PULMONARY PUZZLES

An incidental pulmonary part-solid ground-glass nodule in a patient under anticoagulant therapy

Jo-Yu Chen,¹ Huang-Chun Lien,² Jin-Shing Chen,^{3,4} Yeun-Chung Chang^{1,5}

¹Department of Medical Imaging, National Taiwan University Hospital, Taipei, Taiwan

²Department of Pathology, National Taiwan University Hospital, Taipei, Taiwan

³Department of Surgery, National Taiwan University Hospital and National Taiwan University College of Medicine, Taipei, Taiwan

⁴Department of Traumatology, National Taiwan University Hospital, Taipei, Taiwan

⁵Department of Radiology, College of Medicine, National Taiwan University, Taipei, Taiwan

Correspondence to

Yeun-Chung Chang,
Department of Medical Imaging, National Taiwan University Hospital, No. 7, Chung-Shan South Road, Taipei 100, Taiwan;
ycc5566@ntu.edu.tw

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CASE PRESENTATION

A 53-year-old man with a history of recurrent PE during 2008–2010, under long-term warfarin (Coumadin) therapy, had an incidental finding of a small subpleural part-solid ground-glass nodule (GGN) in the right upper lobe from a screening CT in December 2013 ([figure 1A](#)). The first follow up CT in April 2014 showed no significant interval change. The second follow-up CT in October 2014 showed enlargement of the part-solid GGN with

pleural retraction ([figure 1B](#)), and malignancy was suspected. Video-assisted thoracoscopic wedge resection of the part-solid GGN was performed in November 2014.

QUESTION

What is your differential diagnosis for this part-solid GGN?

Figure 1 (A) CT in December 2013 on axial view showing a 10 mm subpleural part-solid ground-glass nodule (GGN) with solid component less than 5 mm in the right upper lobe. (B) Follow-up CT performed 10 months later on coronal view revealing enlargement of the part-solid GGN, about 18 mm, with solid component about 8 mm and with pleural retraction.

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Figure 2 (A and B) The lesion features haphazardly arranged fibrotic tissue (star) mixed with haemorrhage (arrow). (C) Hemosiderin-laden macrophage (arrowheads) can be seen within and surrounding the lesion. (D) Iron stain confirms the presence of hemosiderin (arrowheads).

ANSWER

The final pathological result revealed an organising haematoma with fibroinflammation.

As shown in figure 2A, B, the lesion features haphazardly arranged fibrotic tissue mixed with haemorrhage. Hemosiderin-laden macrophage can also be seen within and surrounding the lesion (figure 2C, D) to indicate old haemorrhage. There is no definite evidence of coagulative necrosis of alveolar walls, vascular walls and bronchioles to suggest pulmonary infarction. There is also no arteriovenous malformation in the specimen.

The patient's prothrombin time international normalised ratio (PT INR) level was controlled between 1.07 and 2.60 during 2013–2014.

DISCUSSION

In this case, the enlarged part-solid GGN was presumed due to focal spontaneous pulmonary haemorrhage related to anticoagulant therapy. Pulmonary haematoma is an uncommon complication in patients with anticoagulant therapy. There were only two case reports of pulmonary haematoma secondary to anticoagulant therapy in the English literature.^{1 2} Both presented with large mass-like pulmonary haematoma. This case revealed a rare malignancy-mimicking part-solid GGN appearance of such complication.

The common differential diagnosis for solitary pulmonary GGN includes invasive adenocarcinoma, minimally invasive adenocarcinoma, adenocarcinoma in situ, atypical adenomatous hyperplasia and focal fibrosis. Part-solid GGNs have a greater likelihood of being malignant than pure GGNs. Persistent part-solid GGN with solid component larger than 5 mm or enlarged solitary part-solid GGN should be considered malignant until proved otherwise.³ Surgical intervention is indicated in our case.

Contributors J-YC wrote the manuscript, reviewed and reconstructed the images. H-CL provided histopathology slides and descriptions. J-SC and Y-CC cared for the patient, did the intervention procedures, and critically revised the manuscript. All authors approved the final manuscript.

Competing interests None declared.

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