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Case Report

# Polypoid endometriosis in a young woman: a case report and review of literature

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**Summary**

The authors report a case of polypoid endometriosis (PE) in a young woman. In addition, they review the PE cases in patients under 40 years of age. A 34-year-old nulliparous presented with a vaginal polyp protruding from the posterior vaginal fornix and a boundary ambiguous mass located at Douglas' pouch from the vaginal wall to the rectum, suggesting advanced malignancy. Because an intraoperative frozen section examination showed no evidence of malignancy, the authors opted for conservative management with administration of GnRH agonist once a month for six months followed by dienogest. MRI revealed marked improvement after the third administration of GnRH agonist. Including the present case, the authors identified 13 patients under 40 years old with PE. The notable macroscopic finding of PE was vaginal polyp formed by a protruded pelvic mass. The immunohistochemistry findings and a marked effect of GnRH agonist in the present case suggest the etiology of PE was related to estrogen stimulation.

*Key word:* Polypoid endometriosis; Vaginal polyp; Gonadotropin releasing hormone agonist; Endometriosis.

## Introduction

Endometriosis is one of the most common gynecological estrogen-dependent diseases which occur in 10% of women of reproductive age [1]. Polypoid endometriosis (PE) is a rare manifestation of endometriosis with histologic features simulating endometrial polyp. PE is sometimes mistaken for a neoplasm because of its similarity in clinical findings, and preoperative and intraoperative image findings. The misdiagnosis can lead to extended surgery which has a risk of loss of fertility.

A previous study reported that PE often occurred at postmenopausal age [2]. On the other hand, little is known about the details of the clinical course and management for PE in reproductive age.

Here, the authors present a case of PE mimicking pelvic carcinoma, occurring in a patient of young age, in whom intraoperative frozen section diagnosis prevented the loss of fertility. The authors also reviewed other PE cases that occurred in patients of young age under 40 years of age.

## Case Report

A 34-year-old Japanese female, para 0, presented with asymptomatic abnormal macroscopic findings in the uterine cervix. She had a regular menstrual cycle and had had slight dysmenorrhea for five years. She had not received any medical treatment until presentation at the hospital. On physical examination, a vaginal polyp was observed protruding from the posterior vaginal fornix (Figure 1A); biopsy of the polyp showed no abnormal findings. MRI of the pelvis revealed a poorly defined mass of 6 cm in the

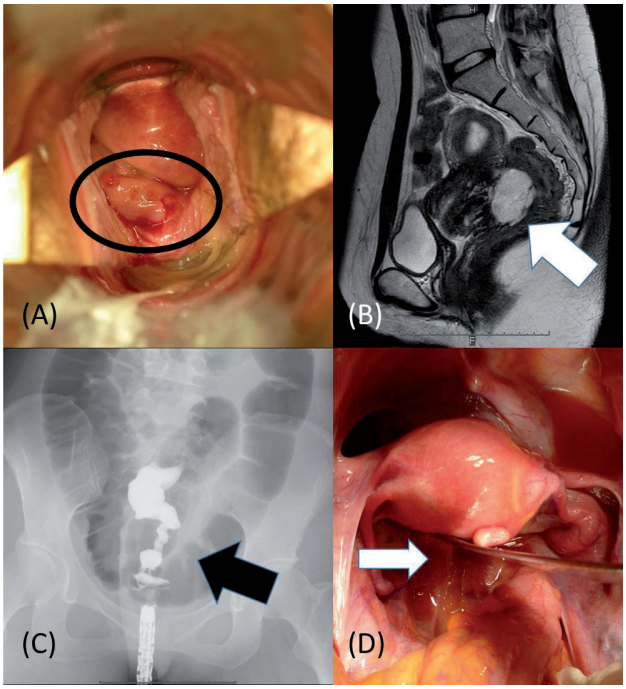


Figure 1. — Macroscopic findings and MRI of the pelvis before treatment. A) The polyp is protruding from the posterior vaginal fornix (circle). B) Sagittal T2 weighted MRI show a hyper-intense signal mass located at Douglas' pouch extending from the posterior vaginal wall to the rectum (arrow). C) 'Apple-core' stenosis by barium enema examination. D) Intraoperative image. The mass arises at the Douglas pouch (arrow), and involves uterine cervix, rectum, and bilateral cardinal ligament.

