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PAGES: 181-182

ORIGINAL PDF URL: <http://journal.acibadem.edu.tr/en/download/article-file/1701898>

Management of Cough-Induced Rib Fracture at Term Pregnancy: A Case Report

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Presented at the 25th European Congress of Obstetrics and Gynaecology in conjunction with the 15th Congress of Turkish Society of Obstetrics and Gynaecology, Antalya, May 17–21, 2017

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Received : June 20, 2018
Revised : September 26, 2018
Accepted : November 12, 2018

ABSTRACT

Spontaneous rib fracture in pregnant women is a rare entity. It is generally occurs after a coughing episode. The main symptom is acute developed persistent pain. Chest radiography is generally sufficient for precise diagnosis. In this article, we present the management of a pregnant woman in the third trimester with cough related rib fracture.

Keywords: Chest pain, rib fracture, pregnancy

MİAD GEBELİKTE ÖKSÜRÜĞÜN TETİKLEDİĞİ KABURGA KIRIĞININ YÖNETİMİ: BİR OLGU SUNUMU

ÖZET

Gebelikte spontan kaburga kırığı nadir bir durumdur. Genellikle öksürük epizodundan sonra gelişir. Akut başlangıçlı devam eden göğüs ağrısı ana bulgudur. Kesin tanı için akciğer filmi genellikle yeterli olur. Bu makede öksürük ile ilişkili kaburga kırığı olan, üçüncü trimester gebeliği bulunan hastanın yönetimi tartışılmıştır.

Anahtar sözcükler: Göğüs ağrısı, kaburga kırığı, gebelik

Cough related rib fracture has been previously described in obstetric patients. The differential diagnosis is important. Pneumothorax and/or hemothorax could be a part of rib fracture or their symptoms may be similar. We discussed the management of delivery in pregnant women in the third trimester with the diagnosis of rib fracture.

Case

A 35 year old G1 P0 pregnant woman was admitted to the emergency department at 38 weeks of gestation with left acute onset thoracic pain. Her complaints started 2 days ago suddenly after a chronical cough episode. She had difficulty to perform deep inspiring and to change her position. Her blood pressure was 120/80 mmHg. She had gestational diabetes controlled with diet. On her obstetrical examination, ultrasound revealed a fetus compatible with 39 weeks 2 days of gestation in an occiput posterior vertex presentation. The estimated fetal weight was found to be 3745 grams. The amniotic fluid measurement was 23 cm. Nonstress test was normal. A chest radiograph was requested with suspicion of rib fracture and to make the differential diagnosis of related complications such as pneumothorax and hemothorax. Her blood count

and CRP results were normal and radiology demonstrated minimally displaced fracture of the left 10th rib (Figure 1). Paracetamol therapy was chosen for analgesia in the reported case. Bed rest was recommended for rapid healing. Her symptoms were regressed within a week. The weekly obstetrical visit was performed. The EFW was 3818 grams at 39 weeks of gestation. Cesarean section was performed under combined epidural spinal anesthesia at 39 weeks 3 days due to cephalopelvic disproportion. A 3650-gram healthy male baby was delivered.

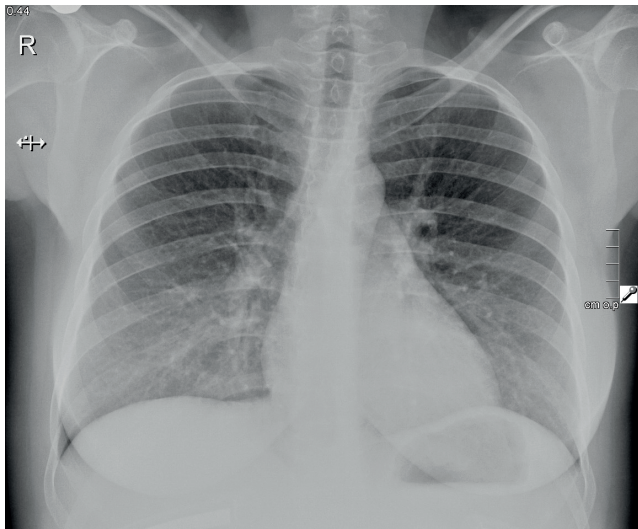


Figure 1. Minimally displaced 10th rib fracture is showed at X-ray graphy

Discussion

The most frequent complication of violent or sustained cough is rib fracture (1). These fractures are caused by opposing muscular force in the middle of the ribs at the axillary line from serratus anterior and external oblique muscles. The shape of the pregnant thorax, higher intra-thoracic pressure of pregnancy, nutritional status and drugs may contribute to rib fracture during pregnancy (2). Smoking, ethanol abuse, glucocorticoid administration, heparin treatment and idiopathic osteoporosis in pregnancy are possible causes of bone loss in obstetrics patients with rib fractures (2). In the presented case, we did not measure bone mineral density to evaluate

osteoporosis. Polyhydramnios in this pregnant woman near delivery may lead to gastric reflux which could be the reason of chronic cough. We discussed with the patient the refracture possibility during labor. The third stage of labor needs patient expulsive effort. An elective cesarean section was performed for delivery. Local anesthesia was selected to avoid general anesthesia-related complications. Extubation may provoke cough which may cause refracture at the same level during the healing period. We did not apply any uterine fundal pressure for the delivery of the fetal head. As she had a difficulty of posture, the first nursing experience could be painful if refracture occurred.

Rib fractures in pregnancy occur generally in late gestations. They tend to be left sided as in our case. Lower ribs are more affected; however, multiple fractures are not common (3). Sano et al. investigated the characteristic of the cough-induced rib fractures. The median age was 39.5 and 71% of the patients did not have any underlying diseases including chronic lung disease (4). On the other hand, another study concluded that cough-induced rib fractures are related to chronic obstructive lung disease, bronchial asthma, and systematic and/or high dose inhalation for steroid therapy (5). Differential diagnosis of pneumothorax and pulmonary embolism is important for the treatment. Manual uterine fundal pressure during the second stage of labor may also be a reason for rib fracture in obstetric patients (6). Pain relief may be ineffective in cases with a rib fracture. Tramadol, nerve block with bupivacaine and epidural insertion are used in the literature (7).

Conclusion

Non-traumatic rib fracture in obstetric patients is a rare event. Acute onset chest pain may be the symptom of rib fracture. Chest radiography is the first line of diagnostic modality. Continuous coughing may delay the healing period of the patient. Valsalva maneuver and expulsive effort during delivery may be difficult and painful for the patient. In this case report, we performed cesarean delivery under combined spinal-epidural anesthesia to prevent refracture.

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