Case Discussion – Splenic Abscess

Personal Data

- Gender: male
- Birth Date: 1928/Mar/06th
- Allergy: Mefenamic
- Smoking: 0.5 PPD for 55 years
- Alcohol: negative (?)

4 Months Ago

- Abdominal pain: epigastric area and LUQ of the abdomen
- Denied trauma
- Frequency: once every 3 to 4 days
- Abdominal sonography in 國泰 H.:
  - Gall stone
  - Renal cyst
  - Hydronephrosis
  - Deformed spleen r/o tumor

End of This July

- Hospitalization in 嘉義長庚
- Impression: gall stone
- Laparoscopic cholecystectomy

End of September

- Sudden persisted epigastralgia
- Elevated amylase and lipase levels
- CT scan of the abdomen:
  - Blurred outline of the spleen with several hypodense areas in it
  - Close contact of the pancreatic tail with the spleen
  - Left pleural effusion, bil. Pleural thickening, inflammation in left lower lung

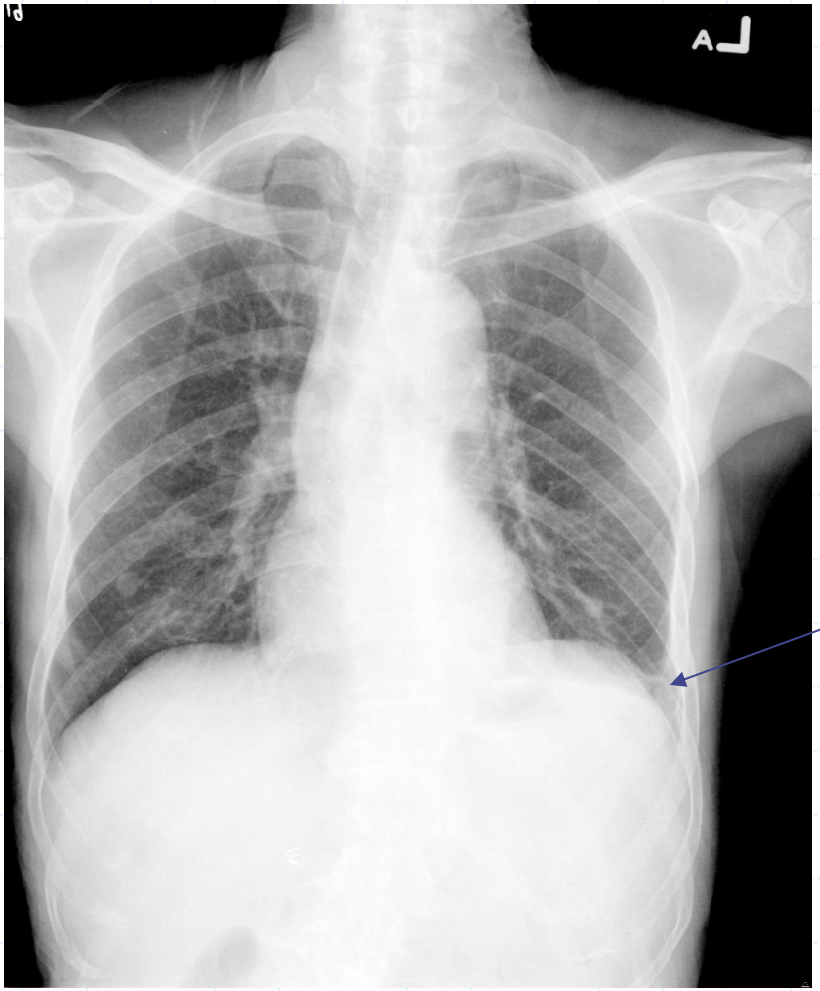
Mid-October

- Transferred to our ED
- Abdominal pain:
  - Epigastric, LUQ and periumbilical areas
  - Radiation to the left shoulder
- Frequency: once a day
- Cold sweating, pale face
- Body weight loss: 60→46 Kg in 3 months
- Knee-chest position
- Trauma history: denied

Laboratory Studies

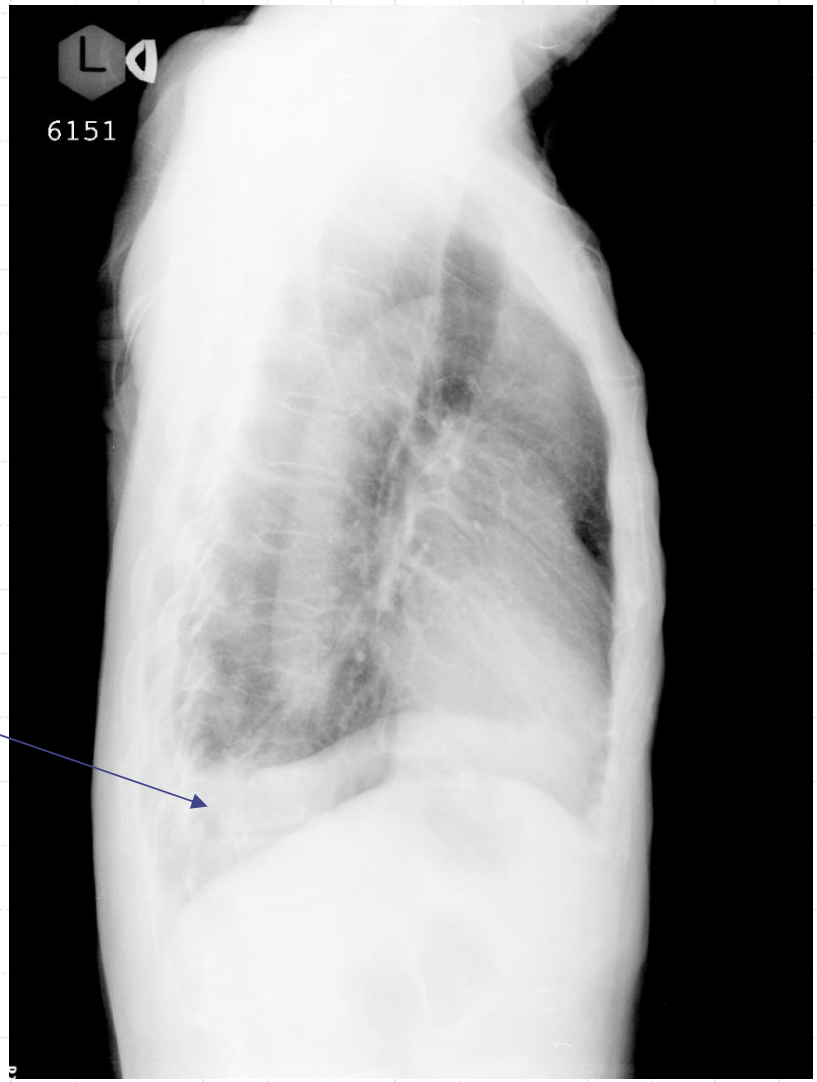
- 2006-10-13
  - AST: 43 IU/L
  - Amylase/Lipase: 746/422 U/L
- 2006-10-17
  - CRP: 1.40 mg/dL
- White count, CEA, CA 19-9: WNL

