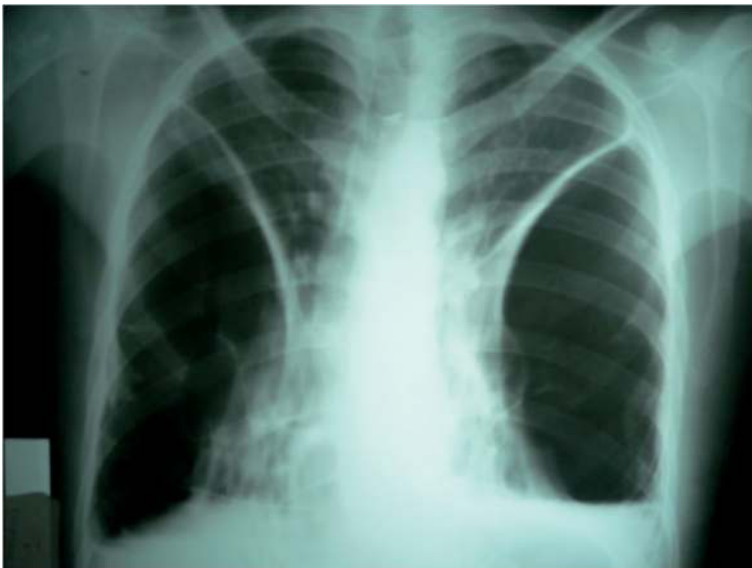
Primary simultaneous bilateral spontaneous pneumothorax

(PSBSP) is a very rare condition and only occurs in 1.3% of all cases of primary pneumothorax. (1) Although no underlying lung disease is present in primary pneumothorax, subpleural bullae is frequently observed in patients with primary spontaneous pneumothorax (PSP). When a chest CT scan is obtained, its rupture has been proved to cause this problem. (2) Actually, some authors mention that up to 81% of patients with PSP have bullae or blebs. (3) In the present case, no underlying lung disease was found; therefore, it was classified as PSBSP. It's interesting to see how the apex of both lungs was not affected (**Figure 1**), even when bullae rupture occurs more frequently in this area. (4)

Acknowledgements

Thanks to the radiologist Dr. Monica Reveles for her assistance on the interpretation of the images included and described on this paper.

Figure 1. Upright postero-anterior chest radiograph



Legend: Bilateral air-fluid levels can be seen. It's interesting how the apex of both lungs is not affected.

References

1. Graf-Deuel E. Simultaneous bilateral spontaneous pneumothorax. Chest 1994;105:1142-6.
2. Luh SP. Review: Diagnosis and treatment of primary spontaneous pneumothorax. J Zhejiang Univ Sci B 2010;11:735-44.
3. Baumann MH. Management of spontaneous pneumothorax. Clin Chest Med 2006;27:369-81.
4. Butterworth SA, Blair GK, LeBlanc JG, Skarsgard ED. An open and shut case for early VATS treatment of primary spontaneous pneumothorax in children. Can J Surg 2007;50:171-4.