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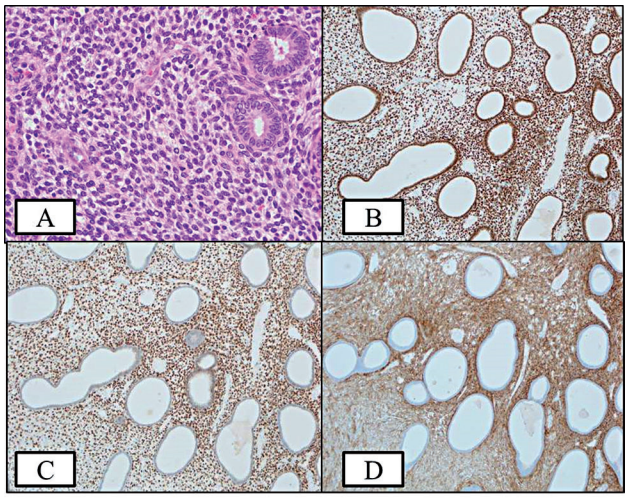


Figure 2. — Histologic and immunohistochemical images of resected tissue. A) The tissue is composed of irregularly expanding glandular epithelial cells and condensation of endometrial stromal cells; Hematoxylin and Eosin stain, original magnification × 400. B) Glandular and stromal cells are positive for estrogen receptor. C) Glandular and stromal cells are positive for progesterone receptor. D) Stromal cells are positive for CD10, whereas glandular cells were negative.

greatest diameter located in Douglas' pouch, and extending along the vaginal wall to the rectum (Figure 1B). The mass showed an isointense signal on T1-weighted images and a high signal on T2-weighted images Diffusion weighted images also showed high signal intensity. Barium enema examination revealed circumferential apple-core stenosis around the rectum, above the peritoneal reflection (Figure 1C). The patient's serum level of cancer antigen 125 was elevated at 363 U/ml. Based on these data, the patient was strongly suspected of having advanced cervical cancer. The patient hoped for her fertility to be preserved; therefore, the authors decided to perform laparotomy with intraoperative pathological examination.

At laparotomy, reduced mobility of the uterus due to expanded Douglas' pouch mass involving uterine cervix, rectum, and bilateral cardinal ligament was observed (Figure 1D). Intraoperative frozen section examination indicated that the lesion was endometriosis, with no evidence of malignancy; thus, it was decided that no further surgical treatment would be performed.

The microscopic findings (Figure 2A) of the formalin-fixed paraffin-embedded tissue section from the Douglas' pouch consisted of irregularly-expanding columnar glandular cells and endometrial stroma cells. The ratio of the stroma cells to glandular cells varied from 1:1 to 1:3, and no atypia was observed in the glandular cells. Condensation of the endometrial stroma cells was accompanied by mild atypical cells.

Immunohistochemistry was performed using an estrogen receptor (ER), a progesterone receptor (PR), and CD10. The glandular cells and stroma cells were positive for ER and PR. However, the stroma cells were positive for CD10 whereas the gland cells were negative for CD10 (Figure 2 B-D).

After histological examination, the diagnosis of PE was confirmed. As postoperative therapy, the authors administered dienogest subsequent to monthly administration of GnRH agonist to prevent recurrence of PE.

MRI revealed marked improvement when the third administration of GnRH agonist was completed.

## Discussion

First reported by Mostoufizadeh and Scully in 1980, PE is an uncommon and distinctive variant of endometriosis, simulating an endometrial polyp [3]. PE usually occurs in postmenopausal women in the female reproductive organs (cervix, vagina, fallopian tubes, and ovaries), omentum, ureters, bladder, as well as paraurethral and paravaginal soft tissue [2]. Similar to endometriosis, PE usually causes nonspecific symptoms that are associated with abdominopelvic mass, such as dysmenorrhea, menorrhagia, or vaginal spotting [2, 4, 5].