2006-10-13 CXR



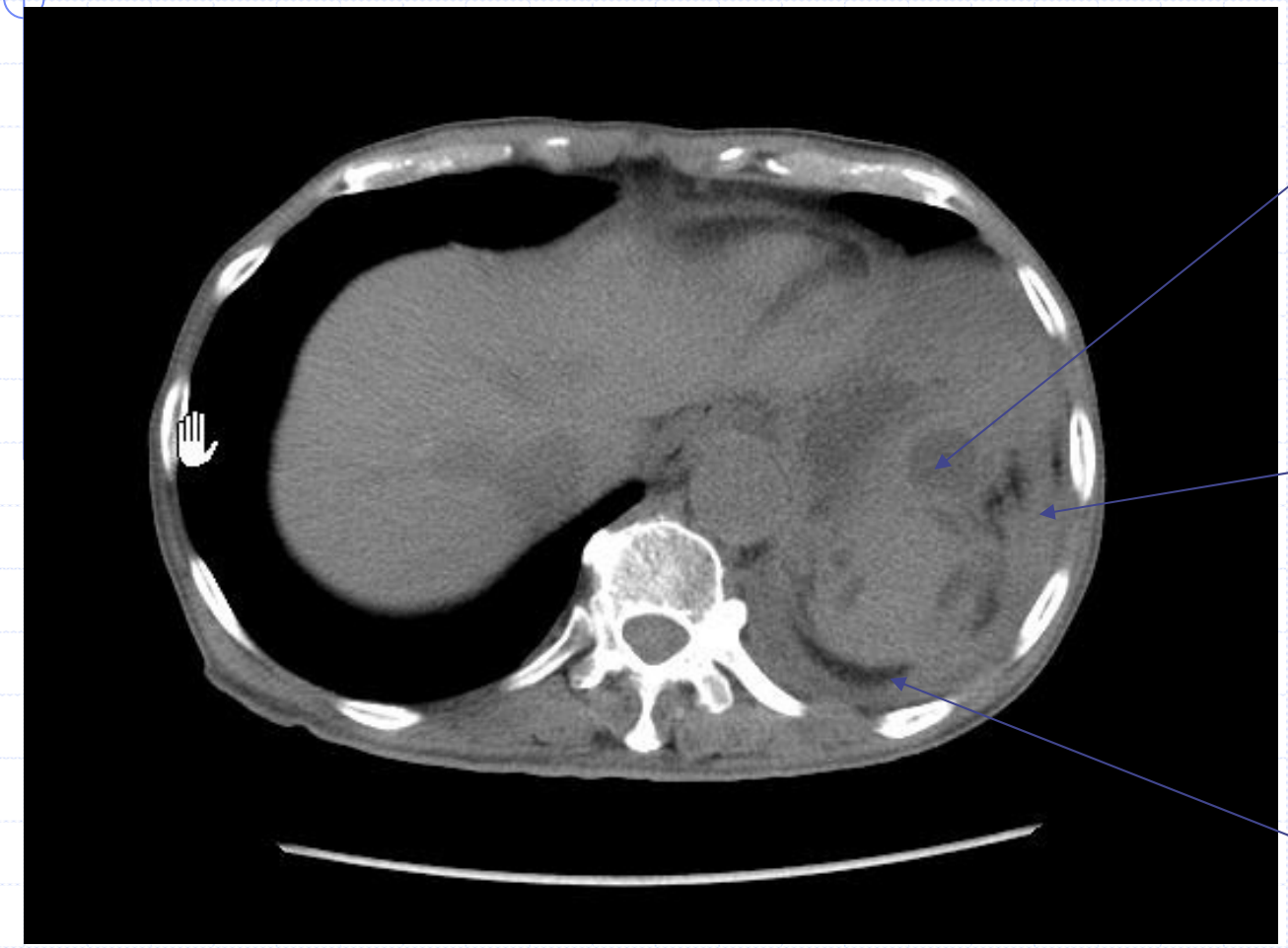
Pleural thickening

2006-10-14 CXR, Lateral



Pleural effusion

2006-10-17 CT Scan

