

Incidental pleural lipoma in a case of calculous cholecystitis

Published on 16.06.2015

DOI: 10.1594/EURORAD/CASE.12770

ISSN: 1563-4086

Section: Chest imaging

Area of Interest: Abdomen Respiratory system

Procedure: Diagnostic procedure

Procedure: Screening

Imaging Technique: Ultrasound

Imaging Technique: Digital radiography

Imaging Technique: CT

Special Focus: Calcifications / Calculi Neoplasia Case

Type: Clinical Cases

Authors: Sanjay Kumar P., Rishi Philip Mathew, Tessa Jose, Ram Shenoy Basti, Hadihally B. Suresh

Patient: 54 years, male

Clinical History:

A 54-year-old male patient presented with the chief complaints of abdominal pain with dark urine for 3-4 days. The patient was a non-smoker and non-alcoholic. He gave no other significant history.

Imaging Findings:

Ultrasound of abdomen (Fig. 1) revealed multiple calculi averaging approximately 5 to 6 mm. Routine PA Chest Radiograph (Fig. 2) showed a radio-opaque lesion in the right midzone with well-defined margins superiorly, medially and inferiorly, while the lateral margin was obscured by the chest wall. The lesion showed obtuse angles with the chest wall suggesting its pleural-based origin. Chest CT (Fig. 3, 4) plain and post-contrast showed that the lesion was non-enhancing with fat attenuation of approx. -109 Hounsfield Units. The lesion measured approx. 4.7 by 3 cm.

Discussion:

Pleural lipomas are extremely rare benign tumours that originate from the submesothelial layers of the parietal pleural and extend into the subpleural or extrapleural space. They show a slow pattern of growth. These lesions are mostly solitary and involve both sides with equal frequencies. Rarely these lesions may cause symptoms secondary to mass effect such as cough, chest pain, dyspnoea, heaviness of the chest or even back pain. [1, 2] On chest radiograph, they appear as smooth, rounded nodules/masses. CT is the imaging modality of choice. Radiological diagnostic criteria for pleural lipomas include a well-defined mass with homogeneous fat density (-50 to -150 HU), which does not enhance on contrast administration, forms obtuse angles with the chest wall and displaces adjacent pulmonary parenchyma and vessels. [2-4] Advantages of CT include differentiating between pleural and parenchymal disease, determining the location and extent of the lesion as well as characterization of the tissue based on its attenuation. Ultrasound may help in confirming the pleural origin of the tumour, including providing information whether the lesion is cystic or solid and confirming its fat density and homogeneity. MRI is done only if there is a doubt in radiological diagnosis by CT. It gives a better delineation of the relationship between the tumour and the chest wall. MRI can also differentiate between diaphragmatic hernias and eventrations from lipomas arising near the diaphragm. However, the main role of MRI is its value in differentiating lipomas from liposarcomas.[2, 4]

Management of pleural lipomas is not clearly established and is controversial. In the elderly, and especially in those patients with small and asymptomatic lesions, clinical and imaging follow-up is suggested. However, certain authors suggest surgical radical excision as the treatment of choice. The three main reasons for this are: it allows diagnosis by histopathology especially in non-homogenous lesions, allows relief of symptoms and lastly it limits the mass effect on adjacent organs. [3-5] Surgical options include open typical or muscle-sparing thoracotomy, video-assisted thoracoscopic surgery (VATS), and extirpation of pleural lipomas by a single port VATS. [2, 3] Complications, although rare, include compression of adjacent organs, rib lysis secondary to invasion of intercostal spaces and intratumoural haemorrhage causing pain and fever. There is no known secondary transformation of pleural lipomas to liposarcomas. [4, 5] Features favouring liposarcoma include large lesion size, thick septa, nodular and/or globular or non-adipose mass-like areas, decreased percentage of fat and advanced patient age. [6]

Differential Diagnosis List: Incidental pleural lipoma in a case of calculous cholecystitis, Liposarcoma, Hamartoma

