

# Spontaneous Haemothorax: A Case Report

Choonaik Ho\*, Abdul Rahman Ismail\*\*

\*Surgical Department Hospital Sultanah Aminah Johor Bahru, Johor, \*\*Cardiothoracic Department Hospital Sultanah Aminah, Johor Bahru, Johor

### SUMMARY

Haemothorax is one of the less common presentations that requires hospital admission. Most cases are associated with underlying causes, but there is such an entity called spontaneous haemothorax. Spontaneous haemothorax is commonly associated with adhesions within the pleural cavity. Here, we reported two cases of young adults who presented with massive spontaneous haemothorax and required emergency thoracotomy for haemostasis purpose.

### INTRODUCTION

Haemothorax simply means presence of blood within the pleural space. Some studies suggest that a haematocrit of more than 50% within the pleural effusion is necessary to rule out a bloody effusion<sup>1,2</sup>. Haemothorax is commonly associated with penetrating or even blunt trauma. It can also be a complication from other underlying diseases such as malignancy, haematological, or connective tissue disorders. However, some patients may present with a massive haemothorax without any obvious cause, termed spontaneous haemothorax<sup>1</sup>.

### CASE PRESENTATION

#### Case report 1

A 25 years old man complained of sudden right sided chest pain associated with shortness of breath. He was brought to emergency department and initial evaluation was performed. Chest radiography showed a right pleural effusion and he was sent for immediate contrast-enhanced Computed Tomography (CT) which suggested diagnosis of a haemothorax. A chest tube was inserted and drained about 200mls continuously for three consecutive hours. His haemoglobin dropped from 14.8g/dl to 9.18g/dl, and he required a blood transfusion. An emergency right thoracotomy was performed and a bleeding adhesion within the pleural cavity was identified and clipped. Post-operative recovery was uneventful and he was discharged home well on fifth post-operative day

#### Case report 2

An 18 years old man, presented with left sided chest pain associated with shortness of breath for one day. During the initial evaluation in emergency department, he was noted to be pale with a dull percussion note over the left chest. Chest X-ray showed a left massive haemothorax and a chest tube was inserted. 1200mls blood was drained immediately with

persistent drainage of frank blood of more than 150ml per hour subsequently. His haemoglobin dropped from 14.0g/dl to 10.0g/dl and he required a blood transfusion. Contrast-enhanced CT thorax showed a massive left haemothorax. An emergency thoracotomy was performed to evacuate the collection but no active bleeding point was identified. Post-operative recovery was uneventful, and he was discharged well on the fifth post-operative day.

### DISCUSSION

Haemothorax is defined as pleural fluid which contains haematocrit of more than 50% of the blood haematocrit. It is important to measure the haematocrit level because it is difficult to differentiate the haemorrhagic pleural effusion from a true haemothorax. This can include a vast differential diagnosis with different management strategies.

Commonly, haemothorax is related to either penetrating or blunt trauma. It can also be due to iatrogenic injury or complication of haematological, malignancy or connective tissue disorder. When a haemothorax was not associated with any obvious trauma, it is termed spontaneous haemothorax. Spontaneous haemothorax warrants further investigation in order to rule out associated underlying disorder. However, when there is no identifiable cause, then it is termed as an idiopathic spontaneous haemothorax<sup>1,2</sup>.

Idiopathic spontaneous haemothorax is commonly associated with pneumothorax. It occurs mostly in young adults aged ranging from 22 to 35 years. There are few hypothesis which explains the mechanism of bleeding. First, bleeding can be from torn adhesions between the parietal and visceral pleura, commonly found at the apex of the lung as reported by Schwarzman. Bleeding adhesions are identified in more than 50% of the spontaneous haemothorax cases. Secondly, it can be due to rupture of vascularised bullae and underlying lung parenchyma or due to small non-contractile aberrant vessel between parietal pleura and bullae<sup>2,3</sup>.

Regardless of causes, any massive haemothorax requires attention for fluid resuscitation and blood transfusion. All patients should be promptly resuscitated according to ATLS guideline by setting up two large bore branulas and fluid resuscitated accordingly. A chest tube should be inserted under with a sterile technique to evacuate the haemothorax. Drainage should be assessed hourly and decision for surgical intervention should be made if any one of the following

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Corresponding Author: Choonaik Ho, Hospital Sultanah Aminah, General Surgical, Jalan Abu Bakar, Johor Bahru, Johor 81000, Malaysia  
Email: choonaik81@gmail.com

conditions is fulfilled:

1. Evacuated more than 1000cc after initial chest tube insertion
2. Persistent drainage about 150cc-200cc hourly for 3 to 4 hours
3. Repeated blood transfusion in view of hemodynamically instability

There remains debate regarding the optimal management of spontaneous haemothorax. However, most favour surgical intervention compared to chest tube drainage per se in particularly in those patients who fail conservative management beyond 24 hours.

#### CONCLUSION

Bleeding adhesion in young adults should be high on the list of differential diagnosis for a spontaneous haemothorax. However, investigation is warranted in order to rule out associated underlying illness. Early thoracotomy is preferred in idiopathic spontaneous haemothorax in view of likely bleeding adhesion which commonly fails to settle with conservative management.

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