

Intrahepatic lesion

when an old tool is still useful

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Case presentation

60-year-old patient hospitalized in a psychiatric department for **alcoholism**.

Medical history

- Hospitalizations for alcohol withdrawal
- Controlled hypertension
- Polytrauma from a motorcycle accident with splenectomy and left nephrectomy



Case presentation

Blood test

- Hepatic cytolysis
 - ASAT **43** > 40 UI/L
 - ALAT **48** > 41 UI/L



Ultrasound

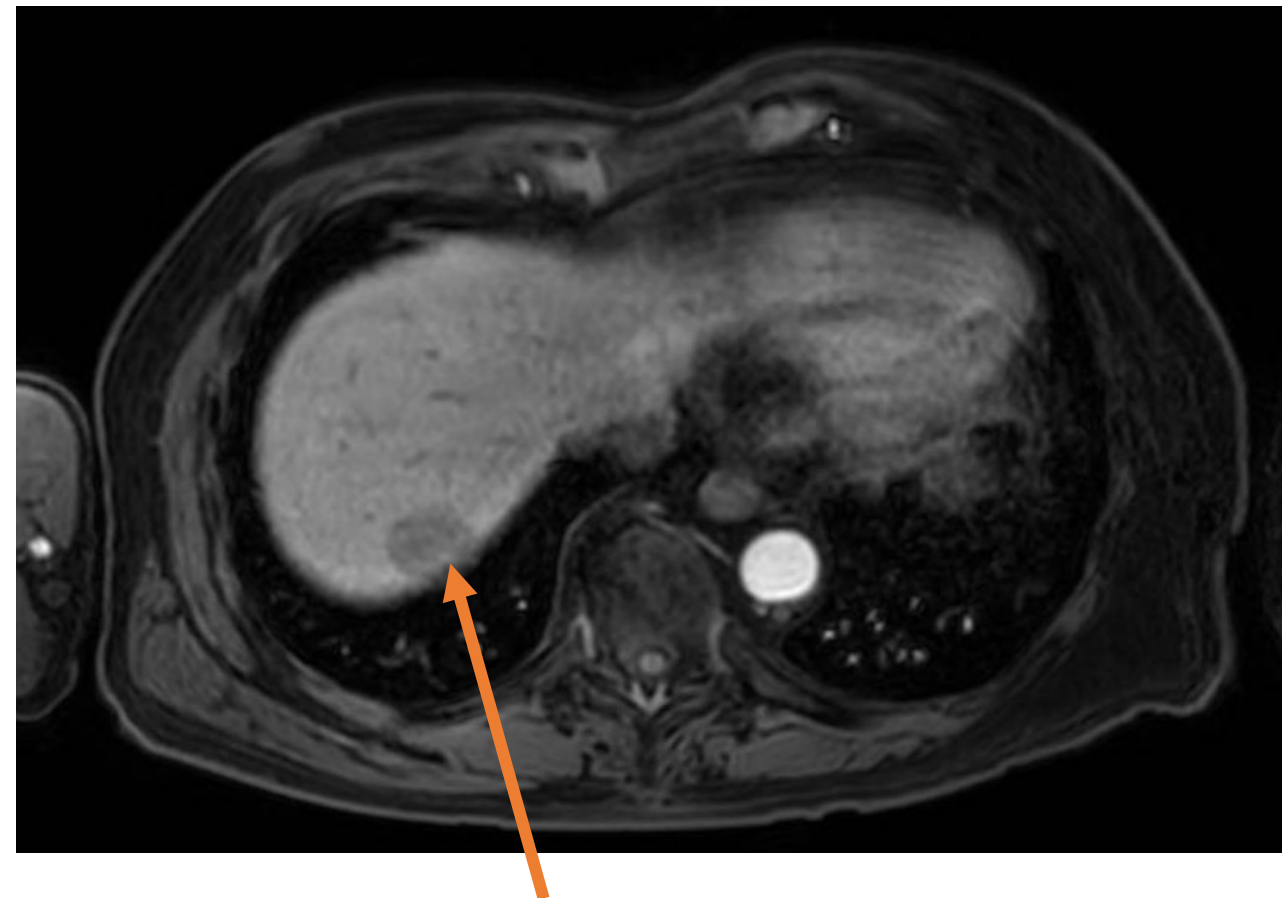
- Hepatic steatosis
- **Hepatic nodular lesion** of undetermined nature.