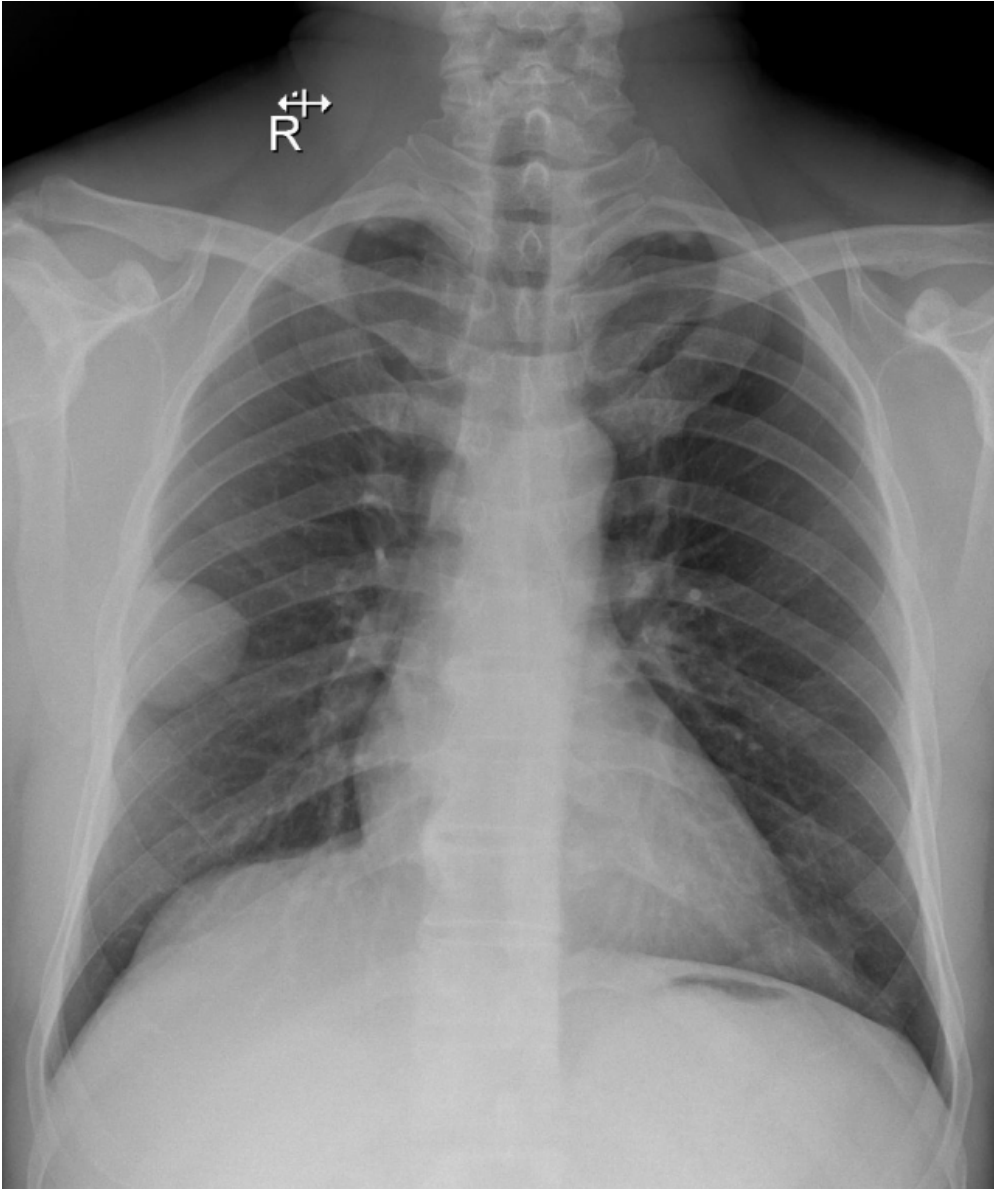
Final Diagnosis: Incidental pleural lipoma in a case of calculous cholecystitis

References:

- Gaerte SC, Meyer CA, Winer-Muram HT, Tarver RD, Conces DJ Jr. (2002) Fat-containing lesions of the chest. *Radiographics* Oct;22 Spec No:S61-78. (PMID: [12376601](#))
- Sakellaridis T, Panagiotou I, Gaitanakis S, Katsenos S. (2013) Subpleural lipoma: Management of a rare intrathoracic tumor. *Int J Surg Case Rep* 4(5):463-5. (PMID: [23562893](#))
- Chen M, Yang J, Zhu L, Zhao H. (2013) Intrathoracic giant pleural lipoma: case report and review of the literature. *J Cardiothorac Surg* Oct 11;8:196. (PMID: [24120207](#))
- Jayle C, Hajj-Chahine J, Allain G, Milin S, Soubiron L, Corbi P. (2012) Pleural lipoma: a non-surgical lesion?. *Interact CardiovascThorac Surg* Jun;14(6):735-8. (PMID: [22371386](#))
- Karlo CA, Stolzmann P, Frauenfelder T, Donati OF, Leschka S. (2010) Computed tomography imaging of subpleural lipoma in two men: two case reports. *J Med Case Rep* Nov 25;4:380. (PMID: [21108781](#))
- Kransdorf MJ, Bancroft LW, Peterson JJ, Murphey MD, Foster WC, Temple HT. (2002) Imaging of Fatty Tumors: Distinction of Lipoma and Well-differentiated Liposarcoma. *Radiology* Jul;224(1):99-104. (PMID: [12091667](#))

