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Case Report

An Unusual Case of Spontaneous Pneumomediastinum

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Abstract

Spontaneous pneumomediastinum is rare condition with free air in the mediastinum. There are some controversies to consider spontaneous pneumomediastinum in patients with predisposing factors like asthma, interstitial lung disease, illicit drug users and irritant inhalations. It generally occurs due to sudden increase in intrathoracic pressure causing rupture of alveoli and movement of air to the mediastinum. Here we present a case of a 20 years old male patient with few bouts of cough as precipitating factor and development of spontaneous pneumomediastinum and subcutaneous emphysema.

Keywords: *Dyspnea, Pneumomediastinum, Subcutaneous emphysema*

Introduction

Presence of air in the Mediastinum without any obvious cause is known as spontaneous Pneumomediastinum (SPM). It was first described by Louis Hamman in 1939 AD so it is also known as Hamman Syndrome [1]. SPM generally occurs in young, tall and thin individuals with rare incidence of 1 in 7000 to 12000 hospital admission [2, 3]. SPM patients are usually in good health without any underlying serious pulmonary pathology. SPM are also considered in patients with predisposing conditions potential for causing PM like Bronchial asthma, tobacco use, illicit drugs and inhalations of irritants [4-6].

Precipitating factors are generally present in individual presenting as SPM with predisposing and without predisposing factors in form of cough, emesis, exercise, labour, sneezing which causes increase in intrathoracic pressure with closed glottis [4, 7, 8]. Here we present an unusual case of SPM with subcutaneous emphysema in a young male with no predisposing factor but few bouts of cough as precipitating factor and mild chest discomfort as presenting complaint.

Case Presentation

20 years old male patients from Sankhuwasaba presented to our OPD with crepitus in the neck for 2 days. He had developed choking sensation during drinking water in the dinner after which he had to cough for 8 to 10 times. During sleeping he had noticed crepitus in the neck. He denied any cough, chest pain and shortness of breath during presentation in our OPD after 2 days. His only symptom was some uneasiness in retrosternal area which was overlooked as Acid Peptic

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Disease by local physician. On examination patient was comfortable, vitals were normal with BP 110/60 mmHg, pulse 88/min regular, normo-volumic, bilaterally symmetrical and no radio femoral delay. Respiratory rate was 16/min thoracoabdominal. He had crepitating on his right side of the neck; no crepitations were present below the clavicle and shoulder region. Systemic examinations of Respiratory, Cardiovascular, Abdominal and Central nervous system were all within normal limits.

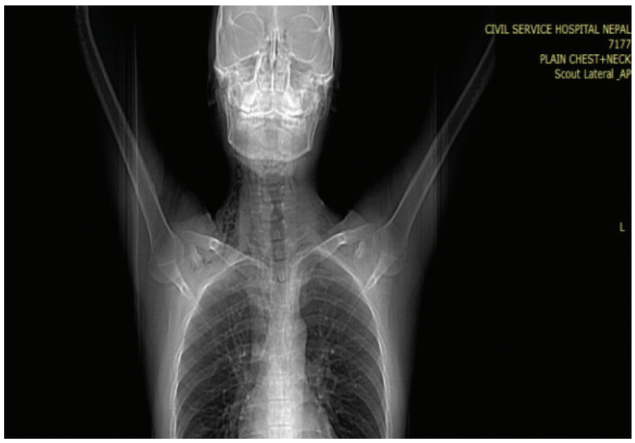

Figure 1: CT scan showing subcutaneous emphysema

With high suspicion of subcutaneous emphysema with pneumomediastinum X-ray chest which was done 2 days ago was discussed with radiologist. X-ray chest showed subcutaneous emphysema in the neck but was inconclusive for pneumomedias-tinum so HRCT chest was done which confirmed pneumomedias-tinum with subcutaneous emphy-sema. (Fig 1 – 3). As patient had no shortness of breath or any distressing symptoms and symp-toms were 48 hours old and resolving. Patient was discharged on analgesic and asked to be on close contact with us. After 1week, X-ray was repeated and subcutaneous emphysema improved.