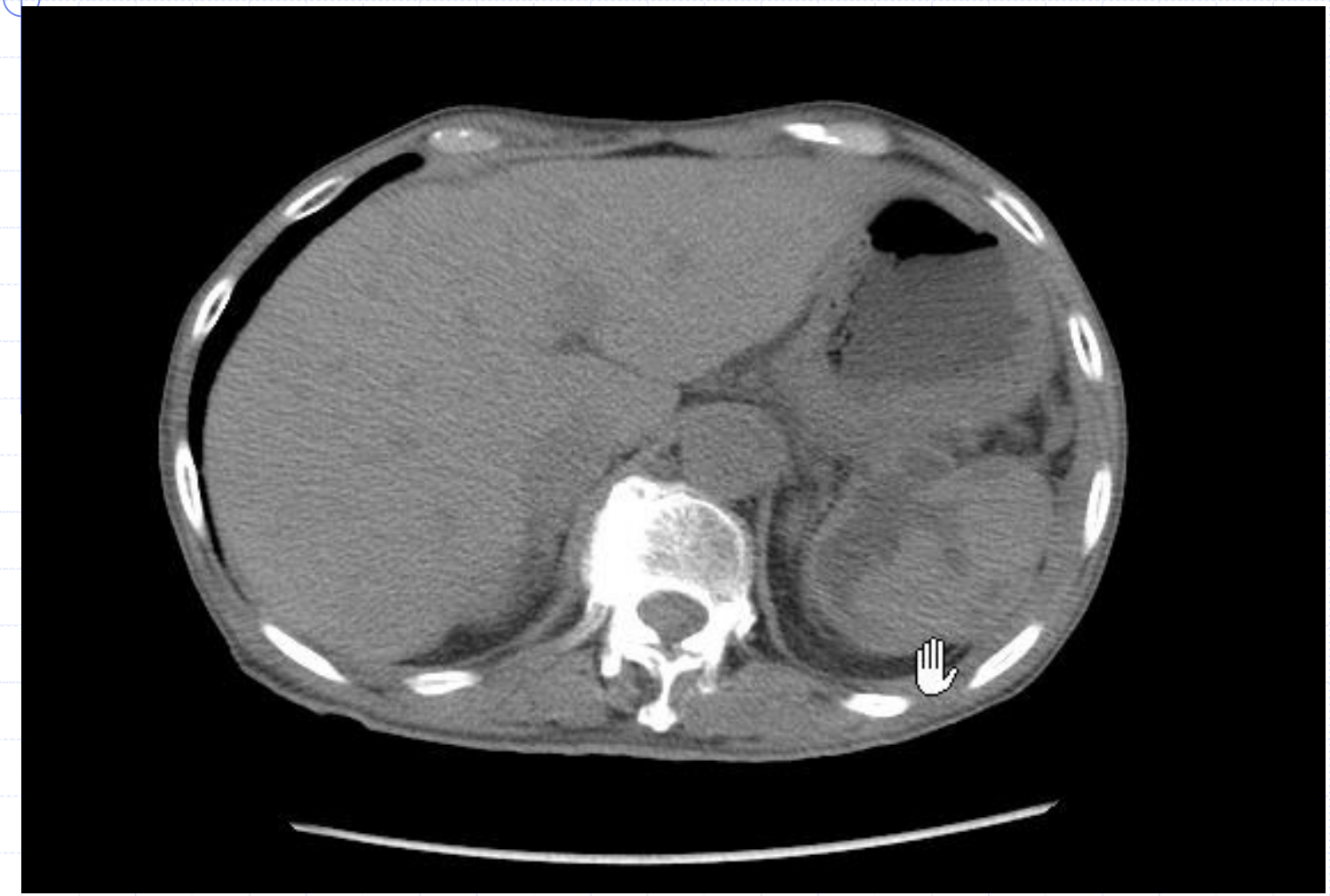


Hypodense lesion with ill-defined border

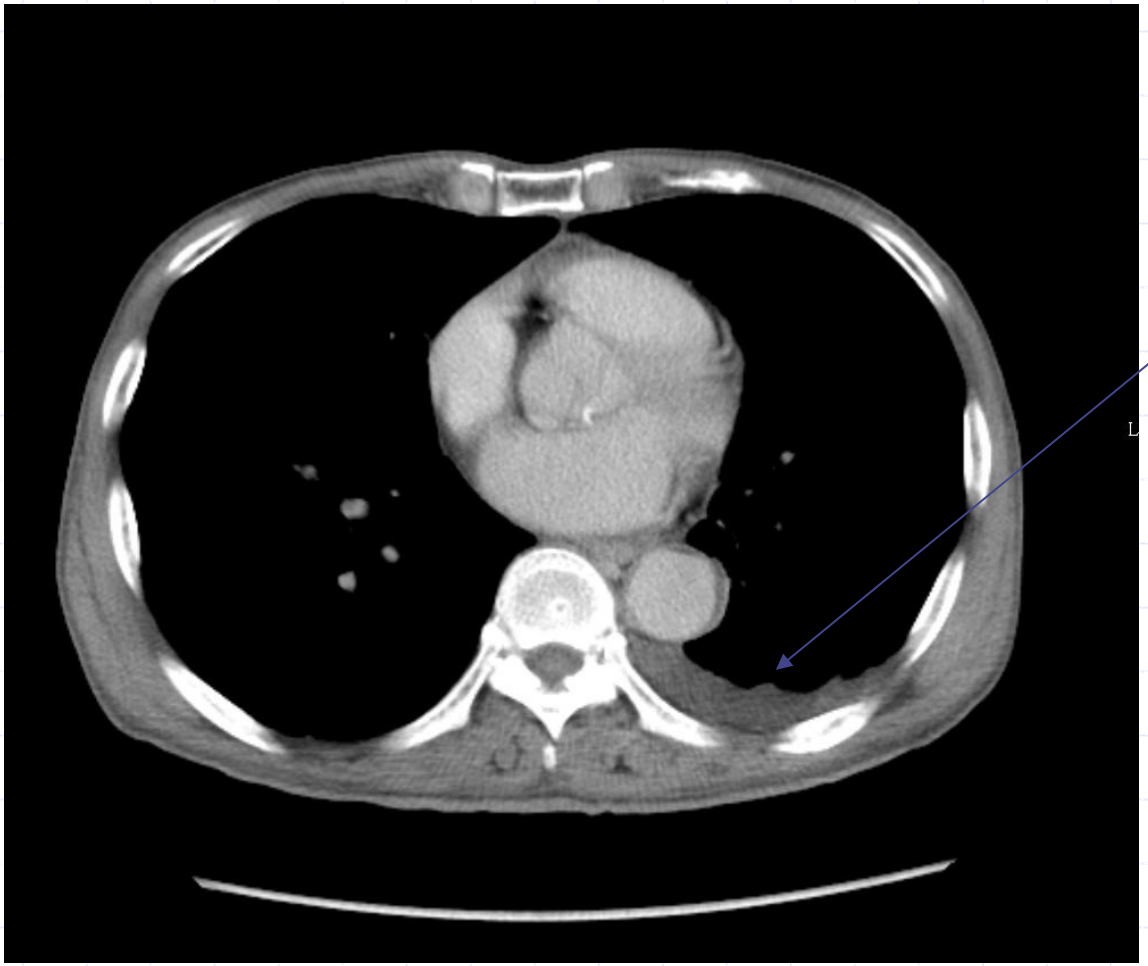
Inflammatory process

