

Cold Abscess of the Anterior Abdominal Wall: An Unusual Primary Presentation

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Section: Abdominal imaging

Area of Interest: Abdomen

Procedure: Diagnostic procedure

Imaging Technique: Ultrasound

Imaging Technique: CT

Special Focus: Acute Case Type: Clinical Cases

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Patient: 45 years, male

Clinical History:

A 45-year-old male presented with a complaint of a painful abdominal lump in the epigastric region, gradually increasing in size for the past 15 days. No history of fever, vomiting, trauma, past surgery or coughing. The patient underwent US abdomen followed by contrast-enhanced CT (CECT) of the abdomen and pelvis.

Imaging Findings:

The US study revealed a large abdominal parietal wall mass (predominantly cystic) of mixed echogenicity, with irregular walls and a liquefied necrotic centre with coarse moving internal echoes. The lesion showed posterior acoustic enhancement. Lesion appeared hypovascular on colour doppler (Fig.1).

CECT of the abdomen showed a fairly large well defined peripherally enhancing loculated cystic fluid density collection with enhancing internal septa and scattered engulfed fat density areas involving the anterior abdominal wall in the epigastric region overlying the left lobe of the liver. The size of the collection measures approximately 7.5x8.3x4 cm.

The lesion involved the rectus sheath and rectus abdominis muscle.

There was significant thickening and inflammation of overlying skin & subcutaneous tissue.

The lesion was seen indenting and compressing on the underlying left lobe of the liver.

There was evidence of insinuation of the collection along the falciform ligament and along the ligamentum venosum, reaching up to the porta hepatis.

The lesion caused mild compression of the left branch of the portal vein (Fig.2-4).

Discussion:

Tuberculosis is a rampant disease in developing countries and with the rapid spread of AIDS it has made inroads into developed nations as well. The common organs involved are the lungs, kidneys, bones and gastrointestinal tract. The difference in the number and virulence of bacilli, the routes of infection and the host's immune status determine the varied manifestations seen in tuberculosis. There are only limited case reports of isolated tuberculous involvement of the parietes [1].

Reports do mention tuberculous abscesses at a site distant from the lung primary without communication [2].

Parietal tuberculous abscesses usually develop secondary to an embolus of tuberculous organisms from the pulmonary focus, by direct inoculation or extension from an underlying lymphadenitis/synovitis/osteomyelitis [3]. The following case illustrates the US appearances of a tuberculous abdominal wall abscess without pulmonary, skeletal or gastrointestinal tuberculosis.

This case is of interest because tuberculous muscle abscess is a rare entity and only isolated cases are reported in the literature. The patient seems to have a primary tubercular anterior abdominal muscular lesion without any history of contact or immunocompromised status. The possible explanation for the rarity of muscle involvement in tuberculosis may be high lactic acid content, lack of reticulo-endothelial tissue in the muscle, lack of lymphatic tissue, the abundant blood supply and the highly differentiated state of muscle tissue [4]. Ultrasonography usually shows a parietal-wall mass (predominantly cystic) of mixed echogenicity, with irregular walls and a liquefied necrotic centre. Sometimes, an evidence of posterior acoustic enhancement with focal areas of calcification within the lesion may also be demonstrated sonographically. Computed scan of the abdomen usually shows a well-defined abscess in the abdominal wall. Ultrasonography or CT-guided aspiration followed by cytological examination usually reveals tuberculous granulomas with areas of caseous necrosis. Ziehl-Neelsen (Z-N) staining or culture of the aspirate may also help in confirming the diagnosis. Management of this entity is mainly in the form of anti-tubercular therapy. Intervention in the form of either sonography or CT-guided aspiration or open drainage is usually reserved for patients in whom medical treatment fails [5].

In our case, ultrasonography-guided diagnostic aspiration was performed followed by a cytological examination which revealed tuberculous granulomas with areas of caseous necrosis. The patient is responding well to anti-tubercular therapy.

