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Educational Abstract

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MRI Imaging Findings of Atypical Focal Nodular Hyperplasia

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Objectives

To determine the MR imaging findings of atypical Focal Nodular Hyperplasia (FNH)

To describe the varying enhancement patterns of atypical FNH in the hepatobiliary-phase of MRI with hepatocyte-specific contrast

Methods

The MRI findings of pathologically diagnosed FNH were retrospectively reviewed. The lesions were defined as atypical, as the imaging findings were not characteristic for FNH and the radiological diagnosis was uncertain, leading to biopsy or resection. Several MRI features of the lesions were documented including size, signal intensity on T1 and T2-weighted sequences, the presence of a central scar, diffusion restriction and enhancement pattern, with particular emphasis on the pattern of enhancement in the delayed hepatobiliary phase.

Results

The total number of lesions analysed was 19. 12 lesions were T1 hypo-intense, 3 were T1-isointense and 4 were T1 hypo-intense. 17 were T2 hyperintense and 2 were isointense. 16 lesions demonstrated hyperenhancement in the arterial phase and 3 were iso-enhancing. In the portal venous phase, 14 were hyper-enhancing, 3 were iso-enhancing and 2 were hypo-enhancing. 8 demonstrated restricted diffusion and 12 showed a central scar. In the hepatobiliary phase, 15 lesions appeared heterogeneous. 3 lesions were predominantly hyper-enhancing, 4 lesions were iso-enhancing and 12 lesions were predominantly hypo-enhancing. 9 of these 12 lesions demonstrated hypo-enhancement with a rim of hyperenhancement.

Conclusion

Atypical FNH demonstrated a variety of imaging appearances on MRI with hepatocyte-specific contrast. The most common pattern of enhancement in the delayed hepatobiliary phase was hypo-enhancement with a hyper-enhancing rim.