Case presentation

Abdominal MRI

Nodule in segment VII highly suspicious of **hepatocarcinoma**



Case presentation

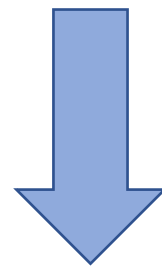
Transferred to the department of digestive surgery.

Extension workup



Case presentation

- During the **multidisciplinary consultation**, it was decided to review the previous imaging.
- History of splenectomy following a post-traumatic splenic rupture.
- **Nodules in the left hypochondrium** had the same signal characteristics as the nodular liver lesion.
- The radiologist suggested that this could be consistent with a splenosis nodule. However, after radiologist contradiction, the diagnosis was not still clear.



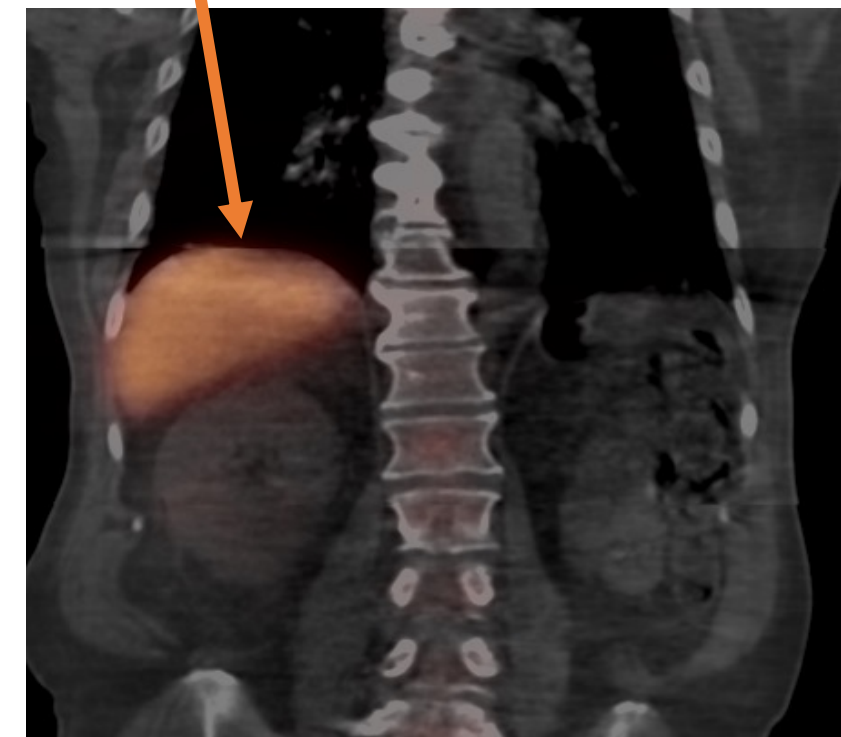
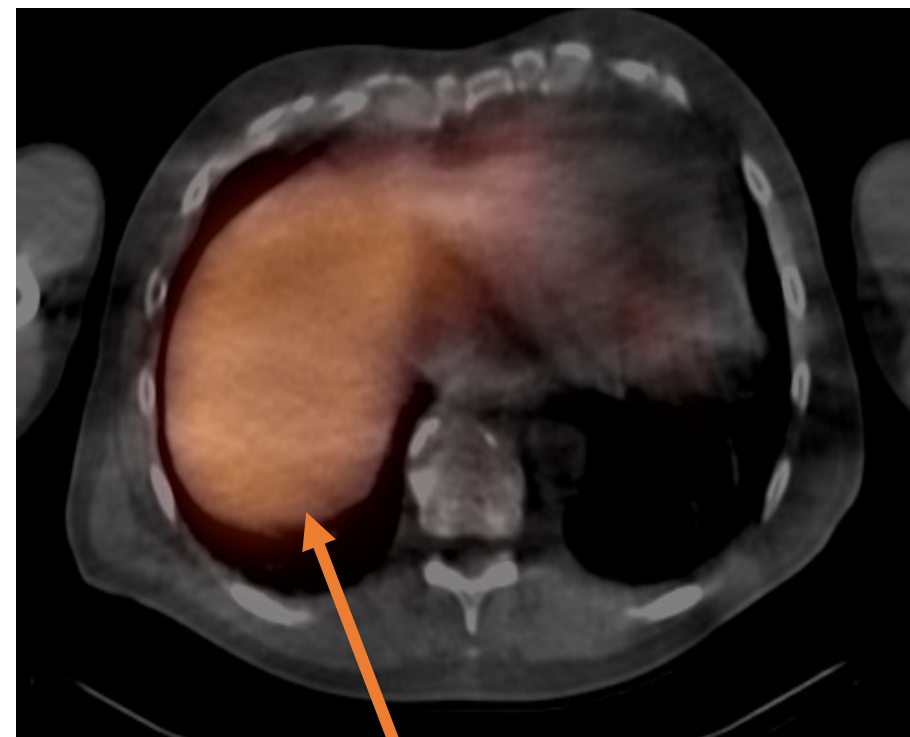
Further diagnostic exams



