Surgical treatment for recurrent spontaneous pneumothorax during twin pregnancy under video-assisted thoracoscopic surgery (VATS)

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ABSTRACT Spontaneous pneumothorax during pregnancy is a rare pathological condition. Few cases have been reported previously in the literature. There is no universal guideline for the management of this condition yet. We report a case of recurrent spontaneous pneumothorax during twin pregnancy in a 30-year-old woman. Surgical treatment under video-assisted thoracoscopic surgery (VATS) was successfully performed, without subsequent pneumothorax recurrence.

Key Words: pregnancy; spontaneous pneumothorax; video assisted thoracoscopic surgery

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Introduction

Spontaneous pneumothorax is rare during pregnancy, with only approximately 55 cases have been reported in the world literature. Even rarer than its occurrence is its association with twin pregnancy. Here we describe a case of recurrent spontaneous pneumothorax during twin pregnancy in a 30-year-old woman. Surgical treatment under video-assisted thoracoscopic surgery (VATS) was successfully performed, with no subsequent pneumothorax recurrence.

Case report

Six years before initial presentation, a 24 year-old female experienced the first of four spontaneous pneumothorax events. The patient had no smoking history. In the sixth week of her first pregnancy, she felt "sharp chest pain on the left side" radiating posteriorly accompanied by left arm paraesthesia and dyspnea. There was no history of trauma, coughing or sneezing episodes. She was brought to the emergency room where she was admitted with the diagnosis of left pneumothorax, and a chest tube was placed. Good re-expansion was noted on chest x-ray and the patient was discharged home 3d later, and the remainder of her pregnancy was uncomplicated. At 38 weeks' gestation,the patient underwent a spontaneous vaginal delevery of a viable female infant.

Approximately nine months later, a second pneumothorax occurred. Evaluation in the emergency room identified a recurrent left pneumothorax. The patient refused to have operation, then a chest tube was placed.

A third small left pneumothorax responded well to conservative management and no chest tube was required. The patient also refused to have operation.

The patient, 30 years old, got prenatal care of her second pregnancy. Ultrasound assessment revealed twin fetuses in cephalic presentation, with fetal parameters corresponding to a gestational age of 20 weeks. The fetuses were active. At approximately 22 weeks' gestation, the patient experienced "sharp left chest pain" and a spontaneous left pneumothorax was diagnosed by chest radiograph. Chest radiograph over the abdomen shielding revealed a large left pneumothorax with a collapsed lung (Fig. 1). A chest tube was placed. Because of persistent air leak. Surgical treatment under video-assisted thoracoscopic surgery (VATS) was done through pleurectomy and mechanical scrubbing of the pleural surface. Subsequently, she had a normal distokia with no recurrence of the pneumothorax.

Discussion

Spontaneous pneumothorax during pregnancy is a rare pathological condition, in which, air collects into the pleural cavity, accompanied by lung collapse without any trauma to the lung or chest wall. This condition is generally caused by the rupture of small apical blebs or bullae in the absence of other

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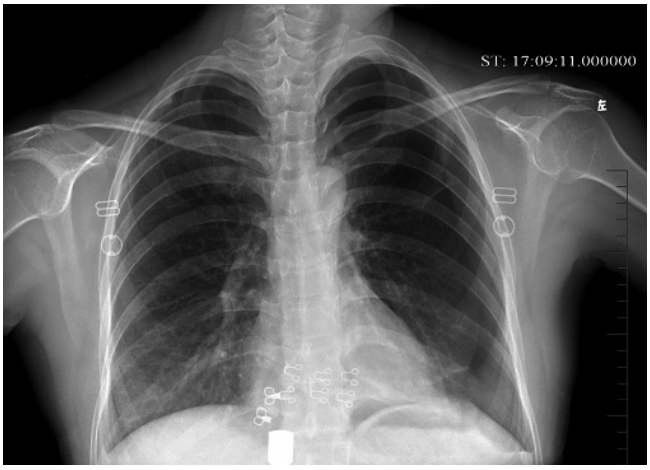

Fig 1. Chest radiograph over the abdomen shielding revealed a large left pneumothorax with a collapsed lung

significant pulmonary diseases (1). Yet only approximately 55 cases have been reported in the world literature. So the true incidence of this condition is unknown and this number is almost certainly an underestimation (2), although previous authors have described spontaneous pneumothorax in pregnancy (3). Ours is the first report to describe treatment for recurrent spontaneous pneumothorax during twin pregnancy under video-assisted thoracoscopic surgery (VATS).

The typical symptoms of spontaneous pneumothorax, regardless of cause, include pleuritic chest pain associated with dyspnea (4). Physical examination may show tachypnea, tachycardia, cyanosis, or ipsilateral decreased breath sounds.

Chest radiographs are required for definitive diagnosis. Ionizing radiation represents a potential risk to the fetus, particularly during the first 8 weeks of development. It is safe to proceed with the standard chest radiography without placing the fetus at substantial risk from ionizing radiation if the abdomen is shielded.

Treatment of pneumothorax during pregnancy is controversial. The use of prolonged intercostal drainage was considered as a temporizing measure for spontaneous pneumothorax in late pregnancy to be safe and effective. However, any ventilatory problems associated with pneumothorax may not be well tolerated by a pregnant patient and her fetus (5). So surgery is an option for persistent or recurrent pneumothorax despite adequate drainage. Recently, use of thoracoscopy has increased because the same procedures can be done through the thracoscope as with complete thoracotomy. The advantages of thoracoscopic surgical treatment over thoracotomy are decreased time of exposure to anesthetic drugs, rapid lung expansion, decreased postoperative pain, a potentially more brief postoperative period, and avoidance of a painful thoracotomy (6).

In conclusion, recurrent pneumothorax during pregnancy can be treated in the same way as in non-pregnant women, prognosis of which is generally good for both the mother and the baby. VATS have been an increasingly successful procedure for managing patients. There were no maternal or foetal complications reported in those who underwent antepartum surgical intervention.

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