The MRI features of PE remain unclear. The histological features are thought to resemble those of endometriosis polyps [3]; thus, it is possible that the MRI features resemble those of an endometriosis polyp, depending on the PE's internal structure. Some authors have reported polypoid masses with T2 hypointensity [6, 7], which is consistent with the findings of fibrous tissue observed in endometriosis. The apple-core stenosis sign in the colon can be caused by several diseases, and is most frequently associated with colorectal carcinoma. To the best of the present authors' knowledge, the present case report is the first of PE accompanied by apple core stenosis sign in the colon, indicating a suspected malignancy.

It has been reported that PE exhibits several histological patterns, including simple hyperplasia, complex hyperplasia, and complex hyperplasia with and without atypia [2]. Furthermore, several types of epithelial metaplasia, including tubal, mucinous, and squamous, also have been reported [2]. In the current case, a differential diagnosis including adenosarcoma was important. Typically, a diagnosis of adenosarcoma is made when proliferation of endometrial glandular and stroma cells, condensation of stroma cells, stroma cells with cytologic atypia, and mitosis in stroma cells, are observed. The diagnosis of PE in the current case was made based on the pathological findings of mild atypia and no evidence of mitosis.

Based on preoperative findings, PE may be mistaken for neoplasm on clinical and intraoperative assessment, which may lead to extensive surgery. Unlike previous reports [2], the present patient was at young age, indicating that preservation of the patient's fertility needs to be taken into consideration. However, little is known about the clinical features, including medical treatment, of PE in reproductive age. Therefore, the present authors reviewed the previously reported cases of PE in this age range [2, 4, 8-14]. Using PubMed, the authors identified 13 patients with PE, including the current patient, under the age of 40 (range 23–39 years; average, 29.6 years) (Table 1). They found that the most commonly observed symptoms in these patients were abdominal pain, dysmenorrhea, and abnormal

Table 1. — *Clinical features of patients with polypoid endometriosis at reproductive age.*

| Case No. (ref No.) | Age | Parous | Clinical presentation | Site | Vaginal polyp | Protruding vagina | Suspected malignancy before surgery | Intra-operative frozen section | Operative procedure | Post-operative therapy | Immunohistology |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 (4) | 26 | NM | Menorrhagia | Pelvis, vagina | Yes | + | Confirmed PE before surgery | No | TV-TR | NM | NM |
| 2 (2) | 34 | NM | Pelvic mass | Retroperitoneum | NM | | NM | NM | TR + portion of sigmoid | NM | NM |
| 3 (2) | 39 | NM | Pelvic mass | Pelvis | NM | | NM | NM | Sigmoid resection, myomectomy | NM | NM |
| 4 (2) | 23 | NM | Abdominal pain | Pelvis | NM | | NM | NM | Aspiration of cyst content and partial excision; LSO | NM | NM |
| 5 (8) | 33 | Nullipara | Lower abdominal pain | Ovary | No | | Malignancy | None | LSO by laparotomy | NM | ER: Gland, PR: Gland, CD10: Stroma |
| 6 (11) | 27 | Nullipara | Abdominal pain, genital bleeding | Pelvis, vagina | Yes | + | Malignancy | None | TR by laparotomy | GnRH | NM |
| 7 (9) | 29 | Nullipara | Hematuria | Bladder | No | | Malignancy | None | TR by laparotomy | NM | NM |
| 8 (10) | 25 | Nullipara | Genital bleeding | Vagina | Yes | NM | NM | No | TV-TR | NM | NM |
| 9 (8) | 27 | Nullipara | Abdominal pain, genital bleeding | Pelvis, vagina | Yes | + | Confirmed PE before surgery | No | Myomectomy TV-PR | GnRH→OC | ER: Gland, PR: Gland, CD10: Stroma |
| 10 (14) | 29 | Nullipara | Dysmenorrhea | Ovary | No | | Malignancy | Yes | TR and LSO by laparotomy | Dienogest | NM |
| 11 (12) | 29 | Nullipara | Genital bleeding, menorrhagia | Uterine cervix | Cervical polyp | | Malignancy | No | TV-TR | NM | ER: Gland, PR: Gland, CD10: Stroma, Ki67 <2% in stroma |
| 12 (13) | 30 | Nullipara | Nothing | Left adnexa | No | | Malignancy | Yes | Laparoscopic LSO | NM | ER: Gland, stroma; PR: Gland, stroma; CD10: Stroma |
| 13 (our case) | 34 | Nullipara | Dysmenorrhea | Pelvis, vagina | Yes | + | Malignancy | Yes | TR by laparotomy | GnRH→dienogest | ER: Gland, stroma; PR: Gland, stroma CD10: Stroma |