Case presentation

Sulfur Colloid-Tc99m scintigraphy (220 MBq Nanocoll)

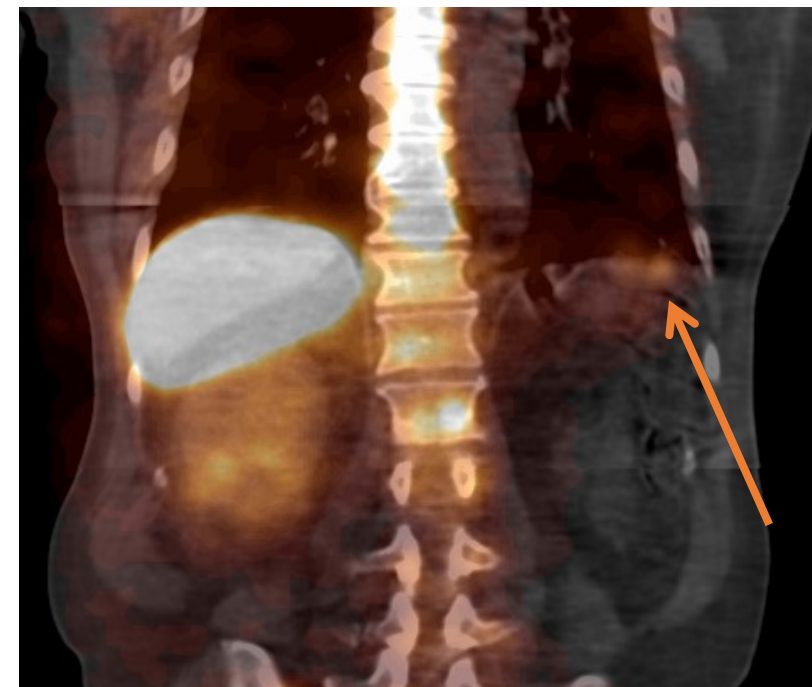
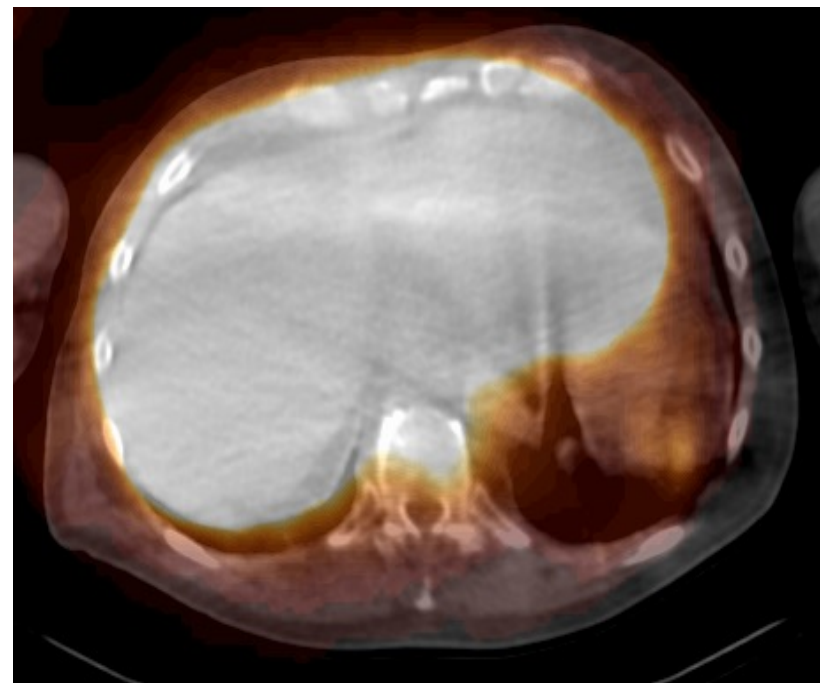
→ Homogeneous uptake in the liver



