ARCHIVES OF THE TURKISH SOCIETY OF CARDIOLOGY

Official journal of the TURKISH SOCIETY OF CARDIOLOGY

Importance of the Careful Inspection of Chest X-Ray

Akciğer Röntgeninin Dikkatli İncelenmesinin Önemi

CASE IMAGE
OLGU GÖRÜNTÜSÜ

A 27-year-old woman with a recent diagnosis of Coronavirus Disease 2019 (COVID-19) presented to the emergency department with shortness of breath, dry cough, and pleuritic chest pain that had persisted for a week. Her past medical and family histories were unremarkable. Upon admission, her arterial blood pressure was 120/70 mmHg, her heart rate was 110 bpm, and her oxygen saturation via pulse oximeter was 92%. An electrocardiogram revealed sinus tachycardia with a heart rate of 113 bpm (Supplementary Figure). Initial blood tests showed an elevated D-dimer level of 3890 ng/mL. A chest radiograph displayed an opacity in the lower lobe of the left lung (Figure 1A, arrow), initially interpreted as indicative of COVID-19 pneumonia. However, due to a focal oligemic area (Westermark sign) in the left upper lung (Figure 1B), pulmonary embolism (PE) was considered in the differential diagnoses, prompting a computed tomographic (CT) pulmonary angiography. The CT angiography revealed a large thrombus in the left main pulmonary artery (PA) (Figure 2A), with additional occlusive thrombi in smaller pulmonary arteries. On the parenchymal window, the opacity initially seen on the chest X-ray was diagnosed as a pulmonary infarction (Hampton's hump) (Figure 2B, arrow) secondary to PE. The patient was subsequently hospitalized and treated for both conditions.

The Westermark sign indicates decreased vascularization at the lung periphery due to mechanical obstruction or reflex vasoconstriction in PE. Although the Westermark sign has low sensitivity (about 10%) for PE, it is highly specific (about 92%) when present. While lung opacities are common in many COVID-19 patients, a careful inspection of all available findings should be conducted before deciding on a diagnosis. In this case, the coexistence of the Westermark sign allowed us to consider PE as a possible differential diagnosis.

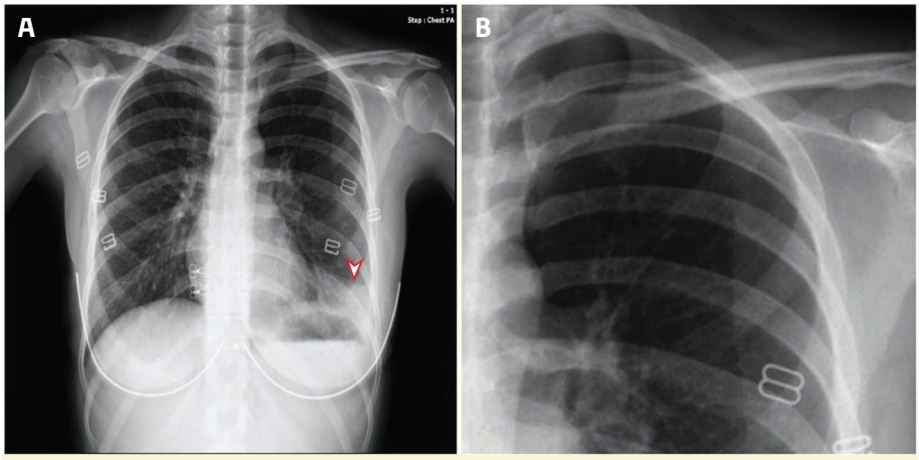


Figure 1. Chest radiography (anteroposterior) showing an opacity (arrow) in the lower lobe of the left lung (A); and a focal oligemic area (Westermark sign) in the left upper lung (B).

Yalçın Velibey[1]
Kemal Emrecan Parsova[1]
Levent Pay[1]
Özge Güzelburç[1]
Tolga Sinan Güvenç[2]

[1]*Department of Cardiology, Siyami Ersek Thoracic and Cardiovascular Surgery Center, Training and Research Hospital, Istanbul, Türkiye*
[2]*Department of Cardiology, VM Medical Park Pendik Hospital, Istanbul, Türkiye*

Corresponding author:
Yalçın Velibey
✉ dr_yalchin_dr@yahoo.com.tr

Received: July 24, 2023
Accepted: August 26, 2023

Cite this article as: Velibey Y, Parsova KE, Pay L, Güzelburç Ö, Güvenç TS. Importance of careful inspection of chest X-Ray. *Turk Kardiyol Dern Ars.* 2024;52(6):470-471.

