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## ÖKSÜRÜĞE BAĞLI SPONTAN KOT FRAKTÜRÜ

## COUGH-INDUCED SPONTANEOUS RIB FRACTURE

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## Öz

Otuz sekiz yaşında bayan olgu göğüs ağrısı yakınması ile kliniğe başvurdu. Bilinen bir travma öyküsü olmayan, 1 aydır yoğun öksürük yakınması olan olguda yapılan tetkikler sonrası 2 kotta fraktür saptandı. Bu çalışmada nadir görülen spontan kot fraktürü bir olgu ile sunuldu.

**Anahtar Kelimeler:** kaburga kırığı, öksürük, spontan,

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## Abstract

A thirty eight year old female patient presented to our clinic with the complaint of chest pain. She had no history of a known trauma. She had had intense coughing for a month. Physical examination revealed fractures in two of her ribs. Spontaneous rib fracture, a rare pathology, has been presented here with a case.

**Key words:** cough, rib fracture, spontaneous,

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## **INTRODUCTION**

A cough is an important defense mechanism against exogenous pathogens and the most frequent symptom of respiratory tract infections seen in daily medical practice. It is sometimes the main cause of the pathology in the patient. In such cases, cough-induced spontaneous rib fracture is one of the most rarely seen conditions. The purpose of this study was to present a case with intense cough-induced rib fracture in the light of the relevant literature.

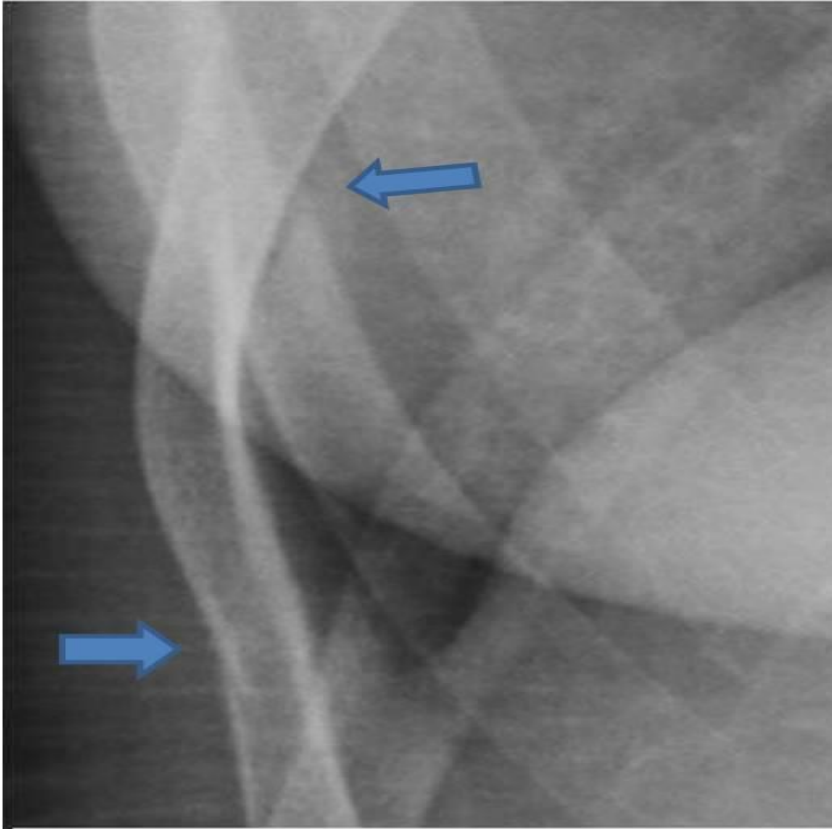
## **CASE**

A thirty eight year old female presented to our outpatient clinic presenting with cough lasting for one month and stabbing chest pain which began after a bout of coughing three days ago. She had no history of a known trauma or chronic disorder. On physical examination, palpation revealed tenderness at the level of the lower ribs in the right lateral part of the thorax. Both hemithoraces participated equally in respiration, and breath sounds were bilaterally equal; there were no rales or rhonchi. The chest-X-ray showed lines of displaced rib fractures in the lateral part of rib 9 and 10 without additional pathology (Fig. 1). The bone density was measured by densitometry, but there was no finding of osteoporosis. In the light of the above findings, the diagnosis of spontaneous cough-induced rib fracture was established.

For treatment, a myorelaxant and an analgesic were prescribed, and the patient was advised to rest. On her outpatient control after a week, the patient showed a marked relief from pain.

## **DISCUSSION**

Regarding the causes, rib fractures are categorized into three groups: traumatic, pathological, and stress fractures. The most prevalent rib fractures encountered in clinical practice are traumatic fractures. Pathological rib fractures are generally due to malignancies or osteoporosis. Rib stress fractures occur under recurrent physical force and generally in rib 1 due to the extension force of the muscles. Cough-induced rib fractures comprise a very rare and special form of stress fractures (1-3).



*Figure 1. The chest-X-ray showed lines of displaced rib fractures in the lateral part of rib 9 and 10(Arrows).*

Cough-induced rib fractures generally occur in ribs 5 to 10 and particularly in the lateral region of the thoracic wall. The opposing pulling force of the serratus anterior and external oblique muscles on the rib at the time of coughing are held responsible for the underlying mechanism. Pathologies such as pneumothorax and hemothorax may also accompany spontaneous rib fractures (4). Our case had displaced rib fractures in the lateral parts of ribs 9 and 10.

Cough-induced rib fracture was first described by Gooch in 1773, and the first case of cough-induced rib fracture was reported by Monttegia in 1802. Sneeze-induced rib fracture was first reported by Castella in 1861 (5).

Hanak et al. (6) evaluated 54 cases of cough-induced rib fractures seen in 9 years, reporting 42 (78%) female cases, chronic cough in 85% of the cases, and diagnostic sufficiency of chest X-Rays in 58% of the cases. Our patient was also female, had the complaint of a cough for a month, and 3 days before presentation, she had severe pain on her

thorax following coughing. The Chest X-Ray was sufficient to establish the diagnosis. However, in suspect cases or when an additional pathology is considered, a thoracic CT will be helpful for establishing the diagnosis.

In cases with rib fracture only, medical therapy and rest are generally a sufficient approach for treatment. Surgery may be indicated in cases of severely displaced rib fracture, serious hematoma at the fracture site, development of hemothorax or pneumothorax, and additional pathologies such as diaphragmatic rupture (7). Our case had total relief with medical therapy and showed no additional pathology.

## CONCLUSION

Spontaneous rib fracture induced by cough is a very rare condition. This condition should be considered in patients with sudden thoracic pain starting after intense bouts of coughing. In suspect cases, advanced examination techniques such as thoracic CT will be helpful in establishing the final diagnosis.

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