

Appendix 1 Gd-EOB-DTPA-enhanced MR protocol and analysis

The Gd-EOB-DTPA-enhanced MR images were obtained in a 3.0-T scanner. After an intravenous injection of 0.025 mmol/kg of gadoteric acid at a rate of 2 mL/s, we obtained images of arterial phase, portal venous phase, delayed phase and hepatobiliary phase (HBP) in 20–40s, 60–80s, 90–120s and 20min after contrast agent administration, respectively. The Gd-EOB-DTPA-enhanced MR scan and the conventional MR scan were performed within an interval of two weeks.

Enhancement on HBP images was assessed independently by an experienced abdominal radiologist (P.X. with 28 years of experience), and it was categorized into the following four patterns. (I) homogeneously hyperintense: homogeneously hyperintense except the scar; (II) heterogeneous hyperintense; (III) peripheral ring-like with hypointense central core; (IV) absence of enhancement. The guideline from the European Association for the Study of the Liver (EASL) for management of benign hepatocellular lesions were used for diagnostic confirmation of FNH (30).

References

30. Marrero JA, Ahn J, Rajender Reddy K; American College of Gastroenterology. ACG clinical guideline: the diagnosis and management of focal liver lesions. *Am J Gastroenterol* 2014;109:1328-47; quiz 1348.

Table S1 Demographic and MR features of FNHs between training and validation set

Variable	Training cohort (n=254)	Validation cohort (n=109)	P value
Age (years)	32.0 (27.0–41.3)	31.0 (27.0–38.0)	0.366
Male sex	145 (57.1)	53 (48.6)	0.138
Size (cm)	4.2±2.3	4.3±2.4	0.593
Hepatic steatosis	72 (28.3)	32 (29.4)	0.845
Intralesional fat	13 (5.1)	5 (4.6)	0.831
Morphology			0.424
Round	105 (41.3)	50 (45.9)	
Lobulated	149 (58.7)	59 (54.1)	
DWI			0.634
Isointense	26 (10.2)	13 (11.9)	
Hyperintense	228 (89.8)	96 (88.1)	
ADC ($\times 10^{-3}$ mm ² /s)	1.7±0.4	1.6±0.4	0.324
T1WI			0.792
Hypointense	129 (50.8)	57 (52.3)	
Isointense	125 (49.2)	52 (47.7)	
T2WI			0.069
Isointense	110 (43.3)	42 (38.5)	
Hyperintense	144 (56.7)	67 (61.5)	
Homogeneity on T2WI			0.511
Homogenous	195 (76.8)	87 (79.8)	
Heterogeneous	59 (23.2)	22 (20.2)	
Enhancing capsule	73 (28.7)	29 (26.6)	0.104
Central scar	174 (68.5)	72 (66.1)	0.647
Feeding artery	102 (40.2)	37 (33.9)	0.264
Radiating septa	156 (61.4)	61 (56.0)	0.331
Enhancement pattern			0.291
Hyper/hyper/hyper	88 (34.6)	46 (42.2)	
Hyper/hyper-iso/iso	160 (63.0)	62 (56.9)	
Hyper/hypo/hypo	6 (2.4)	1 (0.9)	

Data are presented as mean \pm standard deviation or number (%). MR, magnetic resonance; FNH, focal nodular hyperplasia; DWI, diffusion-weighted imaging; ADC, apparent diffusion coefficient; T1WI, T1-weighted imaging; T2WI, T2-weighted imaging; hyper, hyperintense; iso, isointense; hypo, hypointense.

