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Abstract

The Role of Imaging for Characterization of Incidental Splenic Lesions

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Abstract

Background: With ever-increasing use of cross-sectional imaging, radiologists face with the challenge of characterizing incidental splenic lesions. Currently there is no guideline to manage these lesions. This study was conducted to characterize the incidental splenic lesions on cross-sectional imaging and to assess the role of various imaging factors to differentiate benign from malignant lesions.

Methods: This retrospective study was performed in a tertiary referral center. Data of patients with incidental spleen lesions in their cross sectional imaging were assessed. Over a course of three years, one hundred sixty one patients were included. Follow-up imaging was available in 122 individuals with mean (SD) follow-up time of 16.4 (16) months (ranged 1 - 96 months). Patients' demographic data, morphologic features and enhancement pattern on available CT scan and MRI were carefully reviewed and compared.

Results: Of 161 patients with splenic lesion [54% male, mean age (SD): 59.7 (15.4). ranged: 8-88 yr], 134 (83.2%) were solitary and 89 (55.3%) were subcapsular. Benign lesions were more likely to be homogenous (59.7% vs. 29.7%, P: 0.002). Ill define and lobulated borders had significantly higher prevalence in malignant lesions (73% vs. 53.2%, P: 0.03). Malignant lesions had significantly larger size (21.7 vs. 15.5 mm, P: 0.03). None of the benign lesions showed restricted diffusion in DWI/ADC, while 50% of malignant lesions had restriction (P: 0.003). Stable lesion size in follow-up imaging was strongly associated with benign nature of the lesion (86.2% vs. 11.4 $P < 0.001$). Lesion distribution, Hounsfield unit (HU) and enhancement pattern on imaging were not strong enough to differentiate benign from malignant lesions.

Conclusions: Small size, smooth lesion border and homogeneity favor benign nature of the incidental splenic lesions, while restricted diffusion might be a feature of malignancy. Follow-up imaging might be helpful in a subset of patients to discriminate benign and malignant incidental splenic lesions.

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