



Spontaneous Pneumothorax in A Pregnant Patient Leading to Fetal Demise

Gebe Bir Hastada Fetal Ölüme Yol Açan Spontan Pnömotoraks

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Abstract / Özet

Spontaneous pneumothorax rarely occurs during pregnancy. The most common cause is the rupture of a subpleural apical bulla or bleb, due to the increased respiratory demand of the peripartum period. Respiratory failure is the main risk for the mother; fetal risks include reduction in oxygen supply and preterm labor. Here, we present a case of spontaneous pneumothorax in pregnancy leading to fetal demise.

Key Words: Spontaneous Pneumothorax, fetal demise, hemothorax

Spontan pnömotoraks gebelik sırasında nadiren gelişen bir antitedir. En sık neden peripartum dönemde artan respiratuar ihtiyaçlara bağlı gelişebilen subplevral bir apikal bülün yırtılmasıdır. Solunum yetmezliği anne için temel risktir, fetal riskler ise sırasıyla oksijen dağılımının azalması ve preterm doğumdur. Bir burada fetal ölüme yol açan bir spontan pnömotoraks olgusunu sunuyoruz.

Anahtar Kelimeler: Spontan Pnömotoraks, fetal ölüm, hemothorax

Introduction

Spontaneous pneumothorax during pregnancy is a rare phenomenon and the exact incidence is unknown. Sixty cases of pneumothorax in pregnancy have been previously reported. The most common cause is rupture of a subpleural apical bulla or bleb, due to the increased respiratory demand of the peripartum period. (1, 2). Diagnosis, treatment and the health of the infant are all possible problems related to this event. Here, we present a case of spontaneous pneumothorax in pregnancy leading to fetal demise.

Case Report

A 29-year-old female at 24.2 weeks of twin gestation was referred to our clinic with a diagnosis of pleural effusion after a three day observation period in another hospital. The patient had sudden onset of right-sided pleuritic chest pain associated with dyspnea after a coughing episode. She was a thalassemia carrier, and had no history of smoking, drug abuse or history of previous pulmonary disease.

Obstetric ultrasound showed appropriately grown twin gestation at 24 weeks. On thoracic examination, decreased breath sounds and hyperresonance over the left hemithorax were observed. Physical examination showed a notable rise in pulse rate (140 beats/min), hypotension, cold, clammy extremities and tachypnea. The hemoglobin (Hb) level was 5.6 g/dL at the first blood count. Transfusion was made by two units of erythrocyte suspension. Thorax computed tomography CT showed left hydropneumothorax with total lung collapse and mediastinal shift. Thoracic surgeons inserted a thorax tube. Physical signs, especially dyspnea, became more severe in a few hours and the hemoglobin value showed a sudden decrease to 3.3 g/dL despite blood replacement. Nearly 2000 cc bloody drainage, decreased hemoglobin value, physical signs led to the decision of thoracoscopic intervention of the left hemithorax. Thoracoscopy revealed a small bleeding apical bleb. Thoracoscopic excision of the left apical lung bleb was performed. Four units of red packed blood cells and four units of fresh frozen plasma was administered in the perioperative period. At the first day of the operation the patient was extubated and hemodynamically stable. Hemoglobin level was 7.0 g/dL.

Control obstetric ultrasound showed demise of both fetuses at the 12th hour after surgery. Oxytocin was used for induction and both fetuses were delivered vaginally. At the seventh day of the operation, the patient was discharged and the family refused the autopsy recommendation for the fetuses. Written informed consent was obtained from the patient.

Discussion

Spontaneous pneumothorax is extremely rare and potentially serious event for the fetus and mother during pregnancy. Respiratory failure is the main risk for the maternal morbidity and mor-

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Received Date/Geliş Tarihi:
15.10.2012

Accepted Date/Kabul Tarihi:
22.05.2013

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tality; fetal risks include reduction in oxygen supply and preterm labor (1, 2). Prompt recognition and treatment of pneumothorax is essential for preventing complications. Diagnosis of pneumothorax can be confirmed by thorax radiography with an abdominal shield without risk of ionizing radiation for the fetus. Shielded computed tomography (CT) is also a useful imaging technique that can help in defining the underlying anatomic abnormality and in planning an operative approach when surgical treatment is indicated (3). Our case was observed for several days in another hospital because of pleural effusion in the left hemithorax diagnosed by a thoracic ultrasound. Therefore we chose computed tomography (CT) for the definitive diagnosis.