The present case cautions the clinicians and radiologists about the possibility of tuberculosis in considering the differential diagnosis of any lesion even in any unlikely anatomical area, especially in those areas where tuberculosis is endemic or where the disease is rampant.

Differential Diagnosis List: Primary cold abscess of the anterior abdominal wall, Pyogenic abscess, Hematoma, Cystic abdominal wall tumour, Lymphovenous malformation

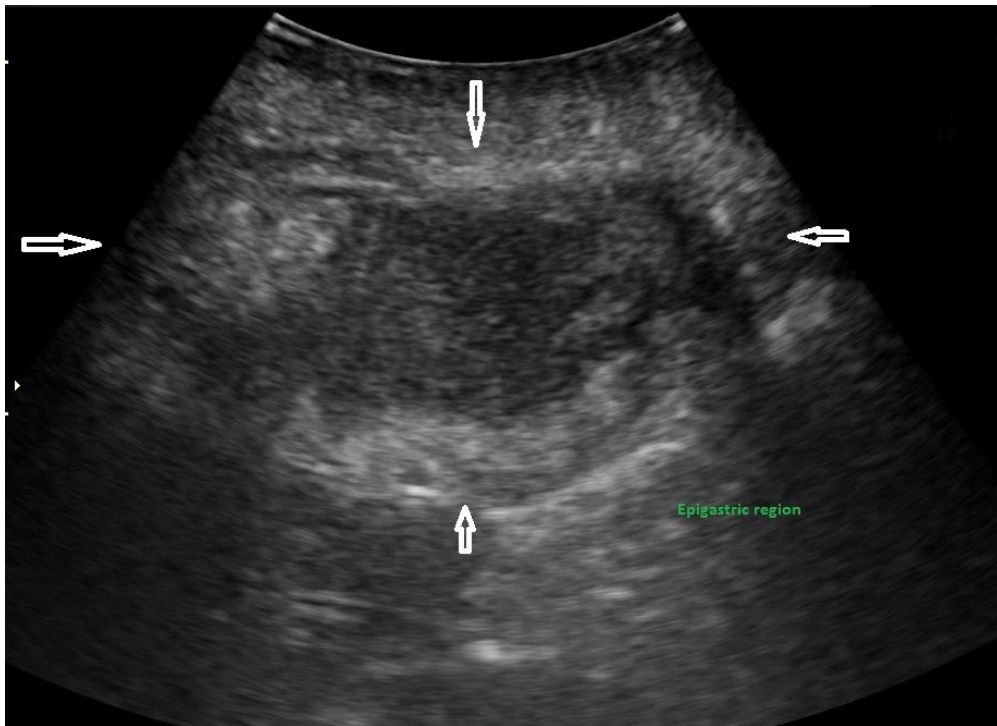
Final Diagnosis: Primary cold abscess of the anterior abdominal wall