Figure 1

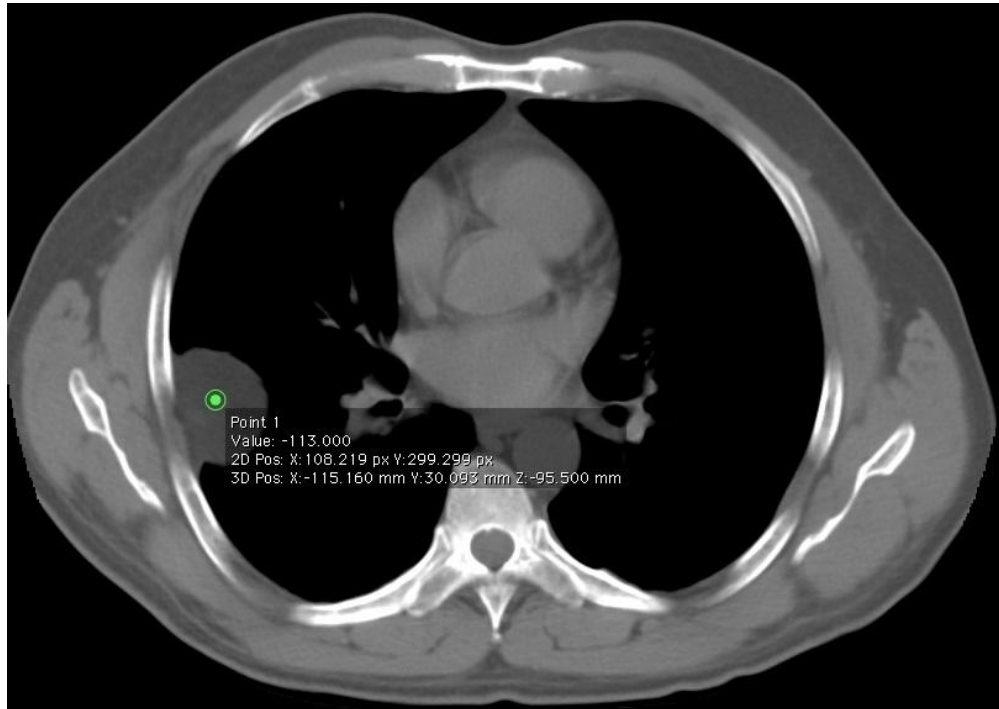
a



Description: PA chest radiograph showed a radio-opaque lesion in the right midzone which made an obtuse angle with the chest wall. Adjacent ribs were normal. **Origin:** Father Muller Medical College, Mangalore, Karnatka, India.

