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ESSENTIEL IMAGE / *Thoracic imaging*

Spontaneously hyperattenuating thrombi revealing acute central pulmonary embolism on unenhanced CT

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A 49-year-old man with a history of congenital cardiopathy underwent unenhanced chest computed tomography (CT) for dyspnea and severe oxygen desaturation (blood O_2 level = 70%) in a setting of acute renal failure (serum creatinine level = 1.85 mg/dL). CT revealed spontaneously hyperattenuating areas (70 HU) within proximal pulmonary arteries (Fig. 1a and b). There were neither pleural effusions nor lung parenchyma abnormalities. Acute central pulmonary embolism was suggested and the patient was admitted to the intensive care unit with respiratory support and low molecular weight heparin anticoagulation. Five days later, improvement of renal function allowed completion of contrast-enhanced chest CT, which confirmed the presence of thrombi (Fig. 1c) in the same locations than those of hyperattenuating areas seen on unenhanced CT. Thrombi were slightly smaller, which can be explained by physiological thrombolysis. This observation reminds us that acute central pulmonary embolism may sometimes be detected —mainly depending of hematocrit level and the age and composition of the clot [1,2]— on unenhanced chest CT with narrow windowing, which allows initiation of the appropriate therapy.

Human and animal rights

The authors declare that the work described has been carried out in accordance with the declaration of Helsinki of the World Medical Association revised in 2013 for experiments involving humans.

Informed consent and patient details

The authors declare that this report does not contain any personal information that could lead to the identification of the patient.

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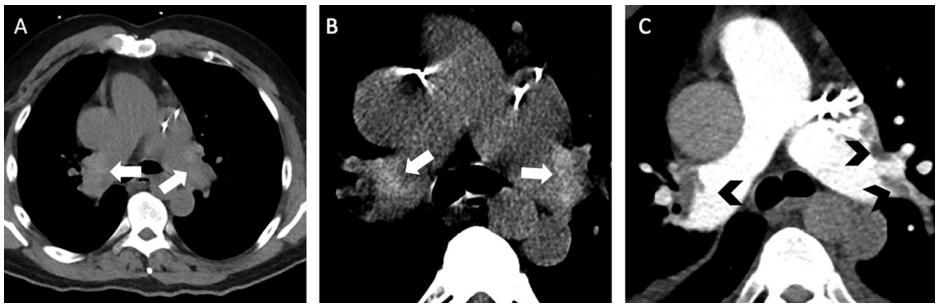

Figure 1. 49-year-old man with central pulmonary embolism. Unenhanced chest CT images (120 kV 136 mAs) in the transverse plane with A, standard (Level, 40; Window width, 350) and B, narrowed (Level, 60; Window width, 120) windows demonstrate spontaneously hyperattenuating foci (arrows) within proximal pulmonary arteries. C. At day 5, follow-up contrast-enhanced chest CT image confirms bilateral thrombi (arrowheads) within proximal portion of pulmonary arteries.

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Authors contribution

All authors attest that they meet the current International Committee of Medical Journal Editors (ICMJE) criteria for authorship.

CRediT authorship contribution statement

CRediT roles.

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Conceptualization	x	
Data curation	x	
Formal analysis	x	x
Funding acquisition	NA	
Investigation	x	
Methodology	x	
Project administration	x	x
Resources	x	x
Software	NA	
Supervision		x
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Visualization	x	x
Roles/Writing—original draft	x	x
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Disclosure of interest

The authors declare that they have no competing interest.

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