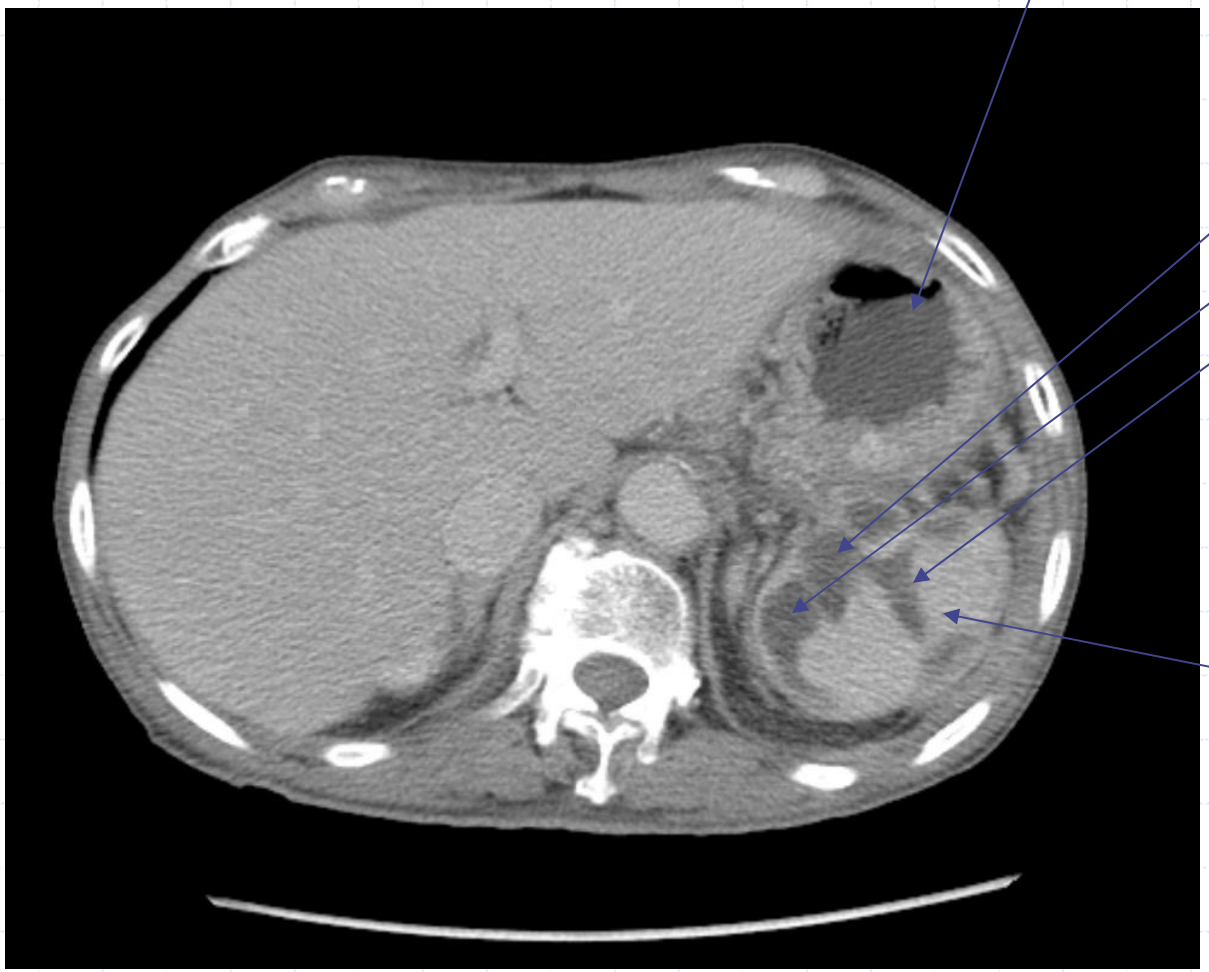
Pleural effusion

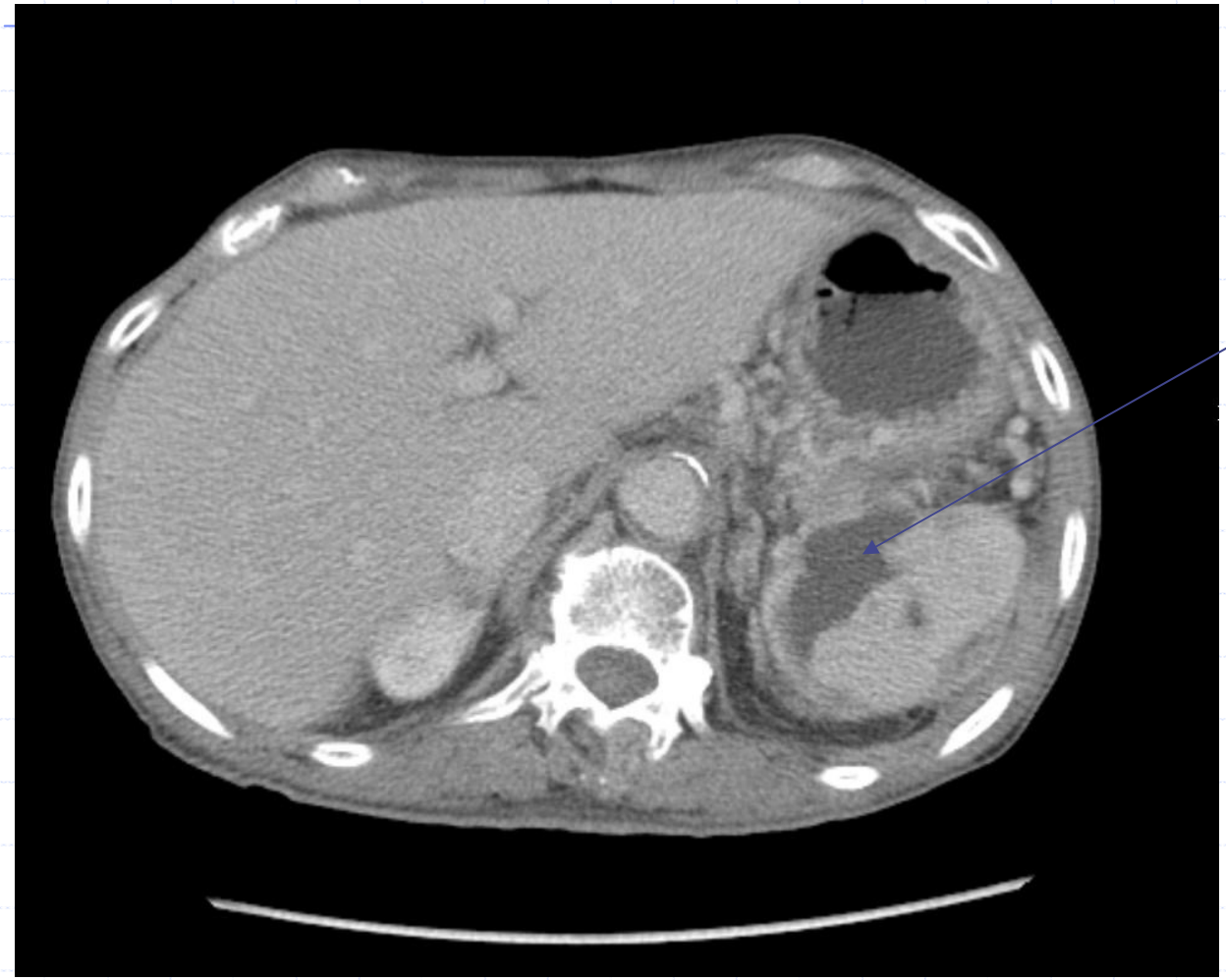
Pre-CM



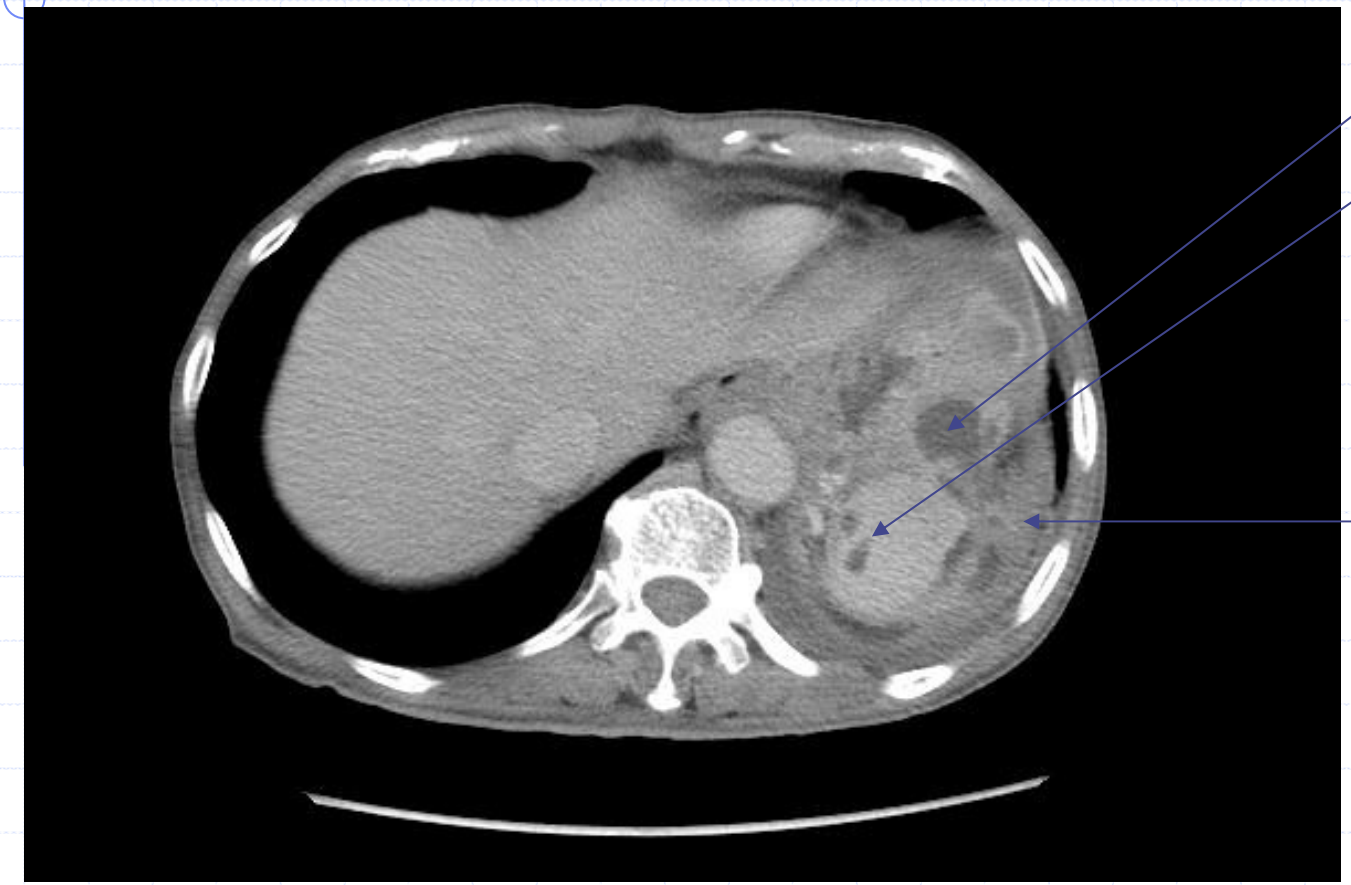
