Case Report

Spontaneous pneumothorax during pregnancy in a patient with kyphoscoliosis: An uncommon occurrence - a case report

Arun Ashokan[1], C Sreekanth[2], K P Roopa[2]

From [1]Junior Resident, [2]Consultant, Department of Emergency Medicine, Bangalore Baptist Hospital, Bengaluru, Karnataka, India

ABSTRACT

Spontaneous pneumothorax is extremely uncommon during pregnancy. It is not a common complication of kyphoscoliosis, either. For the treatment of the entity, there are no universal guidelines. We report the case of a 30-year-old second gravida in her second trimester of pregnancy with spontaneous pneumothorax. She was managed with emergency tube thoracostomy and other supportive treatment. When pregnant women experience dyspnea and chest pain, the differential diagnosis of pneumothorax should be taken into account. With successful treatment, adverse outcomes are rare.

Key words: Kyphoscoliosis, Pregnancy, Spontaneous pneumothorax, Tube thoracostomy

Like the other organ systems, the respiratory system also undergoes physiologic changes during pregnancy. Both total lung capacity and functional residual capacity decrease during pregnancy [1]. Furthermore, pregnancy-related physiological anemia and a comparatively low umbilical vein partial pressure of oxygen indicate that any maternal hypoxia may not be tolerated by the fetus [2]. It can be challenging to distinguish between the many potential causes of dyspnea during pregnancy, which can range from normal shortness of breath to serious medical disorders. Pregnancy complicated by spontaneous pneumothorax is uncommon. Only fewer than 100 cases are available in English literature [3,4]. Early recognition and treatment are important to prevent further complications in pregnancy. An irregular curvature of the spine in both the anterior (kyphosis) and lateral (scoliosis) directions is known as kyphoscoliosis. The thoracic anatomy is distorted due to the abnormal shape of vertebrae, which makes tube thoracostomy difficult in those patients [5].

We report a case of a 30-year-old female with kyphoscoliosis at 22 weeks of pregnancy who presented to our emergency department with spontaneous pneumothorax.

CASE REPORT

A 30-year-old pregnant woman (G2P1L1, 22 weeks of gestation) presented to our emergency department with complaints of left-sided chest pain, cough, and dyspnea. The symptoms started with a cough for the past 3 days, followed by a sudden onset of chest pain and dyspnea on the last day. She did not have any trauma, vomiting, chills, or fever. She had no noteworthy medical history, with the exception of a history of kyphoscoliosis, and she was not a smoker. Her first pregnancy ended in a full-term, healthy vaginal delivery with no problems for either the mother or the fetus. There was no history of pulmonary illness in the family.

Upon physical examination, her blood pressure was 90/70 mmHg, and she exhibited tachycardia of 120 beats/min. She was having 30 breaths/min at a room air saturation level of 90–92%. There was hyperresonance on the percussion and a reduction in the breath sounds across the left chest.

Differential diagnosis of pulmonary embolism and pneumothorax was considered along with infective causes. A screening echocardiography was performed, which did not show any signs of pulmonary embolism. Lung ultrasound showed absent lung sliding on the left side. The patient was started on oxygen support. A complete pneumothorax on the left chest and a shift of the mediastinum and heart to the right hemithorax were seen on an emergent posteroanterior chest radiograph that was taken with the abdominal shield (Fig. 1a). Obstetrical evaluation revealed no signs of fetal distress. At the fifth intercostal space in the mid-maxillary line, a chest tube was immediately inserted into the left hemithorax. The clinical condition of the patient improved, and a repeat abdominal-shielded chest radiograph showed re-expanded left lung (Fig. 1b).

Access this article online	
Received - 17 November 2025 Initial Review - 06 December 2025 Accepted - 20 February 2026	Quick Response code
DOI: 10.32677/ijcr.v12i3.7958	

Correspondence to: Dr. Arun Ashokan, Junior Resident, Department of Emergency Medicine, Bangalore Baptist Hospital, Bengaluru, Karnataka, India. E-mail: arunemdoc@gmail.com

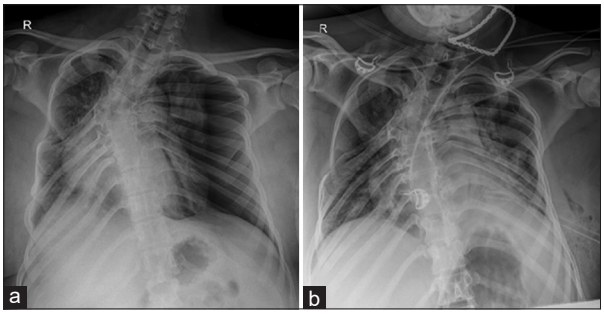

Figure 1: (a) X-ray image of the chest showing left-sided pneumothorax with mediastinal shift to the right; (b) X-ray image of the chest post-international classification of diseases insertion, showing re-expanded left lung

Post-intercostal tube insertion, the patient was shifted to the critical care unit and treated with other supportive measures. The patient's condition gradually improved, and the intercostal tube was removed. 5 days after admission, the patient was discharged home at the patient's request in a stable clinical condition.

DISCUSSION

Pneumothorax is the term for the presence of air in the pleural space [2]. The most frequent causes of spontaneous pneumothorax include cavitary tuberculosis, pulmonary lymphangiomatosis, and rupture of a subpleural apical bulla or bleb. About 53.3% of cases of spontaneous pneumothorax happened during the perinatal period, while 46.7% happened during the first or second trimester [6].

Even though kyphoscoliosis can lead to significant impairment in pulmonary function, leading to reduced exercise tolerance and ventilation due to both obstructive and restrictive lung changes, the occurrence of spontaneous pneumothorax in a patient with kyphoscoliosis is itself an uncommon occurrence [7].

