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LETTER TO THE EDITOR

EPIPERICARDIC FAT NECROSIS: CT DIAGNOSIS

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Dear Editor,

In a recent large pictorial review we have revisited the spectrum of intraperitoneal focal fat infarction - IFFI - a term including various acute abdominal conditions in which focal fatty tissue necrosis represents the common pathologic denominator (1). The option of conservative treatment after a very specific imaging diagnosis - today mostly obtained through ultrasound but merely through CT evaluation - now represents the other common denominator of IFFI. IFFI is a benign disease and informed radiologists can avoid surgery for most of their patients.

Most cases of focal fat infarction are confined within the peritoneal cavity but there is a rare exception: epipericardic fat necrosis in the chest.

We recently experienced the case of a 53-year-old patient presenting to the emergency department with a three days history of continuous increasing left precordial pain. This pain was breath dependent and the patient was forced to breathe superficially. There was neither dyspnea nor temperature. The patient was apyretic and its physical examination remained normal. Chest plain films were normal. Laboratory tests were normal except a mild elevation of CRP at 83 mg/l and a discrete elevation of D-dimer at 0,57 mg/l. A chest angio-CT was performed to exclude pulmonary embolism. The pulmonary arteries appeared normal but an inflammatory fatty mass was clearly demonstrated in the left anterior cardiophrenic space (Fig. 1). This inflammatory fat was separated from the normal pericardic fat by a focally thickened pericardium and thus was corresponding to epipericardic fat. Except for the intrathoracic location this CT findings were extremely similar to many previous experienced cases of intraperitoneal focal fatty infarction (IFFI). The final diagnosis was that of benign epipericardic fat necrosis and the patient was successfully treated conservatively with analgesics and anti-inflammatory drugs.

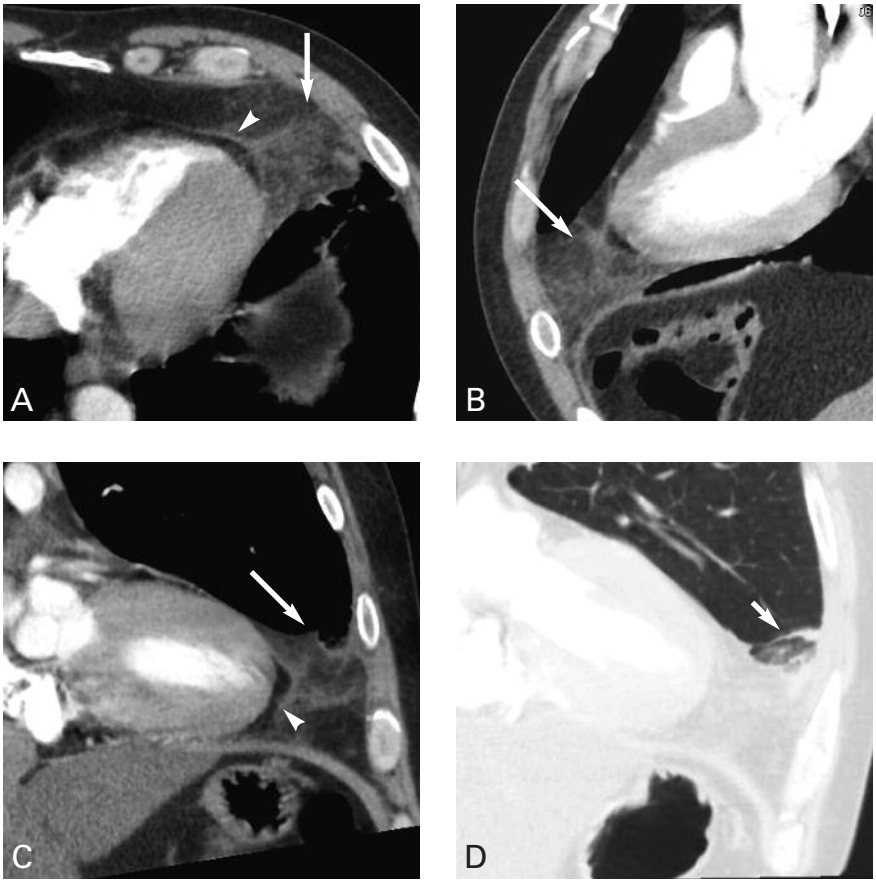

Fig. 1. — Axial (A) , sagital oblique (B) and coronal oblique (C & D) MPR views of the left cardiac area show an inflammatory fatty mass in the left anterior cardiophrenic space (white arrow). This inflammatory fatty mass remains separated from the normal epicardiac fat by a focally thickened pericardium (small white arrowhead). Minimal sub-segmental collapse is found in the neighboring lung (small white arrow).

Epipericardial fat necrosis is a rare but important benign disease (2). Only about 25 cases have been documented in the English-language medical literature since first description in 1957 (3). At the acute phase it is characteristically mistaken for a serious disease particularly myocardial infarction or pulmonary embolism (3, 4). The pathogenesis of epipericardial fat necrosis is unknown (2, 5) and its pathologic features are very similar to those of fat necrosis in epiploic appendagitis and omental infarction (5). The entity has commonly been designated as pericardial fat necrosis but on the basis of surgical results of previously reported cases this term appears as a misno-

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mer because the lesion is located anterior to the pericardium and thus concerns the epipericardial fat rather than the pericardial fat itself (6).

Pericardial fat necrosis classically strikes suddenly, without warning (2). Severe chest pain, typically pleuritic, is the initial manifestation. It is left-sided in most patients but right-sided pain is also reported. Pain is located anteriorly to the diaphragm and may radiate to the neck, shoulder, upper arm, axilla or back. It lasts from several days to one week or so, but can recur with less intensity for up to one year.

Soon after the onset of pain the patient may be dyspneic, with tachypnea, tachycardia but electrocardiogram characteristically remains normal (2).

Chest plain films obtained during the first days may show no abnormality but thereafter an anteriorly located mass invariably appears in or near the affected cardiophrenic angle. The mass is always contiguous with the cardiac silhouette (2).

CT helps determine the nature and exact location of the chest mass. The main CT features are an encapsulated fatty lesion with inflammatory change such as dense strands and/or thickening of the adjacent pericardium (5). Radiologic follow-up shows spontaneous improvement or resolution of findings.

Given the unique clinicoradiologic picture and benignity of pericardial fat necrosis coupled with the capability of CT to show the fatty nature of the chest mass, a clinical diagnosis and symptomatic care should suffice in most instances (2,6). Exactly the same conclusion was recently drawn for intraperitoneal focal fatty infarction.

References

1. Coulier B.: Contribution of US and CT for diagnosis of intra-peritoneal focal fat infarction (IFFI): a pictorial review. JBR-BTR 2010; 93: 171-184.
2. Fred H.L.: Pericardial fat necrosis: a review and update. Tex Heart Inst J. 2010; 37: 82-84
3. Jackson R.C., Clagett O.T. and McDonald J.R.: Pericardial fat necrosis; report of three cases. J Thorac Surg. 1957; 33: 723-729.
4. Bensard D.D., St Cyr J.A., Johnston M.R.: Acute pleuritic chest pain and lung mass in an elderly woman. Chest. 1990; 97: 1473-1474
5. Pineda V., Andreu J., Cáceres J. et al. Lesions of the cardiophrenic space: findings at cross-sectional imaging. Radiographics. 2007; 27: 19-32.
6. Pineda V., Cáceres J., Andreu J., Vilar J., Domingo M.L.: Epipericardial fat necrosis: radiologic diagnosis and follow-up. AJR. 2005; 185: 1234-1236.