After excluding pulmonary embolism, diagnosis of pneumothorax should be considered in any pregnant woman with chest pain and dyspnea. Our case was observed for several days in another hospital because of pleural effusion in the left hemithorax diagnosed by thoracic ultrasound. Diagnosis of pneumothorax can be confirmed by a thorax radiograph, and it is safe to proceed with the standard thorax radiography with an abdominal shield without placing the fetus at substantial risk from ionizing radiation. Shielded computed tomography (CT) is also a useful imaging technique that can help in defining the underlying anatomic abnormality and in planning an operative approach when surgical treatment is indicated (2, 4, 5).

Management of spontaneous pneumothorax during pregnancy is controversial. Usually at the first step, conservative management is preferable unless the hemodynamic status and pulmonary functions are stable (6, 7).

Surgical intervention is recommended for a recurrent, large and persistent pneumothorax despite adequate drainage (8). Thoracoscopy or thoracotomy are the choices of surgical methods. The advantages of thoracoscopic intervention over a thoracotomy are decreased time of exposure to anesthetic drugs, rapid lung expansion, decreased postoperative pain and shorter operation time (9). Persistent bleeding, reduction of hemoglobin level and hemodynamic instability despite conservative management necessitated surgical intervention in our case. We preferred thoracoscopic intervention as a diagnostic and therapeutic tool.

Garg et al. (10) reviewed the data. Fifty six cases of antepartum pneumothorax have been reported in this review. 3.8% of the patients required thoracotomy. There were no maternal complications and only one fetal loss reported in those who underwent antepartum surgical intervention.

In our case, fetal demise could be attributed to fetal hypoxia due to the long observation period and delayed management. Hemothorax may cause hemodynamic and respiratory deterioration. The hemoglobin value decreased to 3.3 g/dL despite transfusion. Continued bleeding and preoperative maternal hypoxia probably triggered hypoxemia of the fetuses and fetal death occurred.

Conclusion

Pneumothorax warrants consideration in any pregnant patient with acute chest pain, dyspnea, or history of prior pneumothorax and must be confirmed radiographically. Avoidance of appropriate diagnostic tools in a pregnant patient may lead a significant

delay in diagnosis. Despite the fact that pneumothorax represents as uncommon pathology, usually underestimated in literature, the diagnosis of pneumothorax has capital importance in order to prevent the complications. It should be contemplated in any pregnant patient with dyspnea and chest pain.

Conflict of Interest

No conflict of interest was declared by the authors.

Peer-review: Externally peer-reviewed.

Informed Consent: Written informed consent was obtained from the patient who participated in this study.

Author Contributions

Concept - I.U.; Design - I.U., i.K.; Supervision - R.H.; Funding - I.U.; Materials - I.U.; Data Collection and/or Processing - I.U.; Analysis and/or Interpretation - I.K., R.H.; Literature Review - I.U.; Writing - I.U.; Critical Review - A.Y.

Çıkar Çatışması

Yazarlar herhangi bir çıkar çatışması bildirmemişlerdir.

Hakem değerlendirmesi: Dış bağımsız.

Hasta Onamı: Yazılı hasta onamı bu çalışmaya katılan hastadan alınmıştır.

Yazar Katkıları

Fikir - I.U.; Tasarım - I.U., i.K.; Denetleme - R.H.; Kaynaklar - I.U.; Malzemeler - I.U.; Veri toplanması ve/veya işlemesi - I.U.; Analiz ve/veya yorum - I.K., R.H.; Literatür taraması - I.U.; Yazıyı yazan - I.U.; Eleştirel inceleme - A.Y.

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