We successfully performed a tube thoracostomy on our patient as emergency treatment. Garg *et al*. previously gathered data on patients who experienced spontaneous pneumothorax during pregnancy. 29.6% of pregnant patients received observation as their first course of treatment, 66.6% received tube thoracostomy, and only 3.8% underwent thoracotomy [2]. Our patient presented with dyspnea along with chest pain. According to earlier research, the most typical symptoms of spontaneous pneumothorax in pregnancy include dyspnea and chest pain [2-4,6].

A radiologic examination's possible risks and benefits must be weighed, and chest radiographs are required to confirm a diagnosis. When a pregnant patient has a suspected pneumothorax, even in the first trimester, conventional chest radiography can be performed safely as long as the abdomen is shielded [2]. The expected radiation exposure to the uterus during each examination, when the mother's abdomen is shielded, is 1–2 mrad (0.01 mGy is equivalent to one mrad). As a result, a chest radiograph can be taken without seriously endangering the fetus from ionizing radiation.

When surgical therapy is necessary, shielded computed tomography is another helpful imaging method that can assist in identifying the underlying anatomic problem and in organizing an operating strategy [6,7]. This imaging modality has a tiny prenatal radiation exposure of 0.01–0.66 mGy, which is probably not linked to any fetal problems at this dosage and gestational age. Finally, when assessing a suspected pneumothorax, diagnostic imaging should not be postponed.

Pregnant women who experience acute pneumothorax receive the same management as non-obstetric patients. Patients with minor pneumothorax (<20% of the hemithorax) were typically admitted and closely monitored. Tube thoracostomy should be used to treat large pneumothoraxes (>20% of the hemithorax) [2]. These individuals have a 30–40% chance of recurrent pneumothorax, especially during delivery [8]. After the first thoracostomy tube was placed, symptoms in about 34% of the cases resolved, and in about 55% of the remaining patients, a surgical intervention with video-assisted thoracoscopic surgery or an open thoracotomy surgery was necessary. Every surgical intervention case that has been documented in the literature has been effective [9].

Vaginal delivery is not always prohibited for pregnant women who have recovered from a pneumothorax. In a case report by Akbar *et al*., the patient presented to the causalty in labor and had a normal vaginal delivery [10]. Patients should be informed that there is a 30–40% higher risk of recurrence during labor. Operative vaginal delivery may be advised for patients who have not had conclusive surgical therapy to avoid worsening or recurring pneumothorax and elevated intrathoracic pressure brought on by expulsive attempts during the second stage of labor [9,11]. A cesarean section performed under general anesthesia is to be avoided. The positive pressure ventilation used during general anesthesia can increase the risk of pneumothorax or cause recurrence. In the event that a C-section is necessary, spinal anesthesia should be used [12].

CONCLUSION

In summary, any pregnant patient experiencing severe dyspnea or chest pain should be evaluated for pneumothorax, which needs to be verified radiographically. The chance of serious maternal or fetal complications is rare in properly managed pneumothorax during pregnancy. To avoid complications, pneumothorax must be identified and treated promptly.

REFERENCES

1. LoMauro A, Aliverti A. Respiratory physiology of pregnancy: Physiology masterclass. Breathe (Sheff) 2015;11:297-301.
2. Garg R, Sanjay, Das V, Usman K, Rungta S, Prasad R. Spontaneous pneumothorax: An unusual complication of pregnancy - A case report and review of literature. Ann Thorac Med 2008;3:104-5.
3. Annaiah TK, Reynolds SF. Spontaneous pneumothorax-a rare complication of pregnancy. J Obstet Gynaecol 2011;31:80-2.

4. Mohammadi A, Ghasemi Rad M, Afrasiabi K. Spontaneous pneumothorax in pregnancy: A case report. Tuberk Toraks 2011;59:396-8.
5. Shah A, Shah K, Haridas AK. Pitfalls and safety measures for difficult thoracotomy in a patient of severe kyphoscoliosis associated with chest wall deformity: A case report. Int J Surg Sci 2020;4:211-3.
6. Tanase Y, Yamada T, Kawaryu Y, Yoshida M, Kawai S. A case of spontaneous pneumothorax during pregnancy and review of the literature. Kobe J Med Sci 2007;53:251-5.
7. Issac S, Das JM. Kyphoscoliosis. In. StatPearls. Treasure Island, FL: StatPearls Publishing; 2025.
8. Jain P, Goswami K. Recurrent spontaneous pneumothorax during pregnancy: A case report. J Med Case Rep 2009;3:81.
9. Lateef N, Dawood M, Sharma K, Tauseef A, Munir MA, Godbout E. Recurrent spontaneous pneumothorax in pregnancy - a case report and review of literature. J Community Hosp Intern Med Perspect 2018;12:115-8.
10. Akbar Z, Buolayyan T, Alanjari A. Tension and recurrent spontaneous pneumothorax during pregnancy: A case report. Gynecol Obstet Open Access 2023;7:157.
11. Thai S, Polak S, Gibson V, Andaz S, El Kady D. Treatment of primary pneumothorax in pregnancy with thoracostomy tube and video-assisted thoracoscopic surgery. J Clin Gynecol Obstet North Am 2024;13:35-40.
12. Shafique MS, Rauf F, Bhatti HW, Chaudhary NA, Hanif M. Recurrent spontaneous pneumothorax in pregnancy -a case report. Int Surg J 2021;8:3449-51.

Funding: Nil; Conflicts of interest: Nil.

How to cite this article: Ashokan A, Sreekanth C, Roopa KP. Spontaneous pneumothorax during pregnancy in a patient with kyphoscoliosis: An uncommon occurrence - a case report. Indian J Case Reports. 2026; 12(3):173-175.