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Epipericardial Fat Necrosis Incidentally Detected at Lung Cancer Screening With Low-Dose Thoracic CT

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A 57-year-old female active smoker patient was incidentally diagnosed with a nodular fatty lesion in the epipericardial fat pad (**Figure 1A and B**) associated with subtle surround stranding of the adjacent mediastinal fat (**Figure 1C and D**) on a low-dose thoracic computed tomography (LDCT) performed for lung cancer screening purposes, consistent with epipericardial fat necrosis (EFN). A previous chest computed tomography (CT) performed one year earlier showed a normal epipericardial fat pad (**Figure 1E**). The patient was contacted by phone by the radiologist interpreting the LDCT and she acknowledged that she had experienced a self-limited episode of left-sided pleuritic chest pain that lasted for 5 days the week before the LDCT and that she did not seek medical attention. An LDCT performed 3 months later revealed a normal epipericardial fat pad (**Figure 1F**).

EFN, also known as pericardial or mediastinal fat necrosis, is a rare self-limited condition of unknown origin that should be considered in the differential diagnosis of chest pain.[1] CT has become the key imaging modality for the diagnosis of EFN; a clear-cut diagnosis can be made when demonstrating an ovoid-shaped encapsulated fatty lesion with surrounding stranding of the epipericardial fat pad.[2] Two patterns on CT have been described: 1) an ovoid fat lesion with fat stranding; and 2) a mixed fat-soft tissue lesion with minimal fat stranding. EFN more commonly affects the left hemithorax and predominantly occurs in the cardiophrenic space. Chest radiograph is usually normal or may show a small pleural effusion.[3] With the increasing implementation of lung cancer screening programs with LDCT, incidental findings are detected more often than before.[4] Thoracic radiologists should pay attention not only to pulmonary findings on LDCT studies but also to extrapulmonary areas.[5] To our knowledge, this is the first report of an EFN incidentally detected on LDCT performed for lung cancer screening.

Conflict of Interest

The authors have no financial conflicts of interest.

Author Contributions

Conceptualization: Gorospe L, Ayala-Carbonero AM; Formal analysis: Ayala-Carbonero AM; Supervision: Gorospe L, Montelongo-Martín A, Mirambeaux-Villalona RM, García De Leániz J; Validation: Gorospe L, Montelongo-Martín A; ;Writing - original draft: Gorospe L Writing - review & editing: Gorospe L, Ayala-Carbonero AM, Mirambeaux-Villalona RM, García De Leániz J.

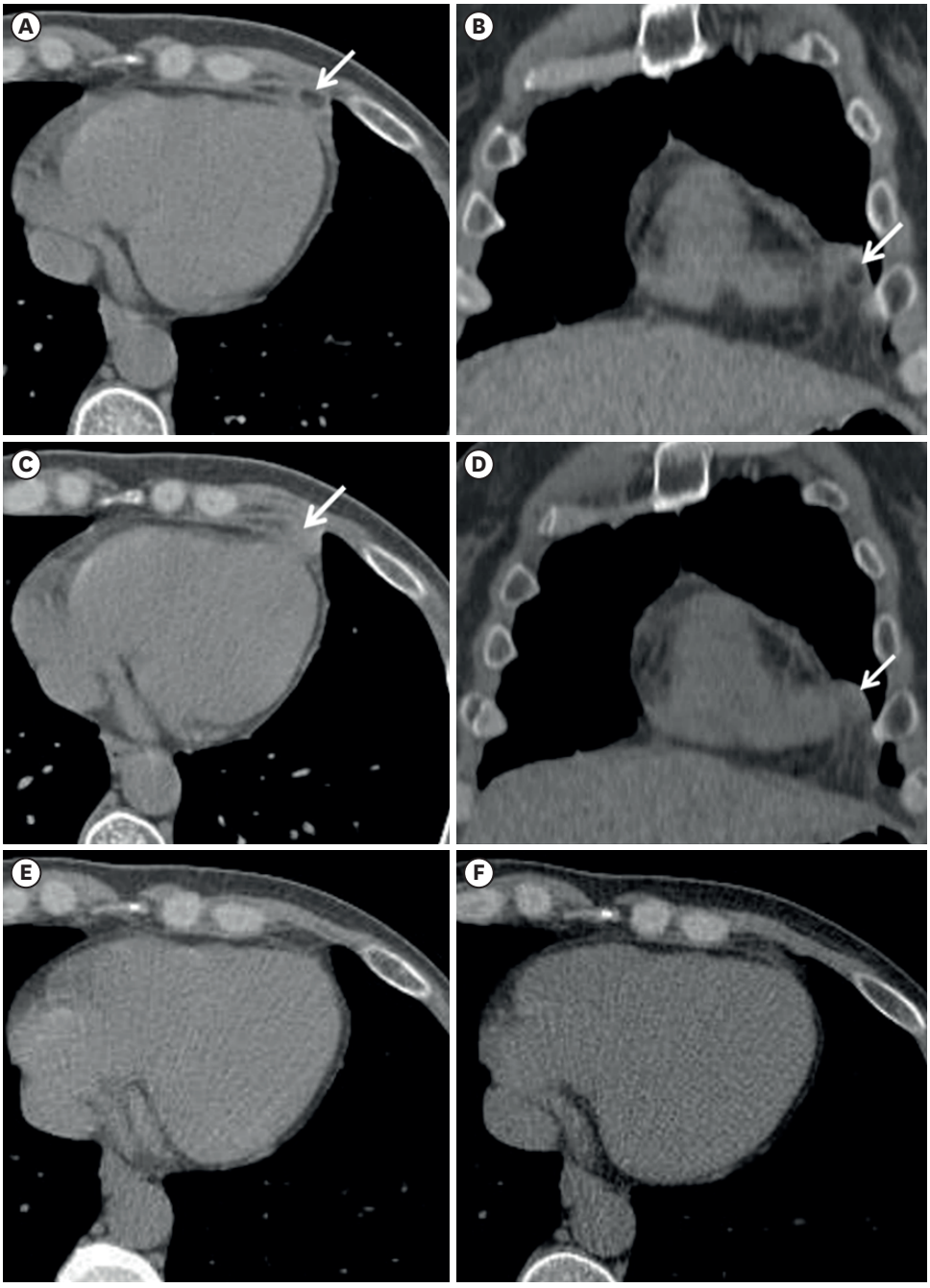

Figure 1. (A) Axial and (B) coronal low-dose radiation CT images in a patient who had experienced a left-sided pleuritic chest pain one week earlier show a nodular fatty lesion in the epipericardial fat (arrow). (C) Axial and (D) coronal CT images demonstrate a focal stranding of the adjacent mediastinal fat (arrow). The combination of a nodular/ovoid fatty lesion with surrounding stranding of the epipericardial fat pad in the cardiophrenic space is the main radiological finding of EFN on CT. (E) A previous chest CT performed one year earlier showed a normal epipericardial fat pad. (F) A thoracic CT performed 3 months after the diagnosis of EFN shows a normal epipericardial fat pad.
CT: computed tomography, EFN: epipericardial fat necrosis.

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