

가

: MR
 : 가
 : 65 MR
 : 35 , 30 , 35 12
 , 14 , 9 , 30 2
 , 10 , 18 . MR 73.8% (48)
 60.0% (21) , 90.0% (27)
 42.9% (6) , 79.2% (19) , 85.2% (23)
 . MR 가
 54.2% , (81.5%) (19.0%)
 66.7%
 (96.3%) (28.6%)
 82.6% , 83.3% , 94.7% , 82.6%
 (Table 3).

: MR
 가 2% (4),
 8.8%-31%
 (1, 2).
 MR
 2.6-26%
 (3).

가
 1992 7 98 7 MR
 1000 1- 65 가 MR 2
 1999 10 4 2000 3 30 25-75 (42.3)

가

(33),

(19), (7), (3),

(1), (1) , 1

65 44 0.5 Tesla (Gyroscan T5, Philips, DA Best, Netherland) MR , 21 1.5 Tesla (Ma-gnetom Vision, Siemens, Erlangen, Germany) . T2

가 ,

가 가 .

MR T2

가 7 mm

50% , 50%

1/3 (mild), 1/3-2/3 (moderate), 2/3 (severe)

(48)

12 , 35 , 30 , 35 , 14 , 9 , 30

Table 1. Number from Extent and Depth of Myometrial Invasion of Adenomyosis

Pathology	Diffuse	Focal
Mild	2	12
Moderate	10	14
Severe	18	9
Total	30	35

Table 2. Detection Rate from Extent and Depth of Myometrial Invasion of Adenomyosis

	Extent of Myometrial Invasion		Depth of Myometrial Invasion		
	Diffuse	focal	Mild	Moderate	Severe
Detection No.*	27	21	6	19	23
Total No.*	35	30	14	24	27
Detection rate	90.0%	60.0%	42.9%	79.2%	85.2%

No.*:Number

가

2 , 10 , 18

(Table 1).

MR 48 (73.8%)

30 21 (60.0%)

35 27 (90.0%)

14 6 (42.9%),

24 19 (79.2%), 27 23 (85.2%)

(Table 2).

MR 48

(Fig. 1) 26

(Fig. 2) 81.5% (22/27)

(Fig. 3) 19.0% (4/21)

100.0%,

88.9%, 76.5%, 20.0%,

20.0%, 16.7%

가 32

(66.7%) , 96.3% (26/27)

28.6% (6/21)

가

42 (82.6%) , 83.3% (5/6),

94.7% (18/19), 82.6% (19/23)



Fig. 1. Forty-seven-year old patient with diffuse and severe adenomyosis.

Sagittal T2-weighted image shows extensive low-signal-intensity (arrows) lesion in the anterior and posterior wall of the uterus. Several higher signal intensity foci are seen in the lesion and which show similar signal intensity to those of endometrium. Preoperative MR finding was correspond to pathologic finding both in the extent and depth of myometrial invasion.

(Table 3).

(5).

가

가

가

(5).

mm

(3).

가

가

(6).

, 1
60-80%

가

35-50%,

(5).

가
6-20%

가

(7).

Table 3. Correlation Between MR and Pathologic Findings about the Extent and Depth of Myometrial Invasion

MRI	Pathology	Diffuse			Focal			Total
		Mild	Moderate	Severe	Mild	Moderate	Severe	
Diffuse	Mild	1	1	0	3	0	0	5
	Moderate	0	8	3	0	8	0	19
	Severe	0	0	13	0	0	4	17
Focal	Mild	0	0	0	1	0	0	1
	Moderate	0	0	0	1	2	1	4
	Severe	0	0	1	0	0	1	2
Total		1	9	17	5	10	6	48



Fig. 2. Thirty seven-year-old patient with diffuse and mild adenomyosis. Sagittal T2-weighted MR image shows diffuse, relatively regular thickening of the junctional zone (arrow heads; maximum thickness, 9 mm). Preoperative MR finding was correspond to pathologic finding both in the extent and depth of myometrial invasion.



Fig. 3. Forty-year-old patient with focal severe adenomyosis. Abnormal low signal intensity lesion (*) with multiple high signal foci is seen in posterior wall of uterus which involves full depth of myometrium on T2-weighted sagittal image. Preoperative MR diagnosis was diffuse severe adenomyosis, so the MR finding was not correspond to pathologic finding in the evaluation of the extent of myometrial invasion.

가 , 가 , 가
 12 mm (8) , 5mm 7 mm 가 10 mm (9) 가 McCausland (10) (endometrial ablation)

(8). 가

가 , 가 (7). MR

(9), 가 가 가 가

(7).

(11)

가

가 가

가

가 , 가

MR

가 , 가

1 cm

가 가

가

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Assessment of the Depth and Extent of Myometrial Invasion in Uterine Adenomyosis Using MRI¹

Mi Gyung Yi, M.D., Jae Ho Cho, M.D., Jay Chun Chang, M.D. Bok Hwan Park, M.D.

¹Department of Diagnostic Radiology, School of Medicine, Yeungnam University

Purpose: To determine the detection rate of MRI in the diagnosis of adenomyosis and ascertain the accuracy of MRI in assessing the extent and depth of the myometrial invasion.

Materials and Methods: By retrospective analysis of MR images of the pelvis in 65 pathologically proven cases of uterine adenomyosis, we investigated the detection rate and differences of in the detection rate when this was based on (a) the extent, and (b) the depth of myometrial invasion. The condition was classified as diffuse or focal according to the extent of invasion, and mild, moderate, or severe according to its depth.

Results: Pathologically, there were 35 cases of focal adenomyosis (53.8%), and 30 of diffuse adenomyosis (46.2%). Among patients with the focal variety of this condition, 12 cases were mild, 14 were moderate, and nine were severe, while among those with the diffuse variety, two were mild, ten were moderate and 18 were severe. A total of 48 cases (73.8%) were detected on MR images; the detection rate of focal adenomyosis was 60.0% (21/35) and that of diffuse adenomyosis was 90.0% (27/30). The detection rates of mild, moderate, and severe adenomyosis were 42.9%(6/14), 79.2%(19/24), and 85.2% (23/27), respectively. Among the 48 cases detected on MR images, the pathologic and MR findings were consistent with regard to both the extent and depth of myometrial invasion in 26(54.2%). For diffuse adenomyosis, the consistency rate was higher than for the focal variety (81.5%, 22/27; compared with 19%, 4/21). The extent of myometrial invasion was correctly evaluated in 32 cases (66.7%); the consistency rate for the diffuse form was higher than for the focal form [96.3% (26/27), compared with 28.6% (6/21)]. In 42 cases (87.5%), the depth of invasion was correctly evaluated, though differences in this depth were not significant.

Conclusion: MR imaging was a useful imaging modality in the diagnosis of uterine adenomyosis. With regard to the extent of myometrial invasion, the detection rate was higher among cases of the diffuse form than of the focal form, and with regard to depth, the rate was higher among moderate and severe cases than among mild ones. These findings may be useful for preoperative diagnosis based on clinical symptoms, and provide important yardstick for decisions as to whether hysterectomy should be replaced by an alternative therapy.

Index words : Uterus, MRI
Uterus, abnormalities
Uterus, myometrium

Address reprint requests to : Jae Ho Cho, M.D., Department of Diagnostic Radiology, School of Medicine, Yeungnam University, 317-1, Daemyungdong, Namgu, Taegu, 705-717, Korea.
Tel. 82-53-620-3043 Fax. 82-53-653-5484 E-mail: jhcho@medical.yeungnam.ac.kr