Case presentation

Sulfur Colloid-Tc99m scintigraphy (220 MBq Nanocoll)

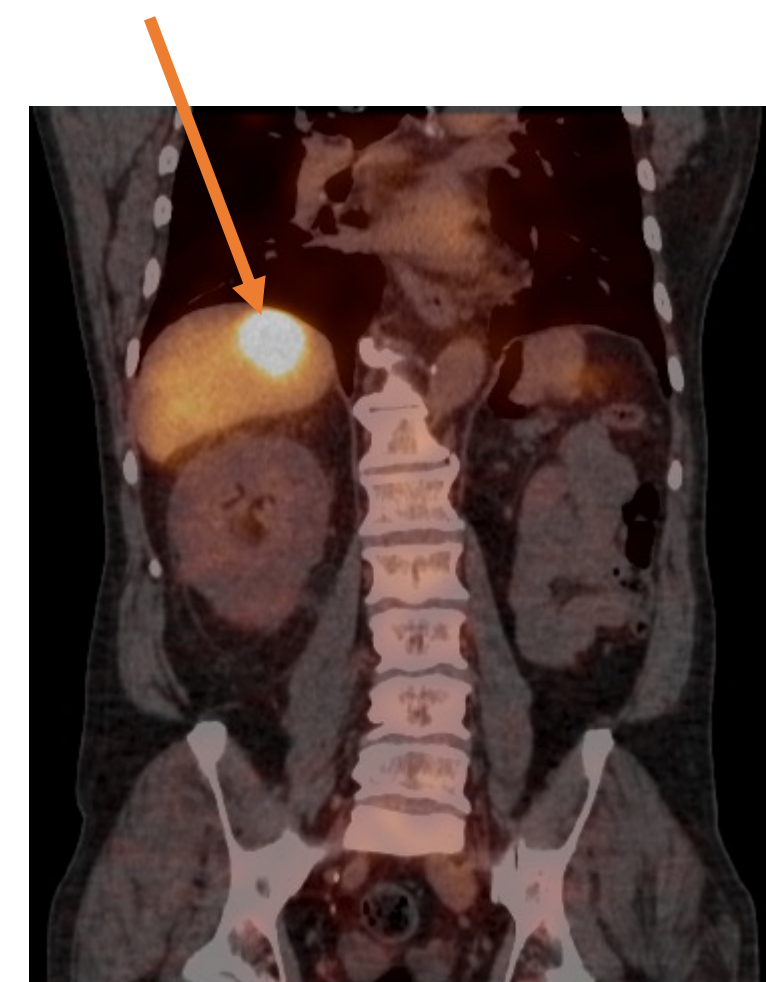
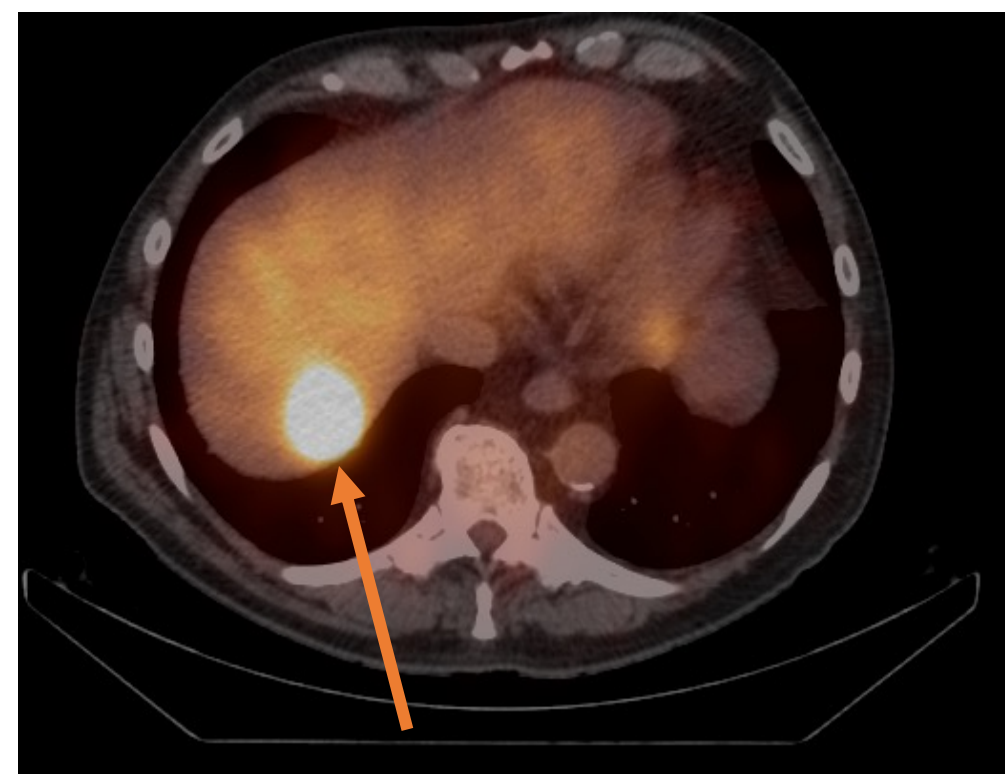
- Homogeneous uptake in the liver
- Very low uptake in the left hypochondrium nodule



