



Pneumomediastinum Mistaken as Angioedema: Case Report

Anjiyoödem Sanılan Pnömomediastinum: Olgu Sunumu

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ABSTRACT

Pneumomediastinum and massive subcutaneous emphysema are clinical conditions that can occur during head and neck surgeries, bronchoscopy and tracheostomy, after thoracic trauma, rarely during dental procedures and sometimes spontaneously. Patients often present with symptoms such as swelling of the face, neck and sometimes the whole body, difficulty swallowing, shortness of breath, chest pain and skin crepitus. These findings usually develop suddenly and sometimes may occur within hours or days. A 48-year-old man is applied to the hospital with complaint chest pain due to a fall in the garden. If no pathology is thought to be present as a result of the X-ray, the patient is prescribed ibuprofen for pain relief and discharged. Patient who presents with what appears to be angioedema after taking ibuprofen is found to have pneumomediastinum. In the cases mentioned in the report and initially thought to be angioedema, seeing that the lips are not swollen and feeling subcutaneous crepitation, i.e. even just inspecting and palpating the patient, will distract the clinician from angioedema in a few seconds and direct him/her to the correct diagnosis and perform examinations in the direction of pneumomediastinum.

Keywords: Angioedema, blunt trauma, emergency medicine, pneumomediastinum, thoracic surgery.

ÖZET

Pnömomediastinum ve masif subkutan amfizem baş ve boyun ameliyatları, bronkoskopi ve trakeostomi gibi girişimler sırasında, toraks travması sonrasında, nadiren dental işlemler sırasında ve bazen de spontan olarak ortaya çıkabilen klinik durumlardır. Hastalar sıklıkla yüz, boyun ve bazen tüm vücutta şişlik, yutma güçlüğü, nefes darlığı, göğüs ağrısı ve ciltte krepitus gibi semptomlarla başvururlar. Bu bulgular genellikle aniden gelişir ve bazen saatler veya günler içinde ortaya çıkabilir. 48 yaşında erkek hasta bahçede düşmeye bağlı göğüs kafesinde ağrı şikâyeti ile hastaneye başvurur. Çekilen röntgen sonucunda herhangi bir patoloji olmadığı düşünülen hastaya ağrı kesici olarak ibuprofen reçete edilir ve taburcu edilir. İbuprofen aldıktan sonra anjiyoödem kliniği ile başvuran hastada pnömomediastinum olduğu tespit edilir. Vakada bahsedilen ve ilk etapta anjiyoödem düşünülen durumlarda dudakların şişmediğinin görülmesi ve cilt altı krepitasyonunun hissedilmesi, yani hastanın sadece inspeksiyon ve palpasyonla muayene edilmesi bile birkaç saniye içinde klinisyeni anjiyoödemden uzaklaştırıp doğru tanıya yönelmesini ve pnömomediastinum yönünde tetkikler yapmasını sağlar.

Anahtar Sözcükler: Acil tıp, anjiyoödem, göğüs cerrahisi, künt travma, pnömomediastinum.

Introduction

Pneumomediastinum and massive subcutaneous emphysema are clinical conditions that can occur during head and neck surgeries, bronchoscopy and tracheostomy, after thoracic trauma, rarely during dental procedures and sometimes spontaneously (1,2). Patients often present with symptoms such as swelling of the face, neck and sometimes the whole body, difficulty swallowing, shortness of breath, chest pain and skin crepitus (3). In patients presenting with such complaints, a differential diagnosis of other clinical conditions, many of which are life-threatening, such as angioedema, allergic reactions, cellulitis, and myocardial infarction, should be made. Feeling crepitus in the swollen parts of the body and preserving the lips despite swelling of all areas of the face are pathognomic in terms of subcutaneous emphysema (4). If there is a history of new drug use in the application of such cases, the first diagnosis that comes to the clinicians' mind is usually angioedema and glucocorticoid, antihistamine and oxygen therapy are the first treatment options. Since angioedema is life-threatening, rapidly progressive condition that affects the airway, and is diagnosed by clinical evaluation. Clinicians must protect the airway and then initiate antihistamine, glucocorticoid, and epinephrine treatments. There is no routine imaging technique to diagnose classic angioedema cases, except for patients who complain of abdominal pain due to hereditary angioedema (5). For this reason, inexperienced clinicians may have difficulty in diagnosing pneumomediastinum before imaging techniques. In this case report, a case of traumatic pneumomediastinum, which was thought to be angioedema based on clinical evaluation and was referred to a higher center with this preliminary diagnosis, will be presented.

Case Presentation

A 48-year-old man is applied to the hospital with chest pain due to a fall in the garden. He had a history of hypertension. In his history, it was learned that while he was doing gardening, he tripped and fell on a stone to the right. A posteroanterior chest radiography was taken for the patient whose vital signs were within normal limits (Figure 1a).