Post-CM

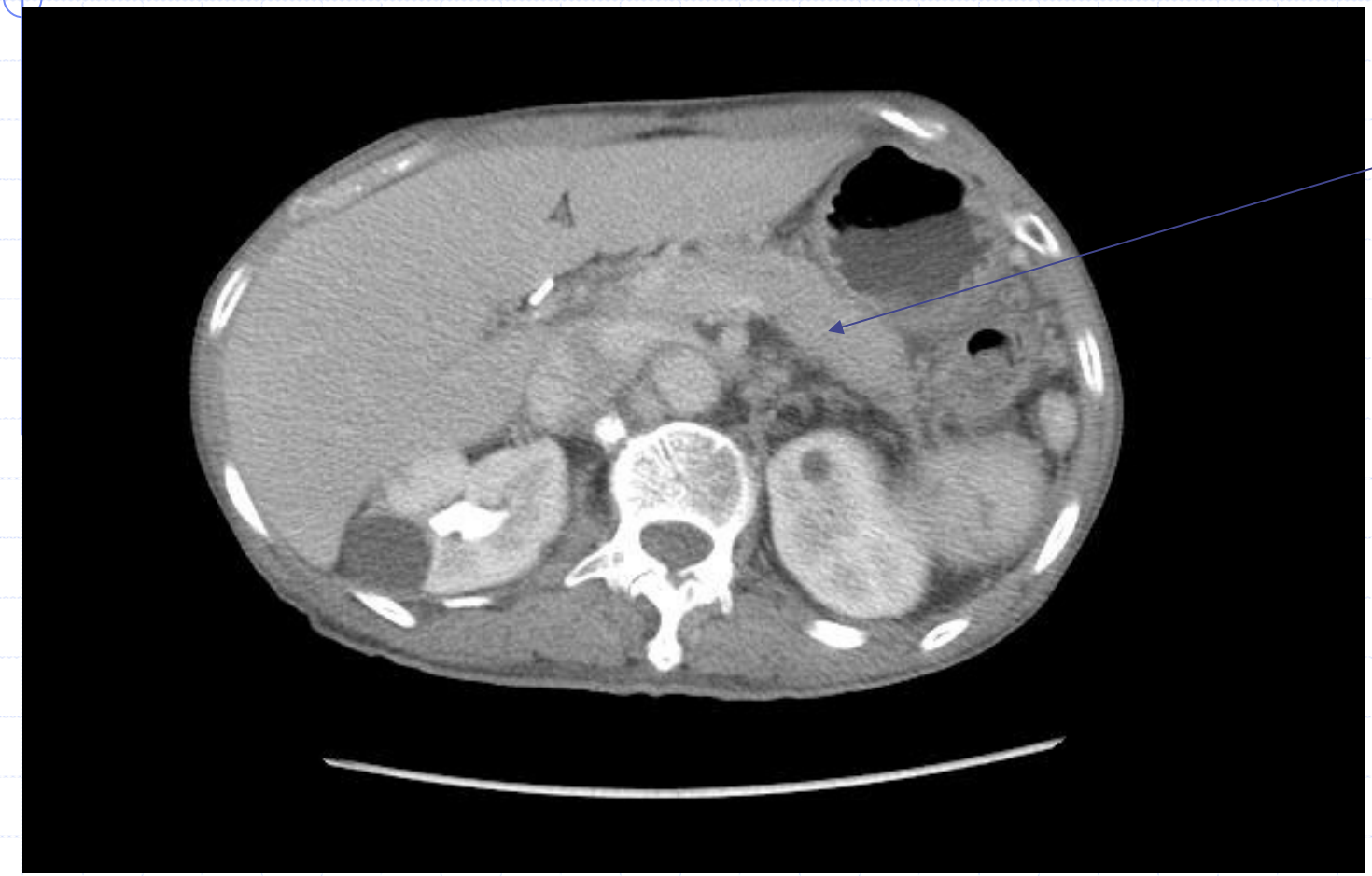



Stomach
Multiple hypodense lesions with ill-defined borders and heterogenous contents
Spleen