Case presentation

Denatured red blood cell-Tc99m scintigraphy

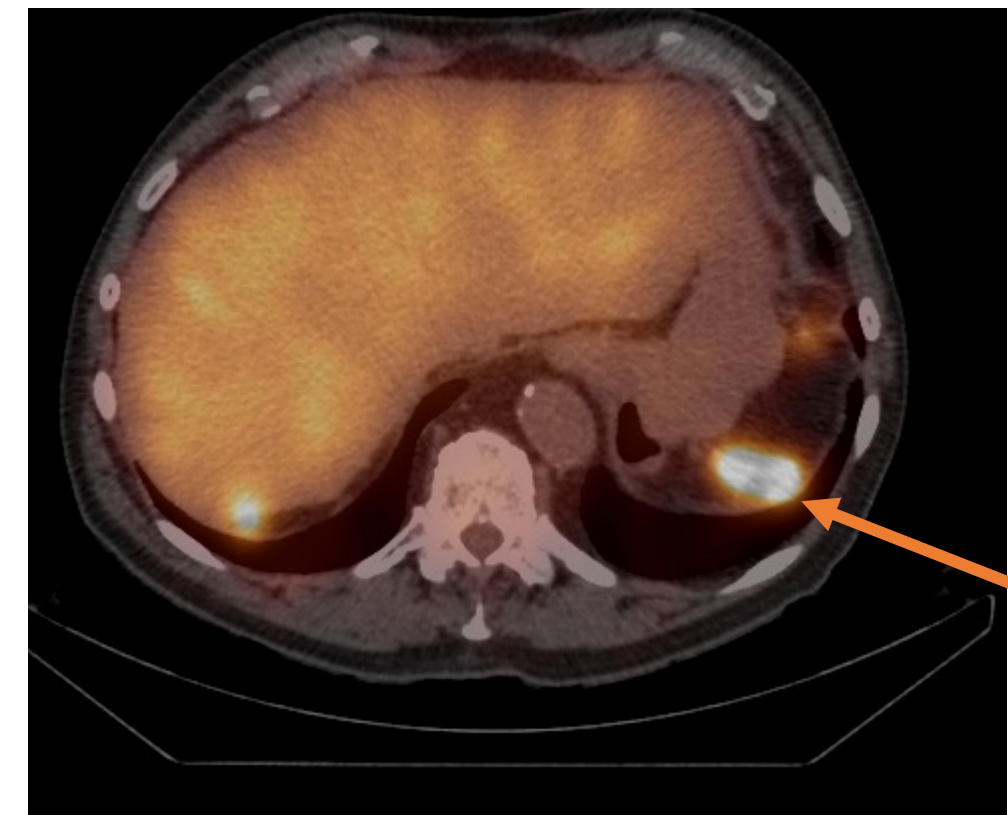
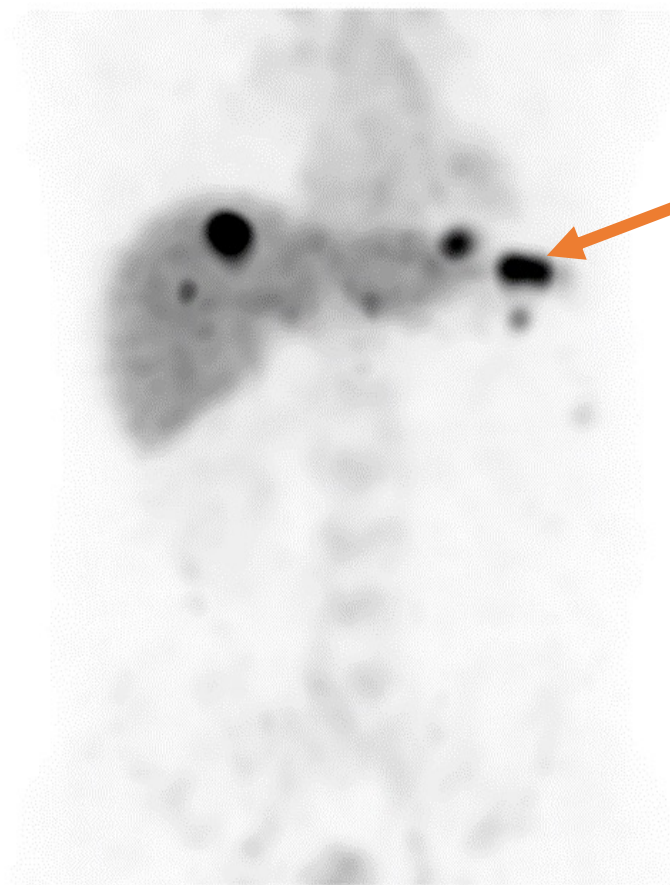
→ High uptake in the liver nodular lesion



Case presentation

Denatured red blood cell-Tc99m scintigraphy

