

Venous air embolism after blunt thoracic trauma without additional pathology

Künt torasik travma sonrası ek patoloji olmaksızın venöz hava embolisi

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ABSTRACT

Air embolism is a rarely encountered but potentially life-threatening medical emergency and may occur as a result of many underlying reasons, such as trauma, surgery, catheterization, iatrogenic, and misapplication. Iatrogenic causes should be kept in mind, particularly if no other pathology is detected to explain the radiological findings in the patient after invasive procedures. In this case report, we present a 28-year-old male patient with a venous air embolism after a blunt trauma without an additional pathology and the diagnosis, treatment, and follow-up period.

Keywords: Air embolism, blunt trauma, iatrogenic.

ÖZ

Hava embolisi fazla rastlamadığımız ancak hayatı tehdit edici olabilen bir tıbbi acildir ve travma, kateterizasyon, cerrahi, iyatrojenik ve yanlış uygulama gibi pek çok nedeni olabilir. Özellikle invaziv işlemler sonrası hastada radyolojik bulguları açıklayacak başka bir patolojinin tespit edilmemesi halinde, iyatrojenik nedenler aklın bir köşesinde bulunmalı. Bu olgu sunumunda künt travma sonrası venöz hava embolisi gelişen ve ek bir patolojisi olmayan 28 yaşında erkek hastayı ve tanı, tedavi ve takip sürecini sunduk.

Anabtar sözcükler: Hava embolisi, künt travma, iyatrojenik.

In clinical practice, physicians are usually focused on the major and common clinical symptoms and potential reasons of venous air embolisms. Emergency patients have a large group of medical complications which requires immediate care. Air embolism is a rarely encountered but potentially severe medical emergency.^[1] Therefore, physicians should keep in mind this situation as an immediate diagnosis is crucial for a decision on symptomatic and clinical treatment. Herein, we present a case of venous air embolism after a blunt trauma without an additional pathology and the diagnosis, treatment, and follow-up period.

CASE REPORT

A 28-year-old male patient was admitted to the emergency department due to a vehicle accident. Cranial and thoracic trauma was observed on inspection. His vital values were found to be within the reference range, and there was no unusual physical examination finding. The patient was assessed with a contrast-enhanced thorax and cranial computed tomography (CT) scan for advanced clinical assessment and examination. On the CT scan, an air image starting from the left subclavian vein and extending to the right ventricle was observed (Figure 1). The patient was then admitted to the third-level intensive

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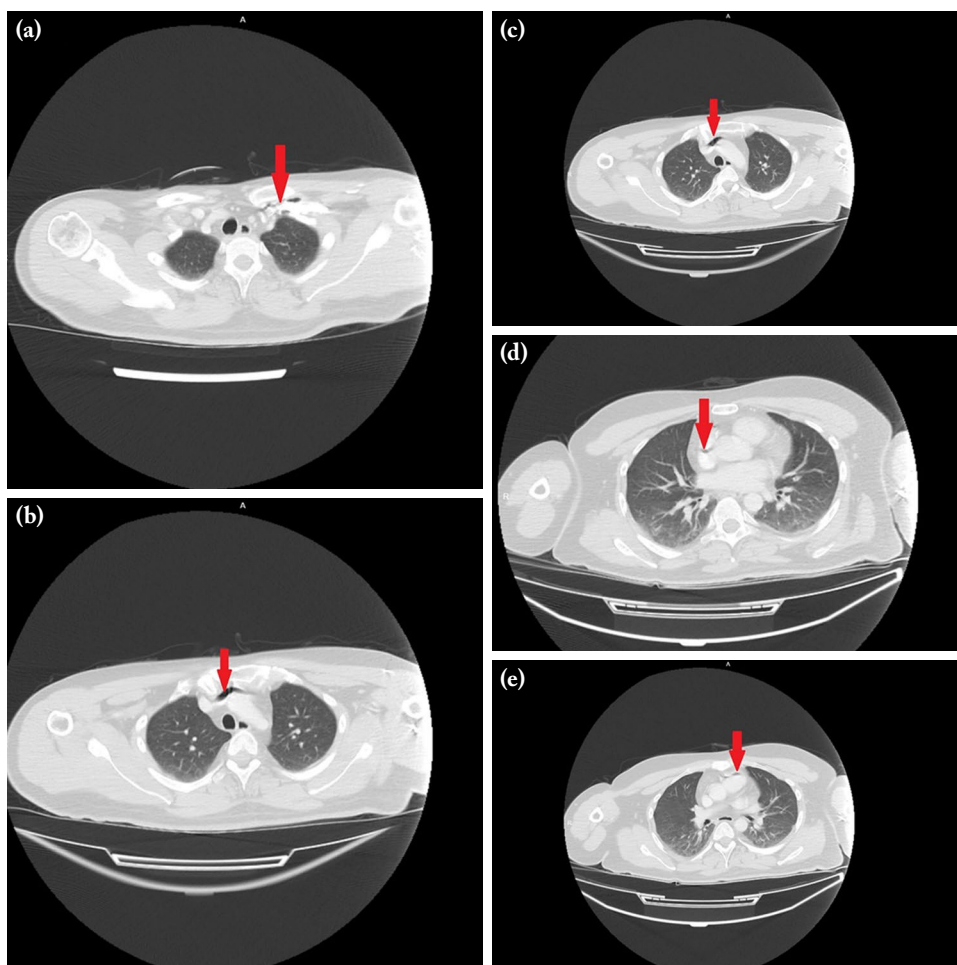


Figure 1. First evaluation computed tomography sections. Air in the (a) left subclavian vein, (b) left brachiocephalic vein, (c) left brachiocephalic vein, (d) vena cava superior, and (e) right ventricle.

care unit for a close follow-up period. Nasal oxygen therapy was given, and he was monitored for 24 h in the left lateral decubitus position. The patient was also consulted by the surgeons of the thoracic surgery department in terms of tracheal damage for possible accompanying pathologies that may cause the current clinical situation. The patient underwent a bronchoscopy examination. No additional pathology was found. A control CT scan was ordered 24 h later. All the air images previously detected in the venous system were observed to disappear in the control CT scan (Figure 2).

