



OCCULT HAEMOTHORAX: TUBE THORACOTOMY OR CONSERVATIVE MANAGEMENT? A STUDY IN A TERTIARY HEALTHCARE CENTER

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ABSTRACT

Intrapleural blood detected by computed tomography scan, but not evident on plain chest radiograph, defines occult hemothorax. This study determined the role for tube thoracostomy. The ER management of Haemothorax depends on their etiology, their size, and clinical stability of the patient. The term occult Haemothorax (OH) is a Haemothorax that is not suspected on the basis of clinical examination or initial chest radiography, but is later detected on computed tomography (CT) scan. Some Physicians favour placement of a ICD tube for patients with OH, while others favour close observation without chest drainage. This study was conducted both to determine the incidence of OH and to describe its current treatment status in the chest trauma population at an Indian tertiary trauma centre.

KEYWORDS : Occult Haemothorax, chest trauma, Tube Thoracostomy

INTRODUCTION

Percutaneous tube thoracostomy (PTT) remains the most widely performed procedure to manage blunt and penetrating chest trauma. Rib fracture is the most common blunt thoracic injury, with Haemothorax ranking third. A haemothorax is a condition that can rapidly evolve and become life-threatening by becoming a Massive haemothorax with cardiorespiratory compromise. Haemothorax has therefore been identified as a condition for which a basic procedure, percutaneous tube thoracostomy, can prevent significant morbidity and mortality. Occult hemothorax is present when the computed tomography (CT) scan of the chest shows intrapleural blood that is not readily apparent or quantifiable on a supine chest radiograph.

Recurrent air leak and failure to evacuate blood from the pleural space often result in complications including clotted hemothorax, empyema and fibrothorax leading to extended hospitalizations.. Current guidance by the American College of Surgeons Advanced Trauma Life Support advises ICD tube placement for any traumatic haemothorax, although it suggests that asymptomatic haemothorax can be managed with observation.

Some physicians favour placement of a ICD tube for all patients with OH, particularly those who are haemo dynamically unstable, while others favour close observation without chest drainage.

The role of chest computed tomography (CCT) in trauma evaluation has expanded greatly for chest trauma. The practice of obtaining a CCT on the basis of mechanism, without physical findings suggesting thoracic injury and/or with a negative initial plain chest radiograph (CXR), has become common. This practice is nurtured by advances in technology such as rapid multi-slice computed tomography (CT). The purpose of this study was to evaluate occult hemothorax in patients with blunt trauma and determine the role of tube thoracostomy in their management.

This study was a retrospective study done at Mahatma Gandhi Mission's Medical college and Hospital, Kamothe, Navi Mumbai.

This hospital is in a rural area of Western India. A total of 70 patients who presented to the emergency resuscitation room with blunt chest trauma were included in this study. Results were analysed with appropriate statistical tests considering the following parameters Age, Gender, Mode of injury, Types of chest trauma, Management of Chest Trauma

RESULTS

Patients admitted to hospital with Occult Haemothorax were 70. The age group with maximum occult haemothorax was between 21-30 years. Young adults were in majority. There were majority of males (49) and females (21). Most common cause was Road traffic accidents (30) followed by fall from height (21) and Assault (16). Most common associated chest trauma were rib fractures (56) followed by flail chest (10) and Sternum fracture (4)

Total patients managed by ICD insertion were 24 and managed conservatively were 46

Table 1: Age Distribution

Age(in years)	Number of patients presented
0-10	3
11-20	8
21-30	24
31-40	18
41-50	11
51-60	5
61-70	1

Table 2: Gender Distribution

Gender	Total patients
Males	49
Females	21

Table 3: Mode of Chest Trauma

METHODOLOGY

Mode of injury	Total Patients
Road traffic accident	30
Assault	16
Fall from height	21
Workplace injury	3

Table 4: Associated Chest Trauma

Associated Chest trauma	Total Patients
Rib Fractures	56
Flail chest	10
Sternum fractures	4

Table 4: Management of Chest Trauma

Management of Chest Trauma	Total Patients
ICD insertion	24
Conservative management	46

DISCUSSION

Only 70 patients qualified for the study. In the above study, males (70%) were more affected than females (30%). Literature also suggests that most affected gender is male. Most common cause being Road traffic accidents. Other causes were fall from height, assault, workplace injury.

An Occult haemothorax with dropping vitals were indicative of the need for ICD insertion. Studies have focused on whether there is a role for conservative management for occult haemothorax that are not initially visible on chest radiography and diagnosed on CT.

Although these studies have been useful in establishing management pathways for traumatic haemothorax, they do have limitations. It is difficult to translate their findings into clinical practice in which CT is becoming the first-line investigation. Furthermore, the distinction between overt and occult can be misleading.

Those patients who required immediate interventions represented a more morbid population than those managed conservatively.

CONCLUSION

Occult hemothoraces can be managed safely without tube thoracostomy. Intervention should be restricted to those patients who have an increase in the size of the hemothorax on follow-up radiographs or become symptomatic under observation. Patients with a hemothorax greater than 15 mm on CT are more likely to require drainage.

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