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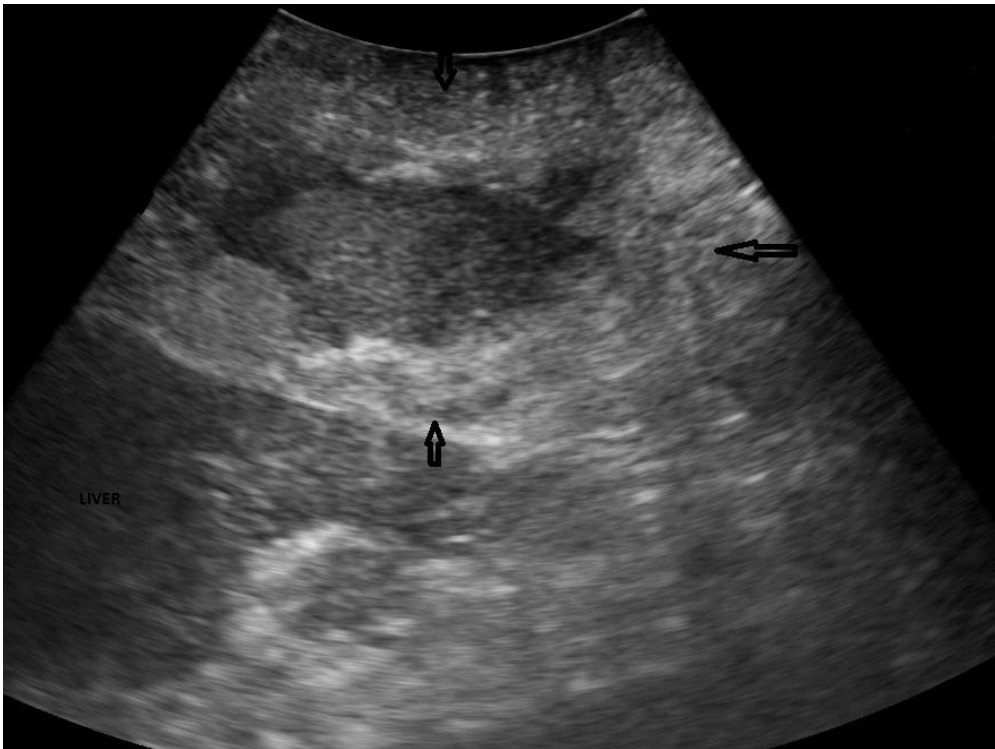
Figure 1

a



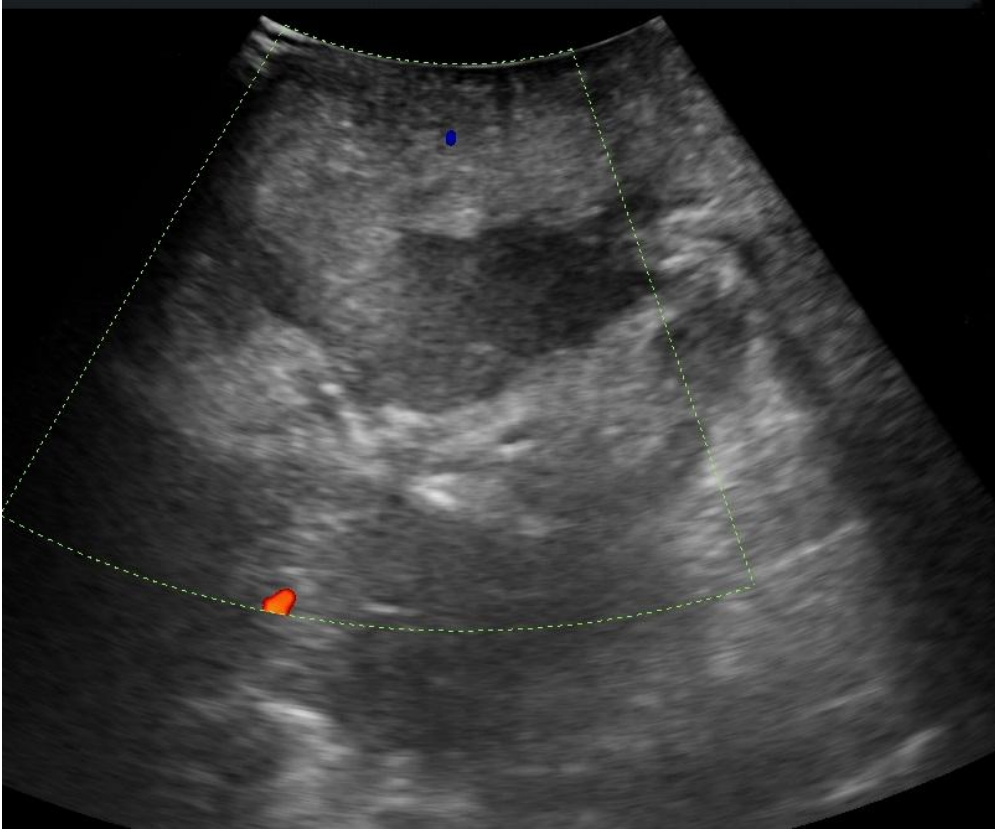
Description: Large abdominal parietal wall mass (predominantly cystic) of mixed echogenicity, with irregular walls and liquefied necrotic center with coarse internal echoes. Lesion shows posterior acoustic enhancement. **Origin:** Concept diagnostic and imaging center, Surat, India