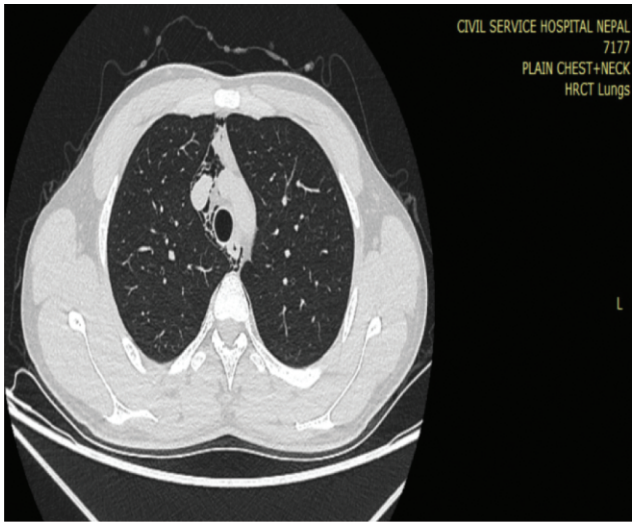

Figure 2: CT scan chest lung window showing Pneumomediastinum

Discussion

Spontaneous Pneumomediastinum is considered to be due to rupture of terminal alveolus and dissection of air along the pulmonary vasculature towards the hilum and into the mediastinum due to sudden increased in intrathoracic pressure [7]. The presence of SPM generally presents with dyspnea, cough, neck and chest pain, dysphonia and dysphagia [4, 9, 10]. There may be associated subcutaneous emphysema along with SPM. Chan et al have reported subcutaneous emphysema along with SPM in 71% of cases [9]. One study of 41 patients with SPM, subcutaneous emphysema in neck was present in 66% and chest subcutaneous emphysema in 29% [4]. Our case had subcutane-ous emphysema in the neck only, the presence of with lead to the high suspicious of SPM. Retrosternal chest pain was the most common symptoms associated with SPM in many case series followed by dyspnea, cough and cervical pain [4, 5, 7, 9, 10, 11]. Our patient did not have dyspnea, cough or cervical pain. Mild retrosternal discomfort was present with was overlooked as Acid peptic Disease.

Cough is presumed to be the precipitating factor in our study. Precipitating factors are generally present in almost every case of SPM which causes sudden increases in the intrathoracic pressure and rupture of alveolus leading to dissection of air to medias-tinum. Most common precipitating factor in study done by Macia at el. was physical exercise followed by nausea and vomiting and cough [4]. Another study of 16 patients reported to have upper respira-tory tract infection followed by non specific cough and physical exercise as most common precipita-ting factors [10]. Our patient had no predisposing factor for SPM. Some literatures argue that pneu-momediastinum with predisposing conditions should not be considered as SPM as pneumome-diastinum could be attributed to the underlying disease of the lung [4]. Till date general consensus is to include patients with predisposing factors in SPM.

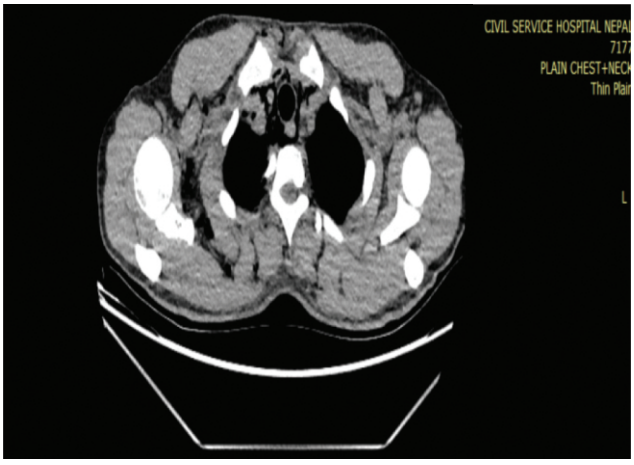

Figure 3: CT scan chest lung mediastinal window showing Pneumomediastinum

SPM primarily affects young adult males. More than 75% of SPM reported as males with mean age of 20 years [1, 5, 6, 12]. Possible explanation could be in elderly mediastinal planes and sheaths are fibrosed which makes air movement difficult than young males where mediastinal tissues are loose and flaccid [9]. Suspicious of SPM should be made in any case of atypical chest pain especially if associated with subcutaneous emphysema with clear precipitating factor. In absence of subcutaneous emphysema physical examination may not be conclusive. Thoracic X ray generally reveals the diagnosis most of the time. Macia et. al. have reported that lateral X ray chest is also required for diagnosis as up to 50% of cases are undiagnosed with Posterioanterior Xray chest [4]. J. Freixiner et al. found out that at least one third of cases are not visualized in simple thoracic radiograph [1]. Computed Tomography is considered to be gold standard test imaging test capable of detecting even small amount of mediastinal air [4]. Our patient had thoracic imaging showing subcutaneous emphysema however pneumomediastinum was inconclusive so HRCT chest was done which confirmed the diagnosis.

SPM is a rare but usually a benign disease [13]. SPM generally subsides on its own spontaneously with rest, oxygen therapy and analgesics. J. Freixinet et al. observed 32 patients of SPM and concluded that outpatient management can be employed [1]. However most studies recommend admission of 48-72 hours with oxygen therapy, presence of pneumothorax with SPM needs to be treated with tube thoracostomy. In our context patient presented to us after 48 hours of symptoms and was not associated with pneumothorax. So, patient was observed in outpatient basis. Complications are very rare in SPM but can occur in form of hyper pneumomediastinum where compression of heart causes decreased venous blood return leading to hyperdynamic and respiratory compromise [13]. Recurrence rate of SPM is also very rare. I. Macia et al, Abolnik et al and Gerazounis et al in their case series have reported one recurrence each which improved satisfactorily [4, 12, 14]. So far no mortality directly related to SPM is reported till date [4, 9].

Conclusion

In spite of rare disease entity, spontaneous Pneumomediastium should always be considered as a differential diagnosis in any chest discomfort patients specially in presence of precipitating factors and subcutaneous emphysema.

Conflicts of interests: None

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