DOI:10.5543/tkda.2023.23572

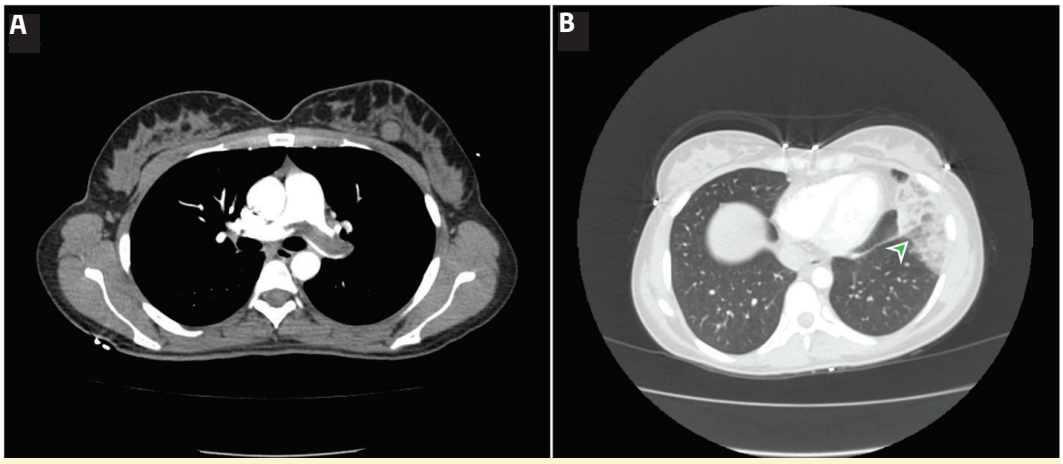


Figure 2. Contrast-enhanced multislice computed tomographic pulmonary angiography demonstrated a large thrombus in the left main pulmonary artery (A); and pulmonary infarction (arrow) in the lower lobe of left lung (B).

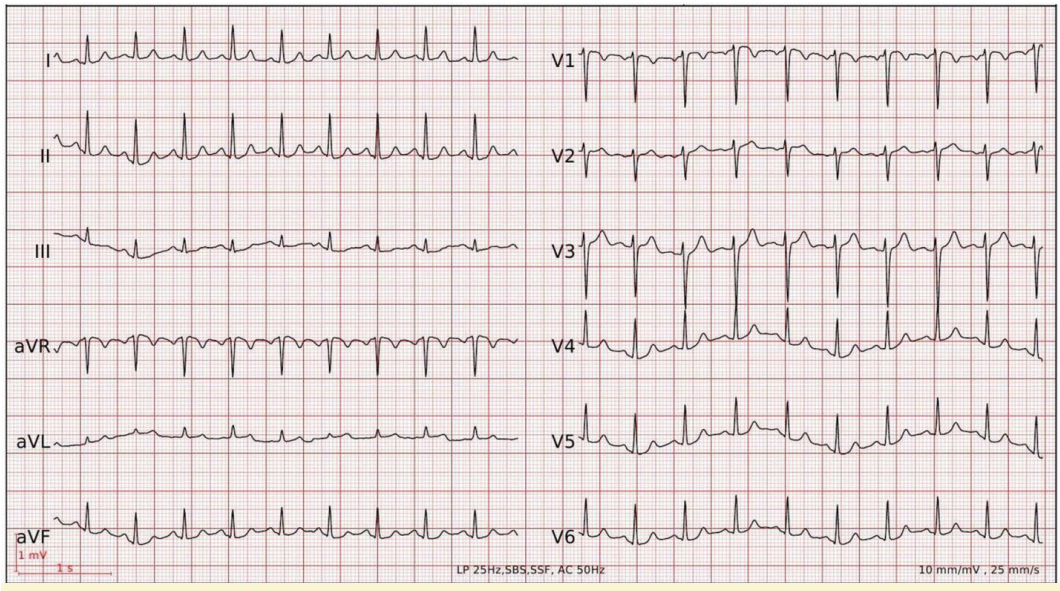
Informed Consent: Written informed consent was obtained from the patient.

Peer-review: Internally peer-reviewed.

Author Contributions: Concept – Y.V.; Data Collection and/or Processing – E.P., L.P.; Literature Review – T.S.G.; Writing – Y.V.; Critical Review – Ö.G.

Conflict of Interest: The authors have no conflicts of interest to declare.

Funding: The authors declared that this study received no financial support.



Supplementary Figure. Electrocardiography showing sinus tachycardia with a heart rate of 113 bpm.