The patient was taken to the patient room for the follow-up period. Our patient, who was scheduled for esophagoscopy in terms of possible

esophageal conditions, was also recommended to apply to the related medical department after his discharge since the relevant medical specialists were not available in our clinic. The patient was discharged with recovery. He was reevaluated at his appointment after three months, and no complaints were reported.

DISCUSSION

It should be kept in mind that in emergency medicine cases diagnosed with blunt thoracic trauma, additional life-threatening complications other than an air embolism, such as pneumothorax, and hemothorax, may occur. If no other reason is found to explain the air in the venous system with

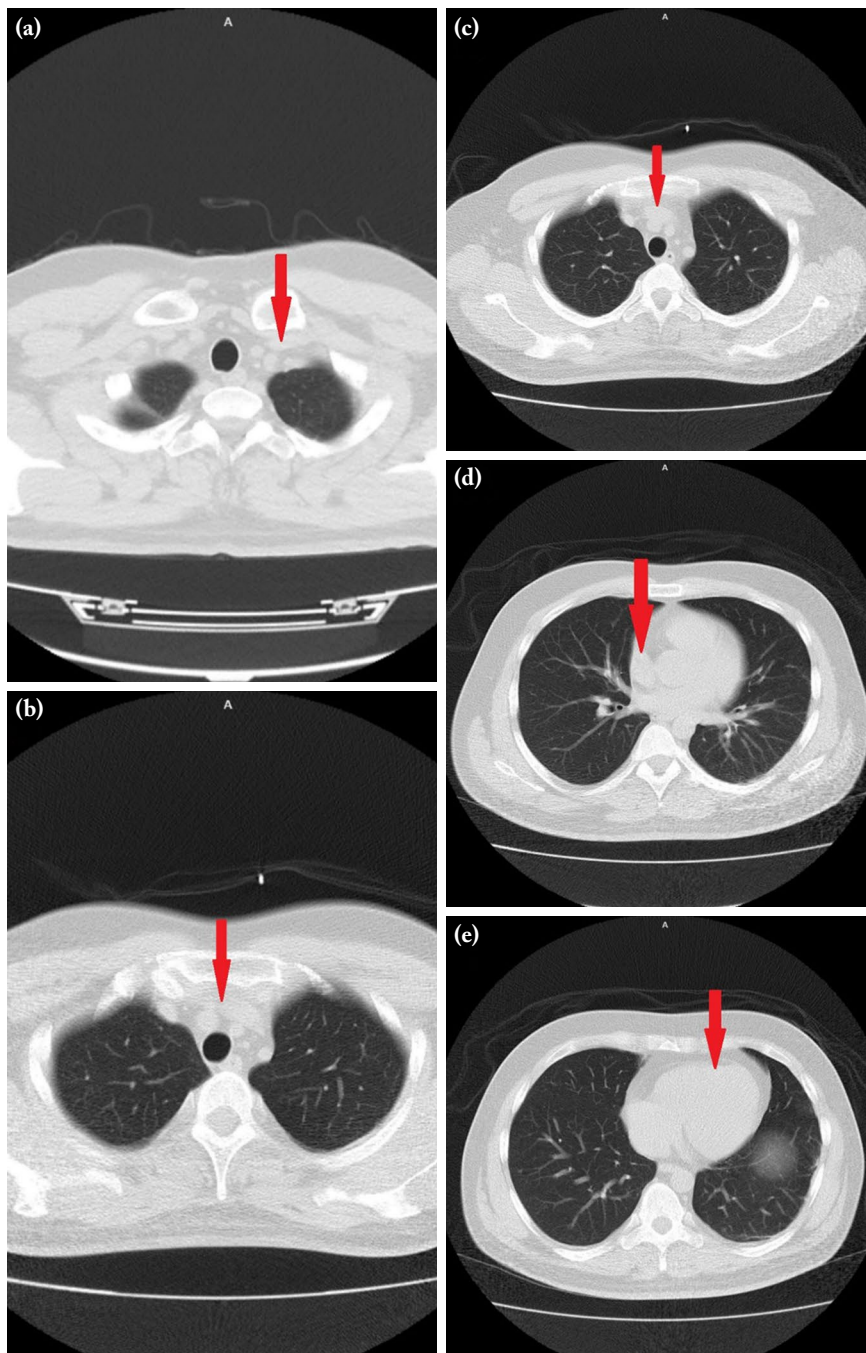


Figure 2. Control computed tomography scan images after 24 h. Non-air image in the (a) left subclavian vein, (b) left brachiocephalic vein, (c) left brachiocephalic vein, (d) vena cava superior, and (e) right ventricle.

contrast-enhanced CT imaging technique, iatrogenic causes should be considered by medical specialists.^[2] As in this case, an air embolism can be prevented with early medical and left lateral decubitus positional

treatment.^[3] Hyperbaric oxygen therapy may be an additional option for the severe clinical situation while also improving tissue oxygenation and better resorption of gas.^[4]

In conclusion, venous air embolism is a life-threatening medical emergency. Close follow-up and appropriate positional treatment are possible. It should be kept in mind in blunt thoracic traumas.

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