



ULTRASOUND AND COMPUTED TOMOGRAPHY IN LIVER HEMANGIOMAS

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Hemangioma is the most common benign tumor of the liver and has an incidence of 0,3-7,3% at autopsy (1-4). In most cases it is asymptomatic and its frequency of detection has increased the last 10-15 years with the advent of computed tomography (CT) and ultrasonography (US). When found, it may prove troublesome in differential diagnosis in both asymptomatic and symptomatic patients (especially those with history of malignancy). The purpose of this study was to compare the two most common methods for diagnostic imaging - CT and US concerning the diagnostic criteria and the algorithmic approach in more complicated cases.

During a 5-year period 29 patients (10 males and 19 females) with hepatic mass lesions were examined with US and the diagnosis of liver hemangioma (LH) was rendered. The US study was performed with a sector Aloka scanner with 3,5 and 5 MHz transducer. The diagnosis of LH was based on one of the following criteria: 1) solitary or multiple well-delineated echogenic masses of uniform echodensity; 2) hypoechoic mass with acoustic enhancement; 3) predominantly echogenic heterogeneous well-circumscribed mass with hypoechoic center; 4) lack of significant growth during the dynamic observation within the time. The number, size and location of the lesions was noted. Following the US all patients were examined with CT. The Siemens DRG scanner was used for CT evaluation. All patients were examined both without and with intravenous contrast medium enhancement. Each lesion was evaluated for the presence of the following features: 1) low density or unenhanced; 2) peripheral contrast enhancement in the initial 2-3 min following the bolus injection; 3) a delay of at least 3 min before total opacification; 4) progressive opacification from the periphery to the center, leading to full isodensity persisting on the delayed scans for at least 30 min. All patients had a US follow-up every 3rd month. In 6 selected patients because of equivocal criteria in one of the examining methods an angiography was performed and 7 patients underwent fine-needle aspiration biopsy (FNAB).

The most common US image was that of a hyperechoic, well-circumscribed homogeneous mass. Such US pattern was established

in 19 patients (65,5%). The size of the lesions varied from 2 to 7 cm and they were located mostly in the right lobe of the liver (13 patients). In 11 patients the tumors were solitary, in 4 - two lesions and in three - multiple (from 3 to 5). A 3 cm hypoechoic mass with acoustic enhancement located in the right lobe of the liver was found in 2 patients (6,9%). In 8 patients (27,6%) large, solitary, well-circumscribed, heterogeneous lesions with hypoechoic center were discovered with diameter ranging from 7 to 13 cm. In all of them because of equivocal US diagnosis additional diagnostic procedures were performed. The frequency of the different US appearances in our series is similar to that noted in the literature available (1-4). In CT examination most lesions showed the classical criteria for LH. In 6 patients with large, heterogeneous lesions CT diagnosis was unequivocal while in two ones CT features were suspicious for malignancy which necessitated additional diagnostic procedures. Our results from the CT evaluation comply with those of other authors (2-4). In 6 cases with larger lesions angiography was performed and the diagnosis LH was confirmed. Seven patients underwent FNAB. In 6 of them only blood was aspirated which is considered to be typical for LH (1,4). In one patient primary liver cancer was established. The CT pattern of this lesion was atypical for LH. On the US follow-up of the patients for a period of 1-5 years no change in the image or size of the lesions was noted except the patient with the malignancy.

In conclusion: 1) the classic US appearance of LH is that of a smooth bordered, homogeneous, echogenic mass less than 5 cm in diameter and when lesions with that pattern are encountered in asymptomatic patients with no change on the follow-up the diagnosis is considered undoubtable and no other diagnostic procedures are needed; 2) the heterogeneous forms of LH have US pattern similar to that of liver cancer and the US diagnosis is equivocal. In these cases CT examination is obligatory; 3) the typical CT image of LH includes a hypodense lesion with characteristic enhancement after bolus injection of contrast medium - the lesion is opacified peripherally followed by isodensity lasting for about 30-60 min; 4) the forms of LH that do not respond to the above mentioned CT and US criteria need additional diagnostic procedures such as angiography and/or FNAB.

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