→ Same intensity than the nodules in the **left hypochondrium** and detection of **additional nodules** not previously detected by MRI.



Case presentation

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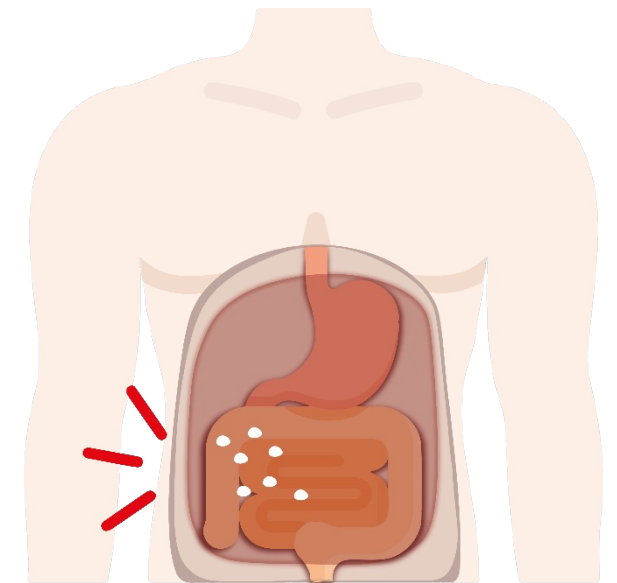