PE: Polypoid endometriosis, NM: Not mentioned, TV: Trans-vaginal operation, TR: Tumor resection, LSO: Left salpingo-oophorectomy, OC: Oral contraceptive, GnRHa: Gonadotropin-releasing hormone agonist, ER: Estrogen receptor, PR: Progesterone receptor.

genital bleeding, as well as symptoms typical of endometriosis. All patients were nulliparous women; Case 7 was pregnant at the time of diagnosis. The pelvis (n=6) and vagina (n=5) were the most common sites at which PE occurred. In the present case, the vaginal polyp was one of the notable findings, as it is a variant type of endometriosis. Including this case, there are five reported cases of vaginal polyp. In four of these cases, the polyps were formed as a result of protruded pelvic mass. As all patients were of reproductive age and were nulliparous, the differential diagnosis of malignancy was important in order to prevent extensive surgery, which would caused loss of fertility. Of the 13 cases, seven were suspected to be neoplasms based on preoperative or intraoperative findings. In addition, intraoperative frozen diagnosis was made in three of the seven cases because of suspected malignancy. In all three cases, this diagnostic method prevented the need for extensive surgery. In the remaining ten patients, fertility was also unaffected.

As postoperative therapy, the present patient underwent maintenance therapy with oral contraception after GnRH agonist, which is a common treatment strategy [15] to prevent recurrence of endometriosis-related diseases. In this review, the authors identified postoperative therapy in three cases, in which no recurrence was reported. Case 6 received GnRH agonist only. Case 10 was treated by administration of oral contraceptive medication. Case 9 was treated with oral contraceptive medication, subsequent to monthly administration of GnRH agonist, for three months, causing a significant reduction in the size of her vaginal polyp.

The etiology of PE remains unknown. Previous studies have described the estrogen stimulation in the developing PE [2, 4, 5, 16, 17], similar to that in endometriosis. Some studies have reported that PE occurs because of rebound phenomenon of withdrawal from a GnRH agonist [4, 18] or oral contraceptive therapy [13]. To investigate these spec-

ulations on the etiology of PE, they also reviewed the immunohistochemistry findings of five PE cases, including the present case (Table1). Glandular cells were positive for ER in all cases, and stroma cells were positive for ER in two of the five cases. Additionally, glandular cells were positive for PR in all five cases, and stroma cells were positive for PR in two of the five cases. Stroma cells were positive for CD10 in all five cases. The authors decided to use GnRH agonist immediately followed by oral dienogest to reduce exposure to estrogen. To the best of the present authors' knowledge, this is the first case report of the use of six courses of monthly GnRH agonist and oral dienogest as a postoperative treatment for PE in a female patient of young age.

In conclusion, PE could involve several organs, be misdiagnosed as a neoplasm, and occur even in young age. However, its clinical features indicate endometriosis. This report illustrates the importance of the awareness of variant types of endometriosis mimicking neoplasms to prevent extensive surgery that would result in the loss of the patients' fertility.

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