Table S2 Interobserver agreement for MR imaging features

Imaging features	κ value
Size (≥ 3 cm/ < 3 cm)	0.905
Hepatic steatosis	0.883
Morphology (round/lobulated)	0.736
Enhancing capsule	0.635
DWI (isointense/hyperintense)	0.834
ADC ($\times 10^{-3}$ mm ² /s)	0.865
T1WI (hypointense/isointense)	0.838
T2WI (isointense/hyperintense)	0.766
Homogenous/heterogeneous	0.651
Central scar	0.802
Feeding artery	0.759
Radiating septa	0.816
Enhancement pattern (Hyper/hyper/hyper/Hyper/hyper-iso/iso/Hyper/hypo/hypo)	0.834

MR, magnetic resonance; DWI, Diffusion-weighted imaging; ADC, apparent diffusion coefficient; T1WI, T1-weighted imaging; T2WI, T2-weighted imaging; hyper, hyperintense; iso, isointense; hypo, hypointense.

Table S3 Enhancement pattern on hepatobiliary phase

Imaging features	≤ 3 cm (n=14)	> 3 cm (n=18)	P value
Enhancement pattern			0.014
Homogeneous hyperintense	2 (14.3)	7 (38.9)	
Heterogeneous hyperintense	3 (21.4)	9 (50.0)	
Peripheral ring-like with hypointense central core	7 (50.0)	2 (11.1)	
Absence of enhancement	2 (14.3)	0 (0)	

Data are presented as number (%).

Table S4 Diagnosis of FNH according to Gd-EOB-DTPA-enhanced MRI and scoring system

Variable	Scoring system (+)	Scoring system (-)	P value
Small FNHs			0.070
Gadoxetic acid-enhanced MRI (+)	4	7	
Gadoxetic acid-enhanced MRI (-)	1	2	
Large FNHs			0.500
Gadoxetic acid-enhanced MRI (+)	15	2	
Gadoxetic acid-enhanced MRI (-)	0	1	

FNH, focal nodular hyperplasia; Gd-EOB-DTPA, gadoxetic acid; MRI, magnetic resonance imaging.

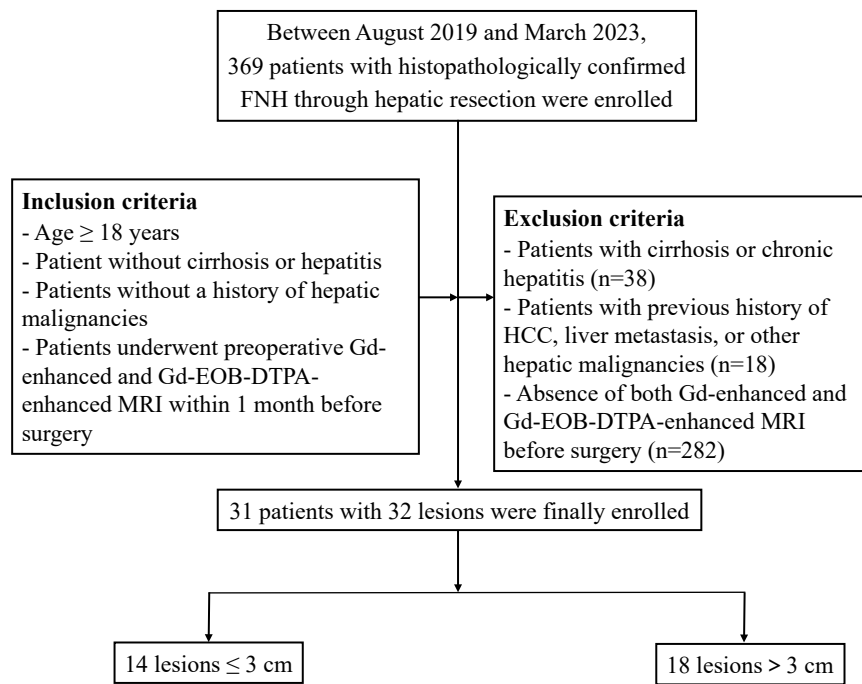


Figure S1 Flowchart of the population who underwent Gd-EOB-DTPA-enhanced MRI. FNH, focal nodular hyperplasia; Gd-EOB-DTPA, Gadoxetic acid; MRI, magnetic resonance imaging; HCC, hepatocellular carcinoma.