Pneumomediastinum Following Acute Cough

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ABSTRACT

Spontaneous pneumomediasinum a relatively uncommon entitity. It is usually seen in young and pregnant women. Management includes close observation and supportive management. We report a case of 22 years old male presenting with shortness of breath following acute cough. His clinical finding was suggestive of subcutaneous emphysema. CT scan revealed pneumonediastineum. The patient was admitted and observed for 3 days and was discharged on third day after resolution of his symptoms.

Key words: Acute cough, Pneumomediastenium, Subcutaneous emphysema

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INTRODUCTION

Spontaneous pneumomediastinum (SPM) is an uncommon condition presenting in approximately one in 1,000 to one in 40,000 ED referrals.[1] Young patients with SPM typically present with a history of asthma or recent inhalation of cocaine, methamphetamine, ecstasy, marijuana or hydrocarbons.[2] Other causes include barotrauma in asthmatics and COPD patients, rapid ascent in scuba divers, valsalva maneuvers, vomiting, infections, blast injuries and iatrogenic injuries from endoscopy or surgery.[3]

CASE REPORT

A 22 year old male came to emergency department complaining of chest pain following cough for 3 days. The cough was sudden onset, dry in nature and not associated with fever or shortness of breath. However since last one day he complains of shortness of breath as well. Chest pain was only during cough and was not associated with any aggravating or relieving factors. He is a nonsmoker and does not take alcohol. He had no significant past medical of surgical illness. He had no history of allergy or medicine intake recently. He had no significant family history.

On examination his blood pressure was 120/70 mmHg, pulse 90 bpm, SpO_2 92% in room air and respiratory rate was 24 per minute. He was afebrile during examination. Examination of chest showed crepitation over chest wall extending towards neck. There was equal breath sound over bilateral lung field. Heart sound was muffled. His other systemic examinations were normal.

His hemoglobin was 17.4 mg/dl, total count was 16600 cells/cu mm, and platelet was 175000. Chest X ray showed sub cutaneous emphysema.

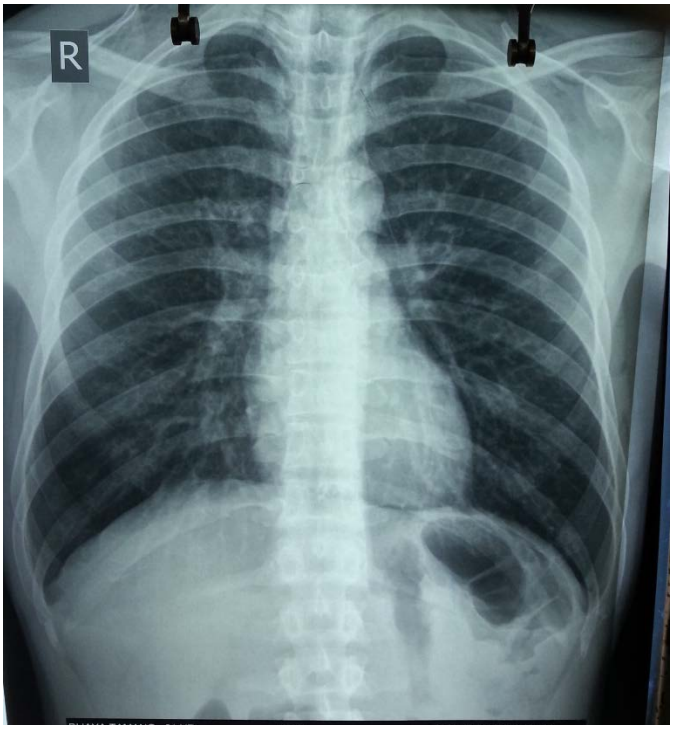

Figure 1: Chest x ray of the patient.

His CT chest was also done which showed pneumonediastinum.

Figure 2: CT scan showing pneumomediastemiun.

DISCUSSION

Pneumomediastinum is an entity in which free air is found within the mediastinum. It occurs principally in healthy young men and parturient women and is found most frequently without apparent precipitatory cause. Functionally, however, alveolar hyperpressure, pulmonary capillary hypotension, or aveolar wall defects on a localized basis may occur as a result of, or may be associated with an acute, transient, respiratory obstruction, a type found most commonly in parturition, simple cough, emesis, or asthma.The most common symptoms are pain and dyspnea. Fever and leukocytosis without apparent infection are also frequently encountered. With obvious extrathoracic sources of mediastinal air excluded, the criteria for the diagnosis of pneumomediastinum should include the combination of roentgenographic free mediastinal air and subcutaneous emphysema.[4]

Clinical features include chest pain often radiating to neck and arms. Dyspnea, change in voice, cough, sore throat and tachycardia are also seen. Palpable crepitations over face, neck and chest is the hallmark of the pneumomediastinum. A fine auscultatory crepitation may be heard synchronous with heart beat over left sternal border which is known as Hamman's sign.[5] Chest X ray and CT are diagnostic. Lateral chest X ray and CT views are particularly helpful because they improve the visibility of air in the anterior mediastimum.[6] Differential diagnosis include tension pneumothorax, cardiac tamponade, angina pectoris, pericarditis, dissecting arotic aneurysm, mediastinitis, pulmonary embolism and esophageal tear.[7]

Potential life-threatening etiologies include esophageal rupture and tension pneumothorax, but these are historically evident at presentation.[8] Treatment is generally limited to observation, with the SPM typically reabsorbing over a period of one to two weeks without intervention and only rare recurrence.[9]

REFERENCES

1. Newcomb AE. Spontaneous Pneumonediastenium: a benign curiosity or significant problem? Chest. 2005;128:3298–3302.
2. Harris R, Joseph A. Spontaneous pneumomediastinum: ecstasy; a hard pill to swallow. Aust N Z J Med.2000;30:401–403.
3. Bartelmaos T, Blanc R, Claviere GD, Benhamou D. Delayed pneumomediastinum and pneumothorax complicating laparoscopic extraperitoneal inguinal hernia repair. J Clin Anesth. 2005;17:209–212.
4. Willian P, Munsell MC. Pneumonediastinum: A report of 28 cases and review of the literature. JAMA. 1967;202(8):689-693.
5. Hamman L: Mediastinal emphysema. JAMA 1945; 128: 1-6
6. Karson EM, Saltzman D, Davis MR. Pneumomediastinum in pregnancy: two case reports and review of the literature, pathophysiology and management. Obstet Gynecol 1984;64(3):39-43
7. Hemmadi S, Reid S, Shylasree TS, Lindsay P, Clyburn P. Subcutaneous emphysema with pneumomediastinum in labour. Hosp. Med 2004;65:760
8. Henderson JAM, Péloquin AJM. Boerhaave revisited: spontaneous esophageal perforation as a diagnostic masquerader. Am J Med. 1989; 86:559–567.
9. Lee CC, Chen TJ, Wu YH, Tsai KC, Yuan A. Spontaneous retropharyngeal emphysema and pneumomediastinum presented with signs of acute upper airway obstruction. Am J Emerg Med. 2005;23: 402-404.