

Case Report with Non-Traumatic Hemorrhagic SVO and Spontaneous Pneumothorax

 Omer Faruk KUCUK¹,  Hakan HAKKOYMAZ¹,  Muhammet Mustafa YILMAZ¹,  Bedirhan OZDEMIR¹,  Muhammet ALKAYA¹,
 Caner AKUFUK¹,  Ali Ihsan KILCI¹

¹ Sutcu Imam University Faculty Of Medicine, Department Of Emergency Medicine, Kahramanmaraş, Türkiye

Abstract

The blurring of consciousness is one of the common causes of admission to emergency departments. While evaluating an unconscious patient, all system examinations should be done more carefully and thoroughly since the unconscious patients cannot express themselves adequately. A patient with non-traumatic hemorrhagic cerebrovascular accident & spontaneous pneumothorax is a rare condition. In this case we aim to present, life-threatening severe clinical conditions could occur, if the intervention is delayed.

Introduction

The coexistence of pneumothorax and intraventricular hemorrhage usually occurs after a traumatic event, however it can also develop spontaneously. Our aim, in this case, is to present this rare condition.

Pneumothorax is a life-threatening clinical condition frequently encountered in the emergency department and may require emergency treatment. Pneumothorax is a rare condition that expresses the presence of spontaneous or traumatic air in the intrapleural space (1). The diagnosis of pneumothorax is made clinically and radiologically. Diagnosis is confirmed when the visceral pleural line around the collapsed lung is seen on the posteroanterior chest X-ray (CXR) or the pneumothorax is seen on computed tomography of chest (CT) (1). Minor changes in lung volume may be not symptomatic and cannot be detected during the examination. When pneumothorax reaches large volumes, and the patient has severe shortness of breath, it should be treated immediately. The first step in emergency treatment is bed rest, oxygen therapy, observation, simple aspiration, closed underwater drainage, and tube thoracostomy (1).

Cerebrovascular accident (CVA) is defined as a neurological deficit due to ischemic or hemorrhagic causes (2). CVA is a highly heterogeneous disease in terms of its causes and consequences. Approximately 87% of strokes develop secondary to ischemia that results from arterial and/or venous causes, 10% develop secondary to parenchymal bleeding, and 3% develop secondary to subarachnoid hemorrhage (SAH) (3). Hemorrhagic CVA

may occur spontaneously or traumatically (3). It can also develop secondary to hypertension or due to the rupture of an aneurysm in the brain. It can be considered a severe life-threatening problem. Treatment methods differ depending on the cause. Although patients may recover completely, different degrees of neurological deficit may remain, and even death may result.

In our case, the coexistence of pneumothorax and intraventricular hemorrhage is usually found to be traumatic, but it may rarely develop spontaneously. With this case report, we aimed to present a rare condition that spontaneously developed simultaneously.

Case

A 53-year-old female patient with the complaint of decreased level of consciousness admitted to ED by ambulance. It was reported that the patient had a history of hypertension. According to the information received from the patient's family, while she was sitting at home with her family, she had become unconscious after a sudden onset of headache and did not react to any stimulus. In the initial physical examination of the patient, she was unconscious, Glasgow coma score (GCS): 9-10, SaO₂: 80%, heart rate (HR): 111/min, blood pressure (BP): 210/105 mmHg. The patient had a weak response to painful stimuli, anisocoria, and unresponsiveness to light reflexes. Lung auscultation of the patient, reveals decreased breath sounds in the right hemithorax. In laboratory findings; WBC: 10.130 mm³, Hb: 12.49 g/dL, Htc: 39%, CRP: 2.28 mg/L, INR: 1.14. Other values were within normal ranges. No trace of trauma was observed in the general examination

Corresponding Author: Omer Faruk KUCUK

e-mail: omerfaruk.kucuk@hotmail.com

Received: 12.12.2022 • **Accepted:** 31.03.2023

DOI: 10.55994/ejcc.1206259

©Copyright by Emergency Physicians Association of Turkey -

Available online at <https://dergipark.org.tr/tr/pub/ejcc>

Cite this article as: Kuçuk OF, Hakkoymaz H, Yılmaz MM, Ozdemir B, Alkaya M, Akufuk C, Kilci AI. Case Report with Non-Traumatic Hemorrhagic SVO and Spontaneous Pneumothorax. Eurasian Journal of Critical Care. 2022;4(2): 24-25

of the patient. It was thought that the patient might have a central nervous system pathology due to a decrease in light reflex and anisocoria in the neurological system examination and lung pathologies due to decreased breath sounds on the left. Thereupon, it was decided to obtain CT of the brain and thorax to detect any neurological or respiratory problem. Brain CT of the patient showed, diffuse bleeding areas shifted to the left side of the brain and into the right ventricle. Thorax CT revealed pneumothorax in the right lung (Figure-1). Upon the patient's thorax CT showed that the mediastinum and heart were shifting to the left, thoracic surgery was informed, and tube thoracostomy was applied to the patient. Patient was consulted with the neurosurgeon for extensive bleeding areas that shifted in the brain CT and then patient undergo emergency neurosurgical operation for brain hemorrhage. While operative preparation was completing in the ED, patient's Glasgow coma score decreased. Therefore, patient was intubated to protect patient's airway. Simultaneously with intubation antihypertensive agents, anti-edema therapy for brain, supplemental oxygen, and prophylactic antiepileptic therapy were started. Afterward, the patient was prepared for surgery, and she was sent to the operating room.

