

# A retrospective study of surgically treated 32 ovarian endometrioma with preoperative suspicion of ovarian malignancy

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## Summary

### 【Objective】

The differential diagnosis between ovarian endometrioma (EM) and ovarian malignancy is important in determining the therapeutic strategy. MRI is commonly used for the diagnosis, and although the presence of contrast-enhanced nodules is characteristic of malignancy, their specificity is not clear. This study aimed to clarify the characteristics of cases in which malignancy was suspected by preoperative MRI but the postoperative diagnosis was EM.

### 【Material and Methods】

Under IRB approval, we retrospectively reviewed 32 patients who underwent surgery with a diagnosis of malignancy but were diagnosed with EM on postoperative pathology between 2015 and 2020. In particular, preoperative MRI findings were compared with the intraoperative findings.

### 【Results】

The mean age of the patients was  $40.6 \pm 1.3$  years. The mean size of the tumors was  $68.5 \pm 17.2$  mm. Malignancy was suspected due to the presence of nodules in 24 (75%), thickening of the cyst wall 3 (9%), and increase in tumor size in 12 (38%). Among the nodal shadows, contrast-enhanced MRI nodules were 10 cases; the median nodal size was 10 mm, and FDG-PET showed an accumulation consistent with a nodule in only 3 cases, with a median SUVmax of 3.5. Surprisingly, none of MRI-detected nodules ( $n=24$ ) were identified as macroscopic nodules in the resected specimen. Patients with MRI-detected nodules had severe endometriosis with a mean rASRM score of  $60.3 \pm 10.5$ . In addition, all MRI-detected nodules were presented in dense adhesion areas.

### 【Conclusion】

This study revealed that in patients with severe endometriosis, peri-ovarian adhesion may be depicted as "pseudo-nodules" on MRI. Further research are warranted to distinguish this "pseudo-nodules" from true nodules. And even endometriotic cysts with nodules on MRI with contrast effect often do not actually show nodules, suggesting that contrast-enhanced MRI and FDG-PET are useful in differentiating them.

## Introduction

The differential diagnosis between ovarian endometrioma (EM) and ovarian malignancy is important in determining the therapeutic strategy. MRI is commonly used for the diagnosis, and although the presence of contrast-enhanced nodules is characteristic of malignancy, their specificity is not clear. This study aimed to clarify the characteristics of cases in which malignancy was suspected by preoperative MRI but the postoperative diagnosis was EM.

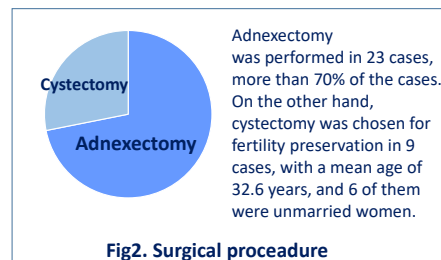
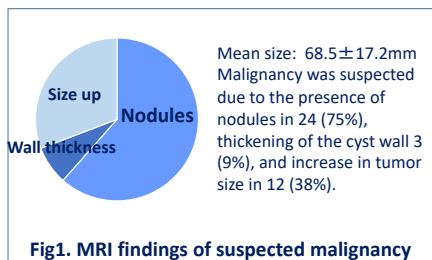
## Materials and Methods

- 32 patients who underwent surgery with a diagnosis of malignancy but were diagnosed with EM on postoperative pathology between 2015 and 2020
- There were 20 unmarried cases and more than 60% of them were unmarried and may wish to raise a child in the future.
- About 22% of the women were undergoing infertility treatment.

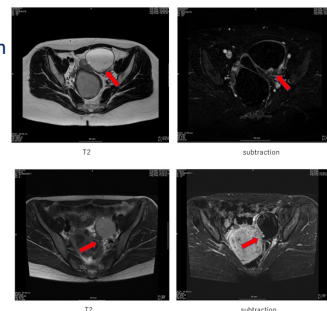
Table1. Characteristic of 32 cases

Age (mean ± SD)	40.6 ± 7.9	
Gravid (Average)	0 (0-2)	
Para (Average)	0 (0-1)	
Married	12	
Fertility treatment	6	(WF 5/ general 1)
PID	5	
Dysmenorrhea	20	

## Results



- Among the nodal shadows, contrast-enhanced MRI nodules were 10 cases; the median nodal size was 10 mm
- FDG-PET showed an accumulation consistent with a nodule in only 3 cases, with a median SUVmax of 3.5.
- Surprisingly, none of MRI-detected nodules ( $n=24$ ) were identified as macroscopic nodules in the resected specimen.
- Patients with MRI-detected nodules had severe endometriosis with a mean rASRM score of  $60.3 \pm 10.5$ . In addition, all MRI-detected nodules were presented in dense adhesion areas.



**Fig3. Features of the contrast-enhanced MRI nodules**

## Conclusion

This study revealed that in patients with severe endometriosis, peri-ovarian adhesion may be depicted as "pseudo-nodules" on MRI. Further research are warranted to distinguish this "pseudo-nodules" from true nodules. And even endometriotic cysts with nodules on MRI with contrast effect often do not actually show nodules, suggesting that contrast-enhanced MRI and FDG-PET are useful in differentiating them.