

**Berkant ÖZPOLAT**  
**Rasih YAZKAN**

## CASE REPORT

# ECTOPIC CHEST TUBE INSERTION TO THORACIC WALL

## ABSTRACT

**T**ube thoracostomy is an invasive procedure and may cause complications in inexperienced hands. We present a case where a chest tube placed into the chest wall. A 65-year-old man was brought to our hospital due to a vehicle accident. The initial treatment was done at the accident place. The chest roentgenogram showed a left sided hemo-pneumothorax, multiple rib fractures and a chest tube inserted to the thoracic wall. To exclude other possible injuries, a computed tomography was performed, revealing the same condition. Multiple rib fractures, subcutaneous emphysema or excessive hematoma can make chest tube insertion difficult due to balloting thoracic wall and the clamp may be inserted into the chest wall leaving the tube ectopically. Elderly patients sustaining blunt chest trauma with rib fractures have increased mortality and thoracic morbidity of younger patients with similar injuries. So in elderly patients great caution is necessary not to produce additional complications.

**Key words:** Chest tube, Complication, Hemopneumothorax.

## OLGU SUNUMU

# GÖĞÜS DUVARINA EKTOPIK OLARAK YERLEŞTİRİLEN BİR GÖĞÜS TÜPÜ

## Öz

**T**üp torakostomisi tecrübesiz ellerde komplikasyonlara neden olabilecek invazif bir işlemdir. Trafik kazası nedeniyle göğüs tüpü cilt altına yerleştirilen multipl kot fraktürü ve hemopnömotoraksı olan 65 yaşında bir vaka sunulmaktadır. Vakanın ilk tedavisi ve tüp torakostomisi işlemi mahalinde yapıp hastanemize sevk edildi. Acil serviste çekilen Akciğer grafisi ve diğer muhtemel travma komplikasyonlarını saptamak için çekilen Toraks BT de tüpün göğüs duvarına yerleştiği görüldü. Multiple kot fraktürleri ciltaltı amfizemi ve hematoma nedeniyle toraks duvarının ballotmanı tüpün ektoptik olarak takılmasına neden olabilir. Yaşlı hastalarda künt toraks travmaları sonucu meydana gelen kot kırıkları nedeniyle gençlere göre zaten artmış olan morbidite ve mortalite dikkate alınarak tüp torakostomisi esnasında olabilecek ek komplikasyonlara dikkat edilmelidir.

**Anahtar sözcükler:** Göğüs tüpü, Komplikasyon, Hemopnömotoraks.

## İletişim (Correspondance)

Berkant ÖZPOLAT  
Sağlık Bakanlığı Dışkapı Yıldırım Beyazıt Eğitim ve  
Araştırma Hastanesi Kalp Damar Cerrahisi  
Kliniği ANKARA  
Tlf: (0312) 432 17 67  
e-mail: berkantozpolat@yahoo.com

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Sağlık Bakanlığı Dışkapı Yıldırım Beyazıt Eğitim ve  
Araştırma Hastanesi Kalp Damar Cerrahisi  
Kliniği ANKARA



## INTRODUCTION

Tube thoracostomy is an invasive procedure and may cause complications in inexperienced hands. In the literature uncommon complications of chest tube placement like empyema, unresolved pneumothorax, persistent effusion or incorrect placement were described (1).

We present a case where the chest tube was placed into the chest wall at a peripheral hospital in the vicinity of the accident.

## CASE REPORT

A 65-year-old man was brought to our hospital due to a vehicle accident happened two days ago. We learned that the initial treatment was done at the accident place in an outside hospital and a chest tube has been placed. On the physical examination; he had tenderness due to multiple rib fractures at the left hemithorax, thoracic wall hematoma and echymosis, and a chest tube on the left hemithorax. There was no oscillation of fluid in the tube and no apparent drainage. He had chest pain and shortness of breath. The chest roentgenogram showed a left sided hemo-pneumothorax, multiple rib fractures and a chest tube inserted to the thoracic wall (Figure 1). To exclude other possible injuries, a computed tomography was performed, revealing the same condition (Figure 2).

The previous tube is removed and a new chest tube is inserted from the 7th intercostal space at posterioraxillary line which drained the hemo-pneumothorax. Intercostal blockage with bupivacain was used to control the pain. The tube was taken on the fifth day and the patient was discharged uneventfully.

## DISCUSSION

Although chest tube insertion is generally considered as a safe procedure, it is a blind manoeuvre and serious life threatening complications such as perforation of right atrium, great vessel injury, massive intercostal bleeding and death secondary to vagal irritation was reported (1,2).

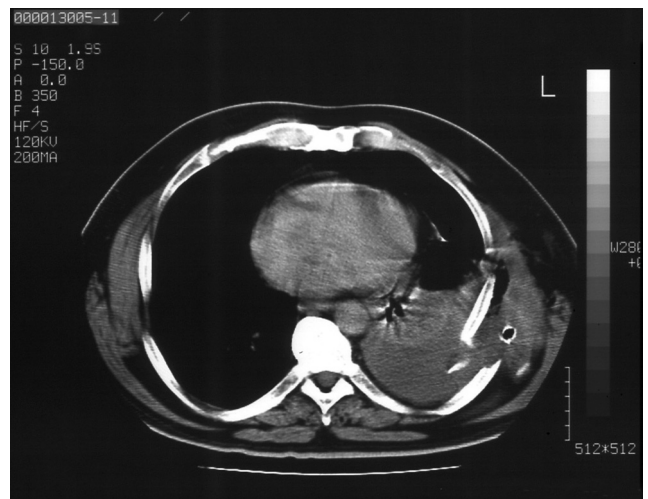
Besides these serious complications, subcutaneous placement of chest tube is extremely rare and reported as 1-1.8 % in the literature (3,4). In cases of trauma as the tube thoracostomy was performed under hurried, less controlled circumstances the complication rate increases. In a study it was found that 39.4 % of the chest tubes were placed completely incorrectly at the scene of an accident (5).

Multiple rib fractures subcutaneous emphysema or excessive hematoma may cause a chest tube insertion difficult. As



**Figure 1**— Chest X-ray showing multiple rib fractures, hemo-pneumothorax and the chest tube placed in the thoracic wall.

the thoracic wall is not stable due to the fractures, during the percutaneous insertion of the clamp, the parietal pleura may not be opened due to balloting thoracic wall and the clamp may be inserted into the chest wall leaving the tube ectopically. Drainage of hematoma from the tube may mislead the physician that it was placed inside the thorax. Failure to carry out a finger exploration of the pleural cavity prior to the placement of the chest tube increases the risk of ectopic placement. Elderly patients sustaining blunt chest trauma with rib fractures have twice the mortality and thoracic morbidity



**Figure 2**— Computed Tomography showing rib fractures, hemothorax and ectopic chest tube.



of younger patients with similar injuries. Bulger demonstrated that for each additional rib fracture in elderly mortality increases by 19% (6). So in elderly patients great caution is necessary not to produce additional complications.

As a conclusion in this article we emphasize that proper training and experience is necessary in the placement of a chest tube to decrease the complications especially in the elderly patients.

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