Hypodense lesion without enhancement


Lesion without enhancement
Inflammatory process



Enlarged pancreas with relatively decreased density

Differential Diagnosis

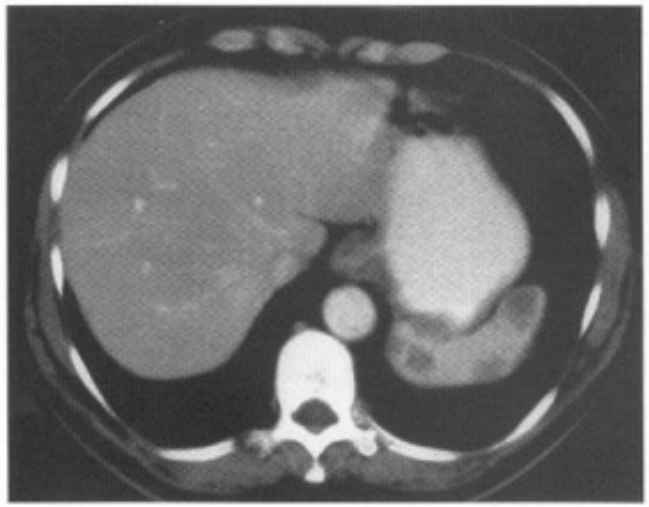
- Cystic lesion
  - → With or without cell debris?
  - → Solitary or multiple?
  - → With or without enhancement?
  - → Other associated findings?
  - → Correlating patient's data and history

Hematoma or Abscess

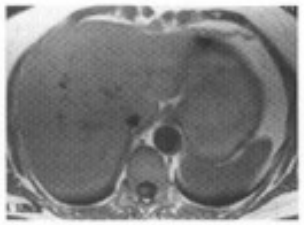
- Heterogenous content with relatively higher density than pure fluid
- Inflammatory process of the peripheral tissues
- Infective vs. trauma: denied histories of trauma

Hemangioma

- Mostly similar to hemangiomas of the liver
- Delayed enhancement
- Mostly detected incidentally
- MRI
  - T1: low signal intensity or iso-intensity
  - T2: high signal intensity



A



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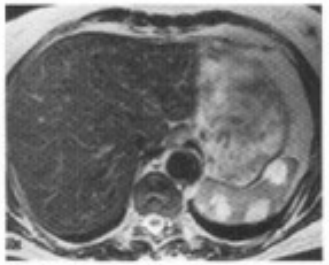

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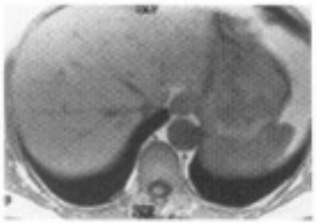

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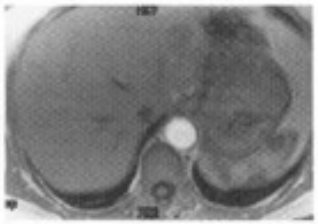

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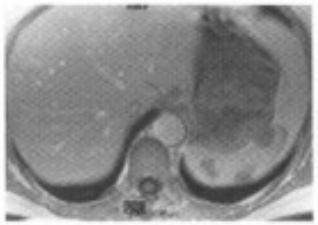

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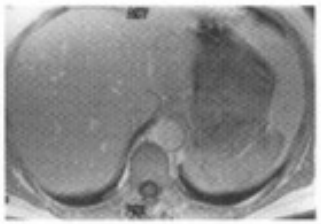


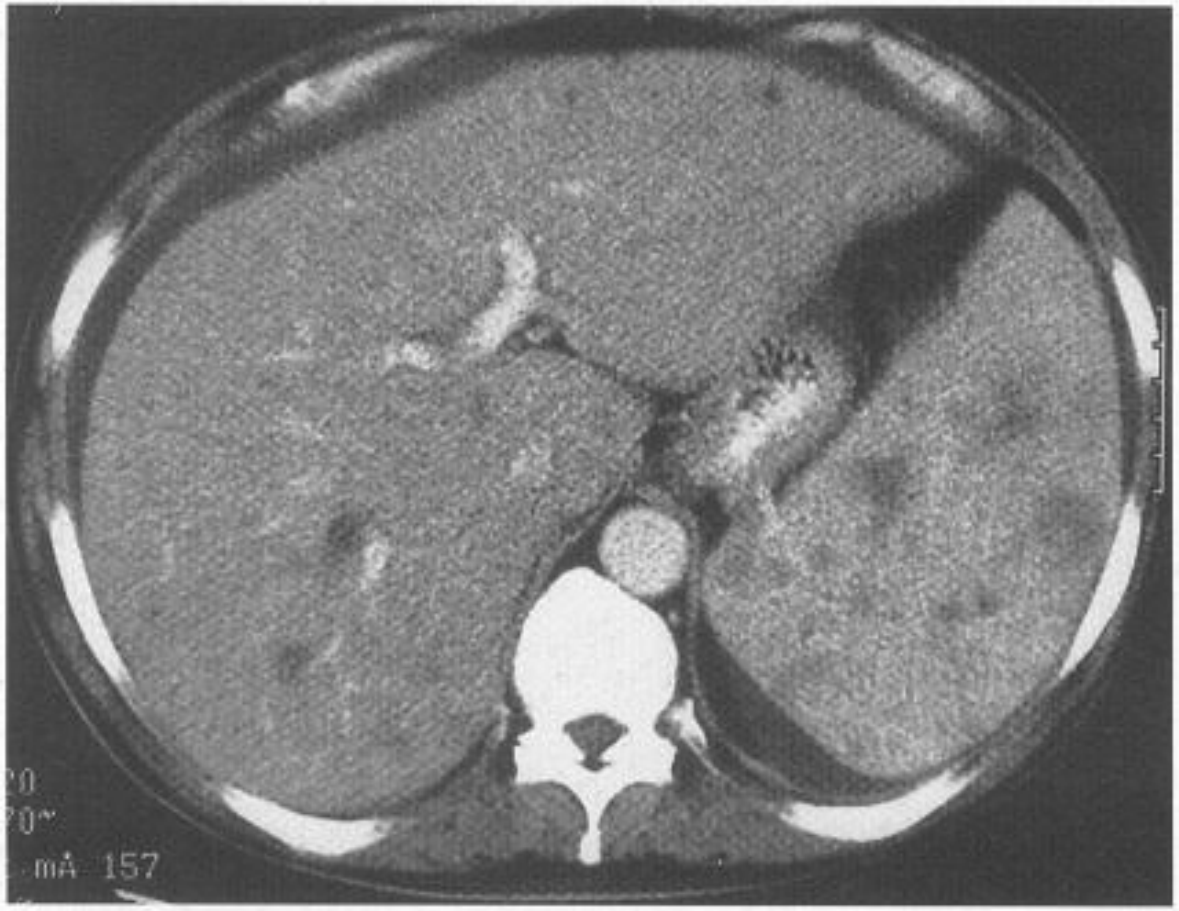
G

Lymphangioma

- Usually:
  - Cystic in spleen
  - Asymptomatic
  - Multiple
  - Thin-walled
  - Well-marginated
  - Subcapsular in location
  - Attenuation: between 15-35 HU

Lymphoma

- Most common splenic malignancy
- Diffusely affected
- Splenomegaly
- Necrosis→cystic lesion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Metastasis

- Most common: breast, lung, melanoma
- Cystic lesion: ovary, breast, endometrium, melanoma
  - Melanoma: usually hypervascular
  - Breast cancer

Diagnosis & Management

- Splenic abscess, suspecting secondary to chronic pancreatitis
- Cefamezine + Gentamicin
- Splenectomy
- Pus culture: no growth