b



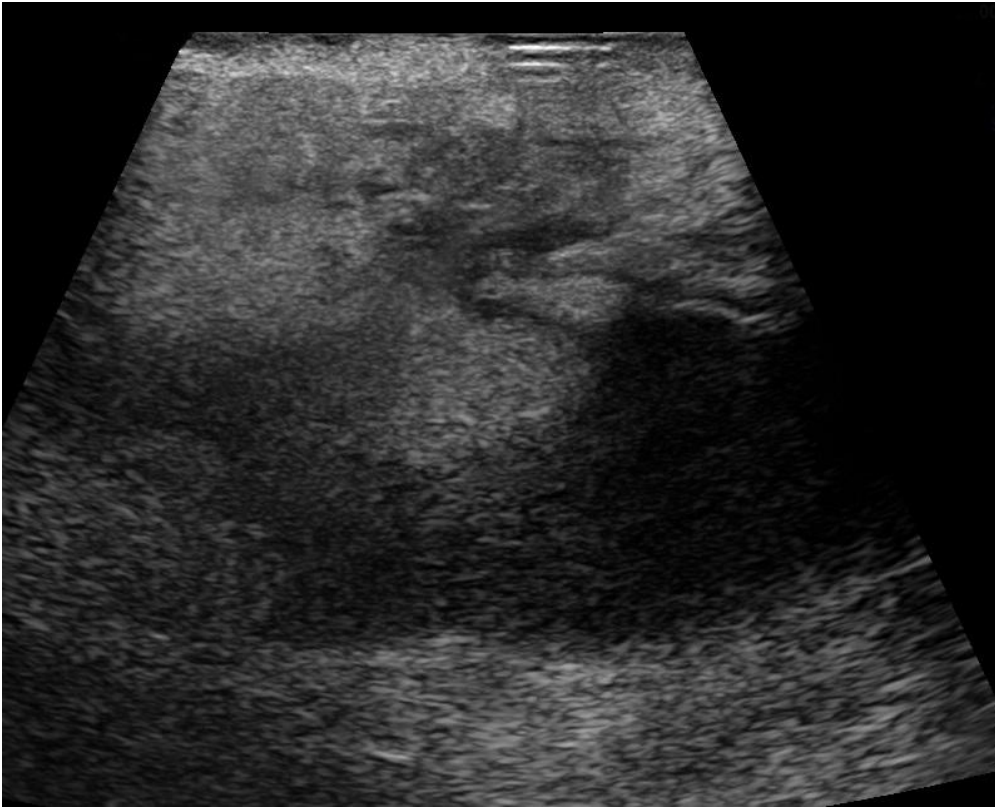
Description: Lesion is seen indenting underlying left lobe of liver. **Origin:** Concept diagnostic and imaging center, Surat, India

c



Description: Lesion appears hypovascular on colour doppler. **Origin:** Concept diagnostic and imaging center, Surat, India

d



Description: Lesion shows coarse internal echoes. **Origin:** Concept diagnostic and imaging center, Surat, India