Discussion

The physical examination of each patient with impaired consciousness should be done entirely and thoroughly. CVA is a widespread disease that can result in death; therefore, early diagnosis of CVA is vital (4). Hemorrhagic CVA may progress with hypertension and rapid deterioration in consciousness; If not treated early, it can become a life-threatening emergency. We foresee that there will be further progress and acceleration in diagnosis and treatment, and these rates will decrease further, thanks to the developments in imaging methods. In CVA, it is crucial to distinguish primarily from ischemic or hemorrhagic, to determine the size and age of the lesion, the affected vessel or vessels if they are of vascular origin, and to evaluate the degree of influence of the vessel, and collateral status, to evaluate the salvaged parenchyma, and to choose treatment (5).

Pneumothorax is a life-threatening clinical condition frequently encountered in the emergency department and may require emergency treatment. Pneumothorax cases result from spontaneous, traumatic, and iatrogenic causes (6). In spontaneous pneumothorax, patients are often between 17-44 years; it is more common in smokers and is detected four times more in young and thin men than in women. Secondly, iatrogenic pneumothorax can be observed in intensive care units due to barotrauma due to mechanical ventilation or from some invasive procedures (such as central venous catheterization, thoracentesis, and surgery). Traumatic pneumothorax; It is a type of pneumothorax seen as a result of thoracic trauma. The most common clinical symptoms of pneumothorax are; symptoms such as chest

pain and dyspnea (1). When pneumothorax reaches large volumes, and the patient has severe shortness of breath, it should be treated immediately. It is diagnosed clinically and radiologically. The patient's complaints are usually related to the area occupied by the pneumothorax and the patient's physiological reserves. Minor changes in lung volume are not symptomatic and cannot be detected during the examination. The diagnosis is made with the visceral pleural line around the collapsed lung on the posteroanterior chest X-ray (PAAC). The first step in emergency treatment is bed rest, oxygen therapy, observation, simple aspiration, closed underwater drainage, and tube thoracostomy.

A case with non-traumatic hemorrhagic CVA & spontaneous pneumothorax is a sporadic condition; In this case, if the intervention is delayed, life-threatening severe clinical tables could be observed. Because the patient cannot express herself when she lacks the unconscious, all system examinations should be done more carefully and thoroughly.

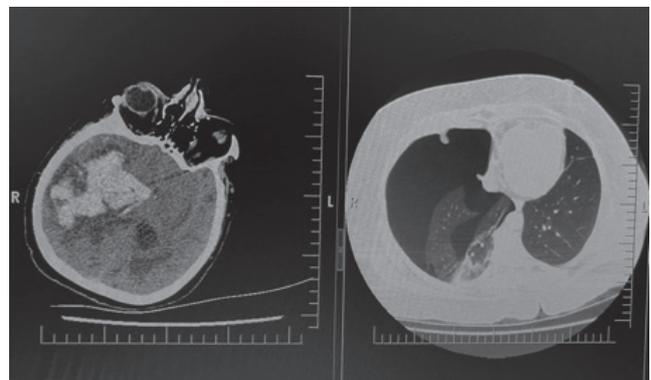


Figure 1: Thorax CT revealed pneumothorax in the right lung.

References

1. Gedik Muhammed Semih, Avcı Akkan, Evren Gökhan, Şahin İbrahim Özgür, Gülen Müge, Avcı Begüm Şeyda, Çelikdemir Alper, Satar Salim. Is Population Movement Affected To Epidemiological Data? *Pneumothorax. Ege Klinikleri Tıp Dergisi.* 57:1(2019):34-40.
2. Hakan Hakkoymaz, Enes Omer Gungor, Muhammed Semih Gedik, Yılmaz Inanc. Evaluation of Acute Ischemic Stroke in the Emergency Department. doi: 10.14744/ejmi.2020.77820
3. Recep S., Hayri O. Serebrovasküler Olay. *Trd Sem 2016*; 4: 198-210 DOI: 10.5152/trs.2016.413
4. Melek İ, Afşar N, Güngör L, Gökçe M, Utku U, Kutluk K, Uzuner N. Hemorajik İnme Tanısı: Türk Beyin Damar Hastalıkları Derneği İnme Tanı ve Tedavi Kılavuzu - 2015. *Türk Beyin Damar Hastalıkları Dergisi* 2015; 21(2): 85-88 doi: 10.5505/tb-dhd.2015.27928.
5. Nevzat Uzuner, Kürşad Kutluk, Sevin Balkan. İnme Tanı Ve Tedavi Kılavuzu. *Türk Beyin Damar Hastalıkları Dergisi.* 2015.
6. Özalp A et al. Pneumothorax in the Intensive Care Unit: Retrospective Analysis of Two Years' Experience. *Bagçılar Medical Bulletin.* DOI: 10.4274/BMB.galenos.2019.12.028.