Discussion

Splenic Abscess

Clinical Presentation

- Fever: 95%
- Abdominal pain: 60%
- LUQ pain: 38%
- Left chest pain: 17%
- Left shoulder pain: 10%
- RUQ pain: 6%
- Weakness: 22%
- Chills: 22%
- Nausea/Vomiting: 16%
- Anorexia: 15%
- Diaphoresis: 12%
- Weight loss: 11%
- Change in bowel habits: 9%

- Abdominal tenderness: 59%
- Splenomegaly: 54%
- Hepatomegaly: 16%
- Abdominal distention: 13%
- Ascites: 7%
- Costovertebral angle tenderness: 5%
- Friction rub: 3%

- Dullness at left thoracic base: 33%
- Left basilar rales: 21%
- Elevated left diaphragm: 18%
- Left pleural friction rub: 5%

Lab Studies

- Leukocytosis: 70%
  - Immunocompromised patients with fungal abscesses
- Elevated alkaline phosphatase level
- Positive blood culture: 60%

Image Studies

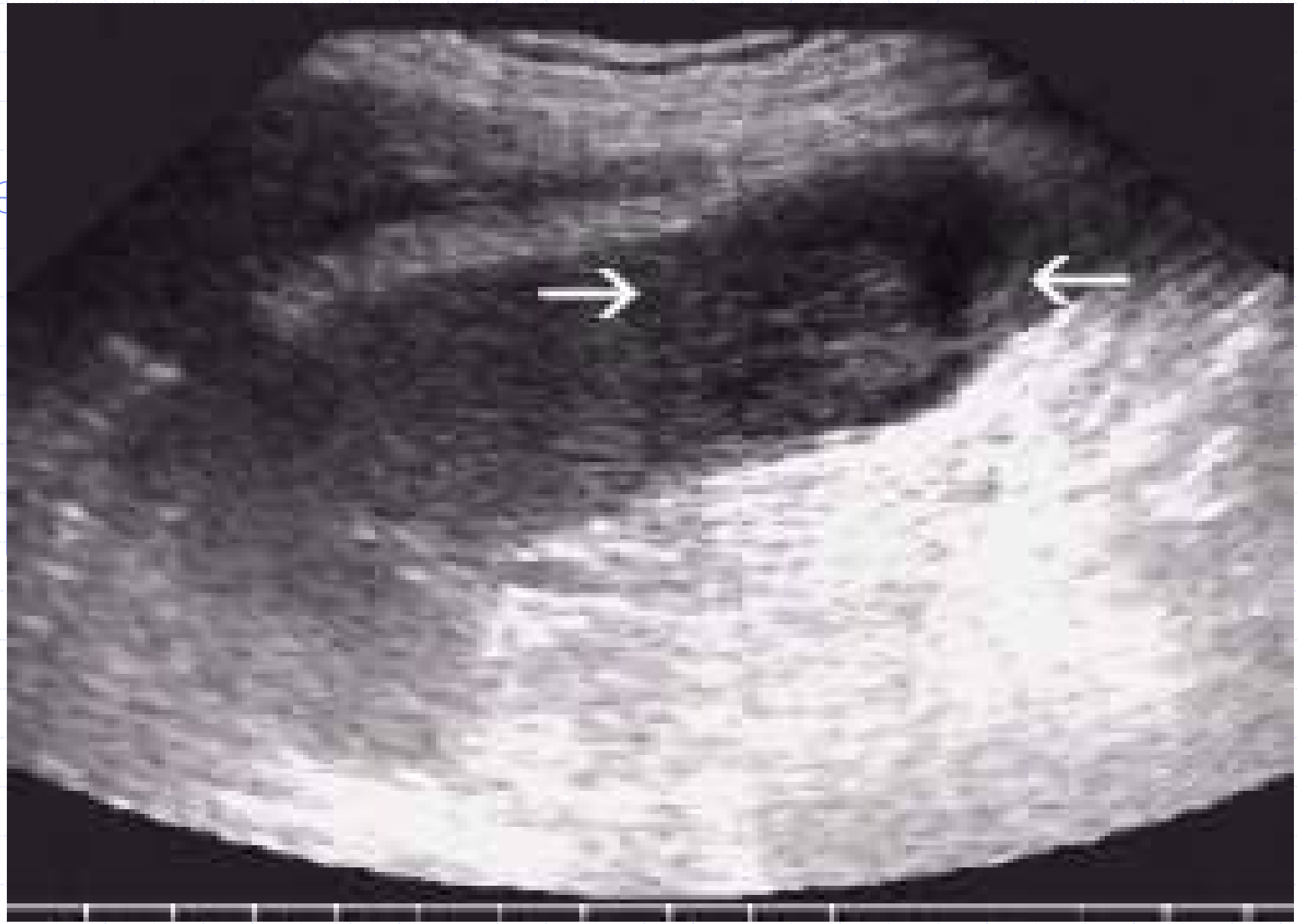
- CXR
  - Abnormal in 80% of patients
  - Elevated left hemidiaphragm: 33%
  - Pleural effusion: 28%
- Abdominal radiograph
  - Abnormal soft tissue density or gas pattern: 35%
- Radioisotope scanning: of little value