Figure 2

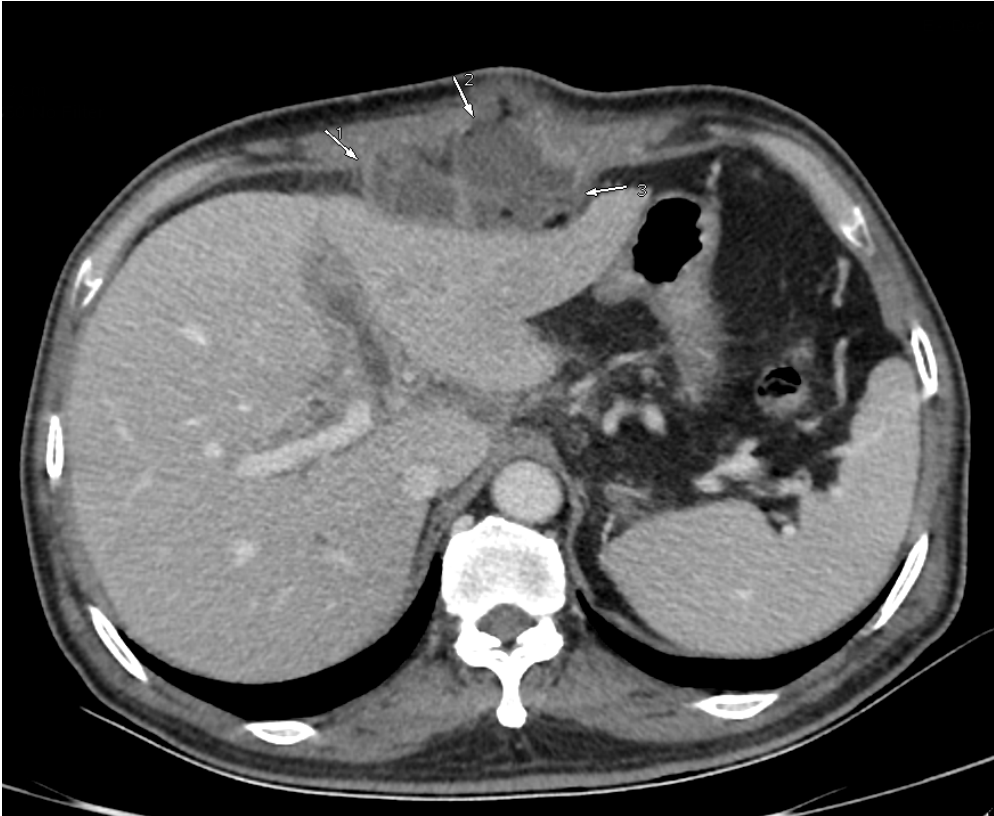
a



Description: Loculated cystic fluid density collection with scattered engulfed fat density areas in it, involving the rectus sheath of the anterior abdominal wall in epigastric region overlying left lobe of liver. No evidence of calcification. **Origin:** Concept diagnostic and imaging center, Surat, India

Figure 3

a



Description: Peripherally enhancing cystic fluid density collection in anterior abdominal wall in epigastric lesion. Lesion shows enhancing internal septa and scattered engulfed fat density areas in it.

Origin: Concept diagnostic and imaging center, Surat, India

b



Description: Lesion is seen indenting underlying left lobe of liver. **Origin:** Concept diagnostic and imaging center, Surat, India

c



Description: Significant thickening of overlying skin and subcutaneous tissue. Lesion involves rectus sheath and rectus abdominis muscle. **Origin:** Concept diagnostic and imaging center, Surat, India

d



Description: Insinuation of collection along falciform ligament and ligamentum venosum reaching upto porta hepatis, compressing left branch of portal vein. **Origin:** Concept diagnostic and imaging center, Surat, India

Figure 4

a



Description: Fairly large peripherally enhancing loculated cystic fluid density collection in anterior abdominal wall in epigastric lesion. **Origin:** Concept diagnostic and imaging center, Surat, India

b



Description: Significant thickening of overlying skin and subcutaneous tissue. **Origin:** Concept diagnostic and imaging center, Surat, India

c



Description: Insinuation of collection along falciform ligament. **Origin:** Concept diagnostic and imaging center, Surat, India

d



Description: Lesion shows enhancing internal septa and scattered engulfed fat density areas in it.

Origin: Concept diagnostic and imaging center, Surat, India