

Hyperechogenic Liver Lesion

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Conflict of interests notification page for article Hyperechogenic Liver Lesion: "I undersign, certificate that I do not have any financial or personal relationships that might bias the content of this work."

ABSTRACT

Current paper focuses on an ultrasonography image representing a hyperechogenic liver lesion that appeared in less than a year time in a patient with clinical alarm signs. There are also described the steps for the final diagnosis, that proved to be geographical map steatosis and possible differential diagnoses together with brief literature correlations.

CLINICAL INFORMATION

This is a case of a 64 year old female patient, who was admitted with asthenia, chronic fatigue, palpitations, and anxiety. She was recently diagnosed with hyperthyroidism and she underwent an abdominal ultrasonography one year ago that showed no pathologic modifications. Clinical examination revealed no significant changes. Body mass index was 18.4 kg/m² and she lost about 6 kg during the last 3 months. Routine blood tests were in normal limits, including alpha-fetoprotein. Patient's medical history does not reveal any important data and by the time we performed the explorations she has not been taking any medications and had not yet received an endocrinological treatment.

Abdominal ultrasonogram (Figure 1) showed a hyperechogenic focal liver lesion in the 6th liver segment measuring about 2 cm in diameter, with irregular contour, without acoustic shadow or amplification. The entities we took into account were: lipoma, focal steatosis, secondary tumor, hemangioma. At Doppler exam and SonovueR contrast enhanced US exam there were no difference between the normal liver parenchyma and the lesion, as far as vascularization is concerned. We performed liver biopsy using Baard needle 1.2G, and the histopatologic report concluded that abundant fat was obvious inside the liver cells.

Conclusion: Focal liver steatosis (geographical map steatosis).

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FIGURE 1. Focal liver steatosis

Differential diagnoses of focal liver steatosis

Possible differential diagnoses are (1):

1. Liver lipoma - regulate contour, no hepatocytes, only fat cells at biopsy
2. Liver hemangioma - hyperechogenic lesion with posterior amplification, no vessel noticed at Doppler exam, particular pattern in contrast ultrasonography exam.
3. Secondary tumors- any ultrasound appearance, particular pattern in contrast enhanced ultrasonography, malignant cells at biopsy.
4. von Mayenburg complexes - usually many small hyperechogenic liver lesion, hamartomatous histologic structure.
5. Focal fibrosis- hyperechogenic lesions, conjunctive fibers abundantly seen after trichrome Manson staining.

Final clinical comments

- Liver steatosis may accompany various conditions and could have a diffuse or localized pattern (1). The localized pattern is noticed especially in diabetes mellitus, obesity, alcohol, chemotherapy, medication (valproic acid, amiodarone, methotrexate), chronic renal failure, intravenous alimentation and jejuno-ileal by-pass (2).
- The association of liver steatosis and hyperthyroidism is not a frequent issue in literature (3) although liver enzyme abnormality is reported up to 37% of these patients (4).
- The particularity of our case was the fact that the only change was a localized form of steatosis with no other paraclinic changes, besides the liver lesion appeared recently and had no typical appearance.
- We used a staged paraclinical diagnosis: first, the native and Doppler ultrasonogram showed an atypical liver lesion without obvious vascularization, recently appeared in a patient with recent weight loss; the second step was to assess the pattern in contrast enhanced ultrasound, and the pattern suggested that the area was normal liver tissue. Anyhow, we continued with histological investigation, having in mind that there are cases of secondary liver tumors when contrast enhanced ultrasound shows false negative results (5) and more than that, the lesion appeared in less than a year. On the other hand there are cases when steatosis surround secondary liver tumors and make them invisible to standard or contrast enhanced ultrasonography especially when they are very small (6).
- For all cases of atypical hyperechogenic liver lesions, especially when recently appeared, histology approach must be considered (1).

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