- The diagnosis of hepatocarcinoma was **excluded**
- Diagnosis of **splenosis** (intrahepatic and extrahepatic) was finally retained



Discussion

- **Splenosis** is an **heterotopic implantation** of splenic tissue initiated by **splenic rupture** in the context of trauma or surgery to the spleen.
- The true incidence of this condition is unknown. Usually an **incidental finding** at surgery, autopsy, or imaging. Splenosis reported in up to 67% **history of splenic trauma**.
- Patients are **usually asymptomatic**. But, occasionally spontaneous rupture with **massive bleeding** into body cavities or intestinal obstruction.
- Intrathoracic splenosis is **rare** but can occur in presence of coexisting injury to the diaphragm as single or multiple pleural-based masses.
- **Intrahepatic splenosis** can **mimic** HCC, adenoma, or other liver diseases, leading to unnecessary surgery or other invasive treatments.
 - **Absence of typical radiological features** with common imaging techniques, such as US, CT, and MRI → need more specific exams.



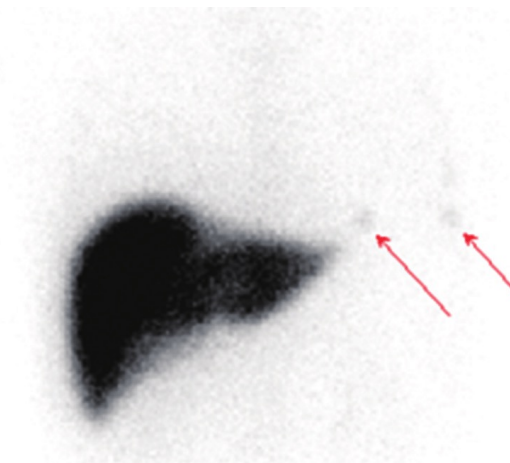
Normand JP, Rioux M, Dumont M, Bouchard G. Ultrasonographic features of abdominal ectopic splenic tissue. *Can Assoc Radiol J* 1993; 44:179-184

I. Feferman and J. Cramer, "Splenosis: an unusual cause of intraabdominal hemorrhage," *Journal of Emergency Medicine*, vol. 9, no. 4, pp. 239–240, 1991



Discussion

- **Scintigraphy** with technetium-99m labeled heat-denatured red blood cells (**Tc99m-DRBC**)
 - Considered the **gold standard** → Sensitivity 58%; Specificity 100%
 - Approximately more than **90%** of damaged erythrocytes will be trapped by splenic tissue.
 - Remarkable differences in uptake between intrahepatic splenic tissue and normal liver tissue.
 - May be used for radioguided surgery.
- Scintigraphy with **Sulfur Colloid-Tc99m**
 - another useful diagnostic exam, but has a **lower sensitivity** (26%).
 - The spleen receives only about **10%** of an injected dose of sulfur colloid.
 - Its identification of **intrahepatic** lesion is difficult.
 - Easy availability and easy to perform in any center.



Gunes, I.; Yilmazlar, T.; Sarikaya, I.; Akbunar, T.; Irgil, C. Scintigraphic detection of splenosis: Superiority of tomographic selective spleen scintigraphy. Clin. Radiol. 1994, 49, 115–117

Ekmekçi S, Diz-Küçükkaya R, Türkmen C, İdalet I. Selective Spleen Scintigraphy in the Evaluation of Accessory Spleen/Splenosis in Splenectomized/Nonsplenectomized Patients and the Contribution of SPECT Imaging. Molecular Imaging and Radionuclide Therapy 2015;24



Conclusion

- Intrahepatic lesions are very often a **challenging radiographic entity**.
- Scintigraphic exams can provide very valuable functional information:
 - Use of ^{99m}Tc -**colloid scintigraphy** : easily available and easier to perform in the laboratory.
 - ^{99m}Tc labelled **DRBC scintigraphy** → **superior** sensitivity and specificity.
- ^{99m}Tc labelled DRBC
 - Should be considered the **first choice test** in the diagnosis of splenosis.
 - Performed to any suspicious non-specific **abdominal lesion** in patients with a **history of splenectomy or trauma** to the spleen, to avoid unnecessary biopsies or surgery.





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Thank you very much

