

Clothing artefacts appearing as multiple lung pseudonodules

Satsuki Yoshihara ,¹ Junpei Komagamine ²

¹Internal Medicine, NHO Tokyo Medical Center, Meguro-ku, Japan

²Emergency Medicine, NHO Tokyo Medical Center, Meguro-ku, Japan

Correspondence to

Dr Junpei Komagamine;
junpei0919@yahoo.co.jp

Accepted 21 November 2023

DESCRIPTION

A woman in her 90s presented to the emergency department of our hospital complaining of general weakness that had lasted for several days. Her medical history included acute myocardial infarction, dementia and breast cancer but no tuberculosis. She reported no fever, chest pain, cough, sputum or dyspnoea. On presentation, she was agitated, but her vital signs were normal. On examination, there were no significant abnormal findings. However, laboratory tests showed a mild elevation of c reactive protein and her SARS-CoV-2 reverse transcription-polymerase chain reaction test was positive. Therefore, COVID-19 was diagnosed. Subsequent chest X-ray revealed multiple bilateral nodules ([figure 1](#)). This unexpected finding led us to obtain a sputum sample and perform CT of the chest to rule out other causes such as tuberculosis. Although chest CT showed some abnormal findings, including pulmonary nodules in the lungs, it was found that multiple nodules on the chest X-ray were actually beads from her shirt ([figure 2](#)).

Several artefacts on chest radiography have been reported to resemble pulmonary diseases. For example, skin folds,¹ hair,² clothing,³ bed sheets⁴ and electrocardiographic leads⁵ can resemble



Figure 1 Chest radiography showed multiple bilateral lung nodules. Although calcification and unfolding of the aorta with widened mediastinum and bulky hila were also present, these corresponded to a large, calcified ascending and descending aorta, which was considered as within normal limits for the patient's age.

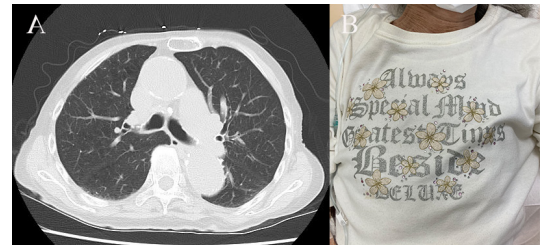


Figure 2 (A) CT of the chest showed a calcified ascending and descending aorta, but no pulmonary nodules on the lungs. However, beads from the patient's shirt appear as multiple nodules. (B) Photograph shows shirt with beads.

pseudopneumothorax or lung pseudonodules on chest radiography. It is sometimes difficult to differentiate artefacts from pulmonary disease without chest CT. Although these findings might lead to iatrogenic interventions, most of these interventions can be avoided if chest radiography is appropriately prepared. Nonetheless, it is often difficult to prepare uncooperative patients for chest radiography in the emergency department due to several reasons, including delirium and difficulty in maintaining appropriate positioning. Therefore, if there are discrepancies between radiological findings and clinical diagnoses before imaging, physicians should cautiously interpret the radiological findings and avoid unnecessary testing. Moreover, some of the nodules on the chest X-ray in this case appear to be located below the right diaphragm and outside the right chest wall. These findings might prompt a review of the patient for sources of artefact. Thus, a detailed evaluation of all nodules on the chest X-ray or discussion with respiratory medicine or radiology experts is also important.

Learning points

- ▶ Inappropriate preparation can sometimes cause clothing artefacts on anterior-posterior portable chest radiographs.
- ▶ A detailed evaluation of the location of all nodules on chest radiographs is important to differentiate multiple lung nodules from clothing artefacts, particularly in the emergency setting.
- ▶ Although it is difficult to differentiate pulmonary diseases from clothing artefacts on chest radiography, CT is useful for making a correct diagnosis.



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To cite: Yoshihara S, Komagamine J. *BMJ Case Rep* 2023;**16**:e257820. doi:10.1136/bcr-2023-257820

Contributors The following authors were responsible for drafting of the text, sourcing and editing of clinical images, investigation results, drawing original diagrams and algorithms and critical revision for important intellectual content: SY and JK. The following authors gave final approval of the manuscript: SY and JK.

Funding The authors have not declared a specific grant for this research from any funding agency in the public, commercial or not-for-profit sectors.

Competing interests None declared.

Patient consent for publication Consent obtained from parent(s)/guardian(s).

Provenance and peer review Not commissioned; externally peer reviewed.

Case reports provide a valuable learning resource for the scientific community and can indicate areas of interest for future research. They should not be used in isolation to guide treatment choices or public health policy.

ORCID iDs

Satsuki Yoshihara <http://orcid.org/0009-0000-1609-0002>
Junpei Komagamine <http://orcid.org/0000-0002-5899-4760>

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