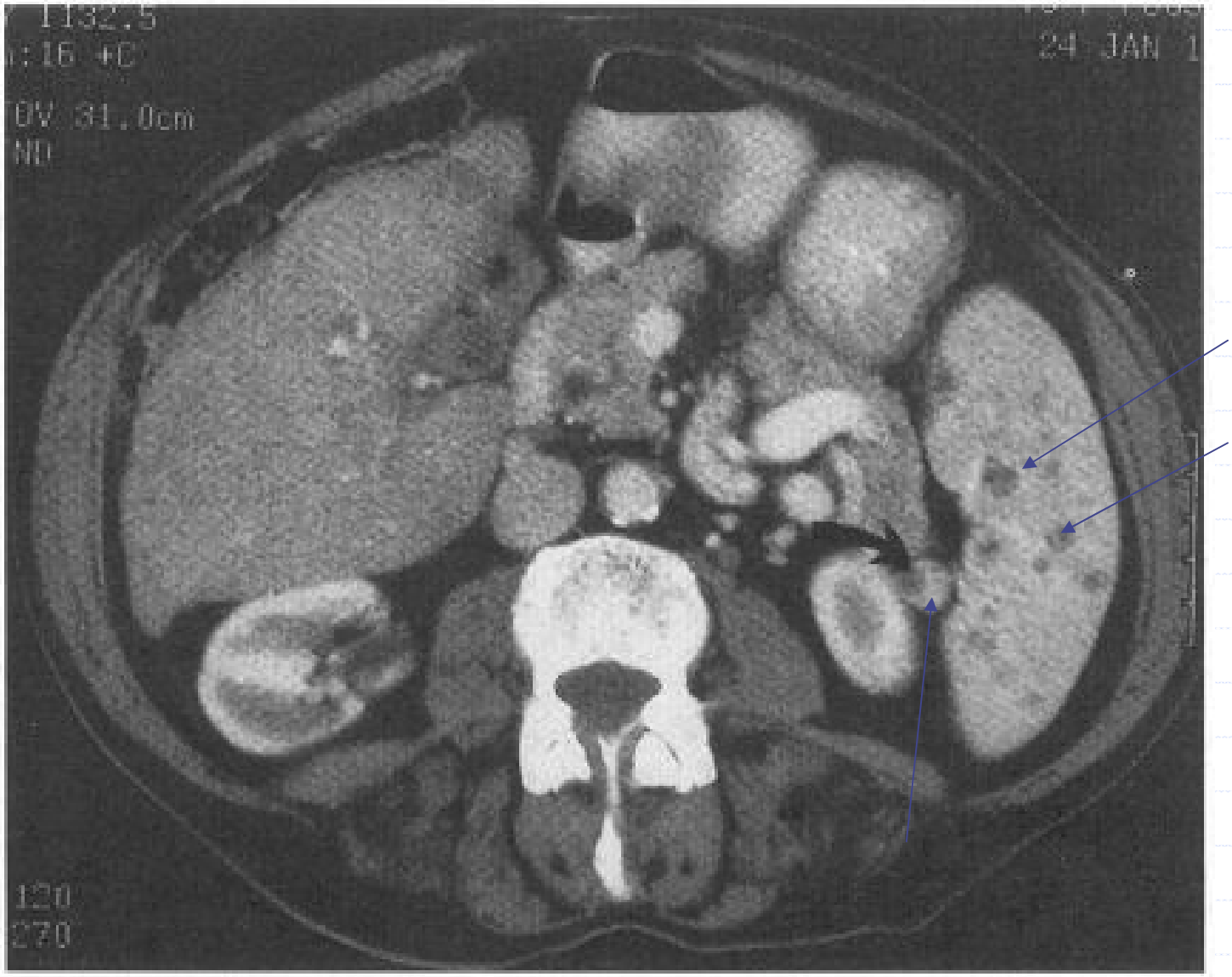
- Ultrasound
  - Repeatable for interval change
  - Nonspecific
  - Highly variable and not easy to interpret
- CT
  - Test of choice
  - Sensitivity: ~100%
  - Low-density lesions without enhancement
  - CT-guided aspiration

- Diagnostic procedure→
  - CT-guided or ultrasound-guided aspiration
  - Proper antibiotic treatment

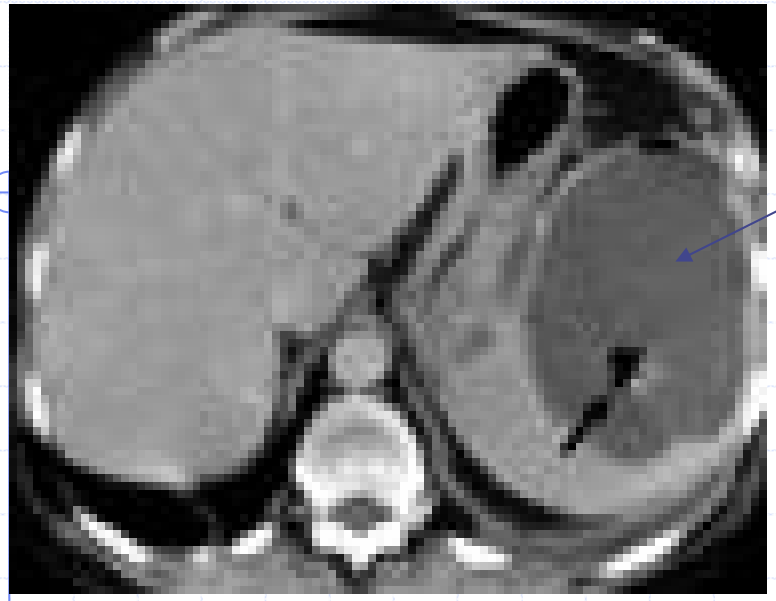
Indication

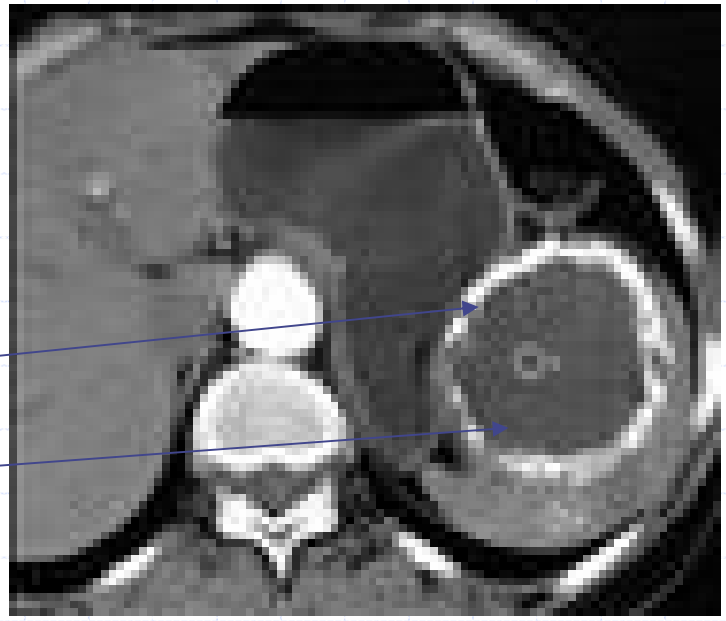
- Once identified, always treated!





Grainger & Allison's Diagnostic Radiology: A Textbook of Medical Imaging, 4th ed.





http://www.medcyclopaedia.com/library/topics/volume_iv_1/a/abscess_splenic/gabscess_splenic_fig1.aspx

Treatment

- Medical treatment
  - Interventional treatment involving antimicrobials
  - Primary medical management: controversial
- Surgical treatment
  - Percutaneous drainage or splenectomy + antimicrobial therapy

- Percutaneous drainage
  - Uniloculate solitary abscess
  - Not contraindicated
  - splenic flexure of the colon and the pleural space→risk of injury
  - Patients with cavities that have calcified walls or patients with a history of travel to endemic areas→Echinococcus

Percutaneous drainage

- Complications:
  - Hemorrhage
  - Pleural empyema
  - Pneumothorax
  - Fistula formation
- Contraindications:
  - Contiguous process
  - A phlegmonous or poorly differentiated lesion on CT scan
  - Multiloculated or debris-filled abscess
  - Uncontrollable coagulopathy

- Splenectomy
- Splenotomy:
  - Reserved for only the sickest patients who have contraindications to both splenectomy and percutaneous drainage

Complications

- Mortality rate: 100% if left untreated
- Rupture:
  - Most common→peritoneal cavity: 6.6%
  - Rupture into the bowel, bronchus, or pleural space
- Colon obstruction
- Splenocutaneous fistula

Complications of Treatment

- Atelectasis
- Left-sided pleural effusion
- Pneumonia
- Subphrenic abscess
- Pancreatic injury with fistula or pseudocyst
- Thrombocytosis
- Overwhelming postsplenectomy sepsis