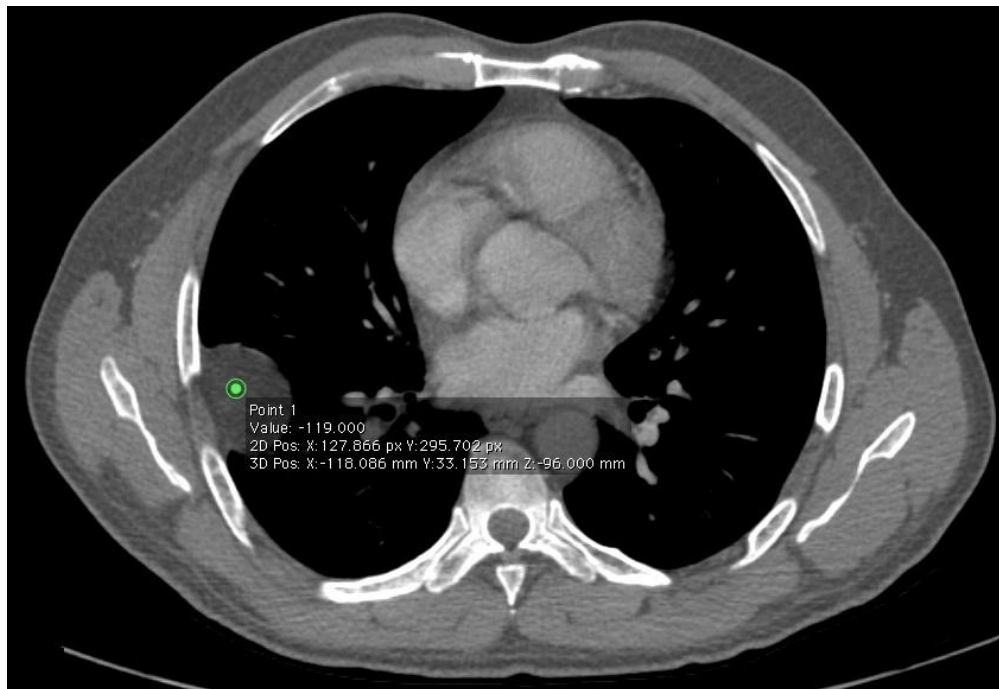
Figure 2

a



Description: Plain CT (axial section) showed a pleural-based fat density lesion measuring approx. 4.7 x 3 cm with HU value= -109. **Origin:** Father Muller Medical College, Mangalore, Karnataka, India.

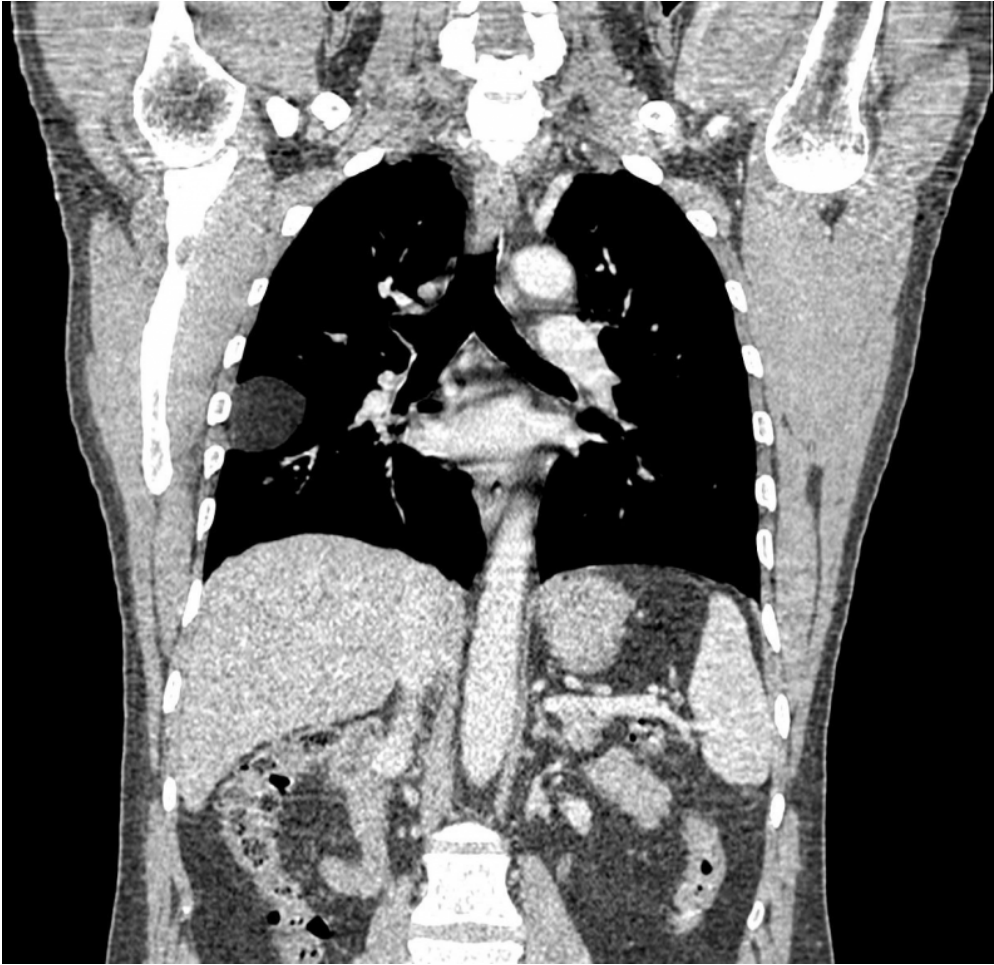
b



Description: On post-contrast chest CT (axial sections) the pleural-based fat density lesion showed no enhancement with HU value remaining -109. **Origin:** Father Muller Medical College, Mangalore, Karnataka, India.

Figure 3

a



Description: Coronal CT of chest showing a right pleural-based fat density lesion. **Origin:** Father Muller Medical College, Mangalore, Karnataka, India.

b



Description: Sagittal CT of chest showing a right pleural-based fat density lesion. **Origin:** Father Muller Medical College, Mangalore, Karnataka, India.

Figure 4



Description: Distended gall bladder showing multiple 6-7 mm calculi. **Origin:** Father Muller Medical College, Mangalore, Karnataka, India.