Case Report

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Medicine

A RARE CASE OF ISOLATED PNEUMOMEDIASTINUM FOLLOWING BLUNT TRAUMA

Duygu YILMAZ	MD Specialist in Emergency Medicine, Hitit University, Erol Olçok Education and Research Hospital, Department of Emergency Medicine, Çorum, Turkey
İrfan BAYHAN	MD Specialist in Emergency Medicine, Hitit University, Erol Olçok Education and Research Hospital, Department of Emergency Medicine, Çorum, Turkey
Mehmet Oğuzhan AY	MD Assistant Professor in Emergency Medicine, Hitit University, Erol Olçok Education and Research Hospital, Department of Emergency Medicine, Çorum, Turkey
Ali Kemal ERENLER*	MD Associate Professor in Emergency Medicine, Hitit University, Erol Olçok Education and Research Hospital, Department of Emergency Medicine, Çorum, Turkey *Corresponding Author

ABSTRACT Pneumomediastinum (PM) –presence of air or other gas in the mediastinum- is a potentially life-threatening condition which may occur as spontaneous, traumatic or iatrogenic. In usual, it has several concomittant lethal clinical conditions such as pneumothorax, hemothorax, rib fracture or pneumopericardium. In this case, we present you a young male with PM who developed an isolated symptom of subcutaneous emphysema after blunt chest trauma. The diagnosis of PM was based on computed tomography and any other concomittant injuries could not be determined.

KEYWORDS : Isolated pneumomediastinum, trauma, Emergency department Conflict of interests and financial support: None to declare

Introduction

Pneumomediastinum (PM) is defined as the presence of air in the mediastinum. It is known to result from air escaping from the respiratory airway and moving into mediastinal cavity (1) Pneumomediastinum after blunt trauma usually ocur in adults with concomittant lethal injuries (such as rib fractures, hemo-pneumothorax and thoracic vascular injuries, eg) after high-energy traumas such as motor vehicle accidents (2). In this case report, we present you a patient with isolated PM without any concomitant injuries and aim to underline the importance of this clinical situation which is potentially lethal.

Case Report

A 23-year-old farmer was admitted toHitit University ED due to an accident in a rural area. According to anamnesis, he was travelling on a straw bale in the trailer of a tractor and the driver has lost control of the vehicle. The patient has fallen from a height of approximately 5 meters. On admission to ED, his vitals were normal. In addition, his mental status was normal and on primary survey he did not have any symptoms or findings related to trauma. On detailed examination, a swelling on the neck and crepitus due to subcutaneous emphysema spreading through chest was determined. On auscultation lung sounds were normal.

With a prediagnosis of chest trauma and possible hemo-pneumothorax due to rib fracture, an X-ray was performed and any abnormalities could not be determined. For a detailed evaluation, patient has undergone CT imaging. On CT, according to radiological evaluation, widespread emphysema on lateral and anterior parts of the neck in the prevertebral region and widespread emphysema in the upper mediastinal region were determined (fig 1). Other imaging studies for trauma were normal. Blood gas analysis,complete blood count and biochemistry analyses did not reveal any abnormalities. Patient was consulted with Thorax surgeon and hospitalized for follow-up. Endoscopy and bronchoscopy were performed, however, any abnormality could not be determined. After 7 days, emphysema resolved and the patient was discharged with total recovery.

Discussion

Pneumomediastinum may ocur both spontaneously or due to a secondary cause. Secondary causes of PM include trauma, surgery, ivasive tests and upper aerodigestive tract manipulations. Patients may present with varying symptoms such as cough, dyspnea, dysphagia, odynophagia, neck/chest pain (3). It is also known that subcutaneous emphysema is an important finding on physical examination and is an indicator of the spread of extra-alveolar air to the neck, face and anterior chest wall (4). In our case, PM was possibly due to blunt trauma to the chest. However, the patient did not reveal any signs and symptoms of PM except subcutaneous emphysema.

Traumatic pneumomediastinum is a relatively uncommon injury after trauma to the neck, thorax, or abdomen but may be a significant cause of morbidity and mortality in affected individuals because of the associated damage to the esophageal, and tracheabronchial, or vascular thoracic structures (2). In 30% of the patients with PM, chest radiography may be normal and in presence of clinical suspicion, thoracic CT scan as the gold standart must be performed (4). In our case, interestingly, the patient did not have any concomittant injuries and CT imaging revealed isolated traumatic PM.

Kuniyoshi (5) et al., presented a case report of a child with pneumomediastinum following a minor trauma. However, in that case laryngoscopy revealed erythema and edema on the right vocal cord and the arytenoid region. In our case, any evidence of aerodigestive injury could not be determined. We suggest to perform repeated bronchoscpy and endoscopy in the follow-up of symptomatic patients. In case there are not any abnormalities in bronchoscopy and oesophagoscopy, the main treatment of PM is based on supportive therapy and follow-up. In the ED, patient must be hemodinamically stabilised, observed and provided supplementer oxygen. Any further interventions are not required if complications do not develop (6,7). Accordingly, any complications did not develop during follow-up and any further interventions were not required. Isolated PM due to trauma in our patient has dissolved spontaneously.

Conclusion

Pneumomediatinum is a clinical challenge for both ED physicians and thoracic surgeons with its potential life-threatening complications such as tension PM and mediatinitis. Physicians must be aware of this condition in patients with signs, symptoms and findings indicating PM. A CT should be obtained and evaluated in details not to overlook the disease. Even though it may have various clinical signs and symptoms, subcutaneous emphysema may be present as only finding on admission.

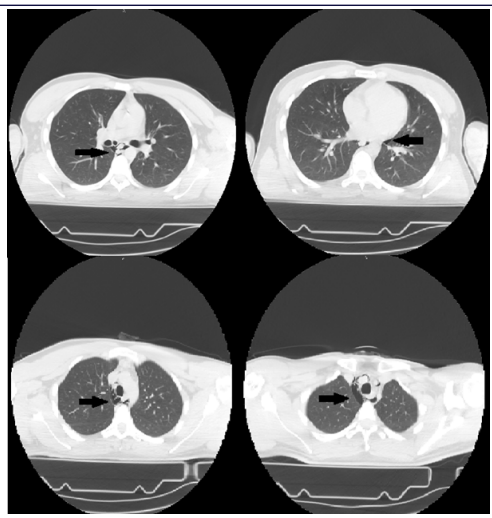

Fig 1. Black arrows point isolated pneumomediastinum without any concomittant injury in computed tomography imaging

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