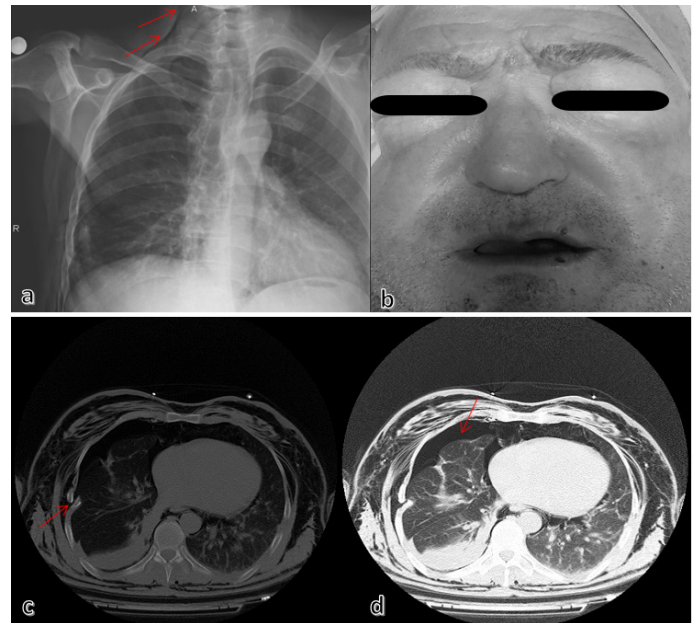


Figure 1: A. Chest radiograph at initial presentation B. Image of edema on the face of a patient who cannot open his eyes spontaneously C. Traumatic rib fracture (red arrow) D. Traumatic pneumothorax (red arrow)

The patient, whom no pathology was considered as a result of the X-ray, was prescribed ibuprofen as an analgesic and discharged from the emergency department. The next day, the patient applied to the same hospital with complaints of sudden swelling in the face, eyes and neck, and shortness of breath. The patient, who states that his complaints started after taking an ibuprofen tablet, was considered to have angioedema, and glucocorticoid and antihistamine treatment was started, and he was referred to our hospital's emergency department by ambulance with the preliminary diagnosis of angioedema. When the patient was admitted to the emergency department of our hospital, his general condition was fair-good, he was conscious, oriented and cooperative. There was swelling all over his face and neck, so he could not open his eyes spontaneously (Figure 1b). His vital signs were, blood pressure: 140/90 mmHg, pulse: 94/min, temperature: 36,5 °C, respiratory rate: 16/min, SpO₂: 94% on room air. According to the anamnesis taken from the patient's relative, it was learned that the patient fell the day before, he was given painkillers because he had pain in the chest area, and today, after using the medicine, he suddenly developed swelling in the body and shortness of breath. On physical examination, there was crepitus on the edematous area on the face and neck, there was no

edema on the lips, there was no uvula edema, lung sounds were deep, no rhonchi were heard, other system examinations were normal. In the tomography scans performed with the preliminary diagnosis of traumatic pneumomediastinum, the patient showed rib fracture due to trauma (Figure 1c), pneumothorax (figure 1d), and pneumomediastinum and widespread subcutaneous emphysema (Figure II). The patient was consulted with thoracic surgery for chest tube application, observation and continuation of the treatment, and was admitted to the hospital.

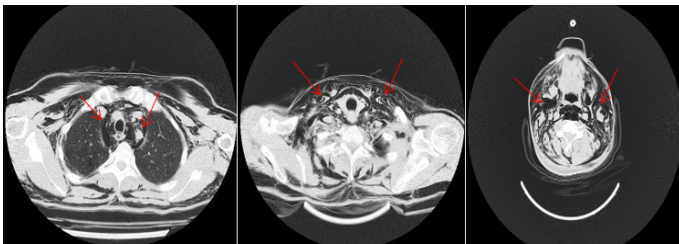


Figure II Pneumomediastinum and widespread subcutaneous emphysema

Discussion

Pneumomediastinum, by definition, means the presence of air in the mediastinum. Its mechanism can be explained by the passage of air from the airways, lungs or digestive organs to this area. Etiology can be divided into spontaneous pneumomediastinum, which is more likely to be seen in smokers, and secondary pneumomediastinum, which occurs after triggering by the iatrogenic causes, trauma or chronic diseases (6). The most common symptom at presentation is chest pain, which is located in the retrosternal region, followed by shortness of breath and subcutaneous emphysema. Even if patients appear well, anxiety, tachypnea, and tachycardia may be detected during clinical evaluation (7). Although chest radiography is usually sufficient for diagnosis; It is useful to perform computerized tomography to determine the degree of pneumomediastinum, to confirm whether pneumothorax is accompanied in the presence of widespread subcutaneous emphysema, and in suspicious cases when the diagnosis cannot be clearly made with chest radiography (6). After diagnosis, patients should be kept under observation in the hospital for at least 24 hours with bed rest, analgesia, oxygen support, if necessary, antibiotics to prevent mediastinitis, and chest radiography for

follow up. Additionally, a chest tube should be applied in the presence of pneumothorax (7). Although angioedema and pneumomediastinum show serious similarities clinically, the most practical way to differentiate is to know that the lips are not swollen in pneumomediastinum and to feel subcutaneous crepitation when we touch the patient (8).

Pneumomediastinum is a serious clinical condition in addition to rib fracture and pneumothorax in patients with isolated thoracic trauma or multitrauma involving the thorax. Although it is easy to make a diagnosis in cases where widespread subcutaneous emphysema is observed immediately after trauma, it should not be forgotten that it may develop hours or days after the trauma and that the clinician may be misled by mentioning the patient's medicine use history, as in the case example. In the case example, although the chest X-ray taken on the first day does not show any obvious pathologies such as air density in the mediastinum, pneumothorax, rib fracture, when examined carefully, subcutaneous air density is seen near the neck (Figure 1a), and this is the information that can be used as a clue for doctors who works in centers without tomography. In such cases, seeing that the lips are not swollen and feeling subcutaneous crepitation, that is, examining the patient only with inspection and palpation, allows making the correct diagnosis within a few seconds.

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