



Case report

Inguinal endometriosis with a disappearing mass preoperatively: A case report

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ABSTRACT

Introduction: Endometriosis is a common gynecological disease that affects approximately 10% of reproductive-age women. Inguinal endometriosis is uncommon, affecting only 0.6% of all patients with endometriosis. We present a case of inguinal endometriosis with a disappearing mass preoperatively.

Presentation of case: A 44-year-old woman presented with a palpable mass and pain in her left inguinal region. Computed tomography showed a 20-mm mass near the pubic tubercle. After 2 months of observation, the mass became impalpable and could not be confirmed by computed tomography; however, the inguinal pain did not improve regardless of menstrual cycles. Resection of the inguinal mass and the entire extraperitoneal portion of the uterine round ligament was performed. Histopathological examination revealed endometrial glands and stroma with CD10-positive cells, which confirmed inguinal endometriosis diagnosis. Erythrophagocytic macrophages indicated endometriosis-related hematoma absorption. Her symptoms disappeared after surgery, and no postoperative complications occurred.

Discussion: For treating inguinal endometriosis, the complete removal of the mass and the entire extraperitoneal portion of the round ligament by an anterior approach is necessary to prevent postoperative residual symptoms and recurrence. However, the preoperative diagnosis of inguinal endometriosis remains a challenge and is frequently discovered incidentally by intraoperative findings and pathological examination.

Conclusion: Clinicians should have a high suspicion of inguinal endometriosis and improved diagnostic precision to select the appropriate surgical approach. Regardless of menstrual variability, the feature of a decreased mass size caused by endometriosis-related hematoma absorption can serve as a preoperative diagnostic clue.

1. Introduction

Endometriosis results in ectopic endometrial tissue outside the uterine cavity [1]. It is a common gynecological disease that affects approximately 10% of reproductive-age women, and approximately 190 million women worldwide are estimated to suffer from it [1]. The main predilection sites of occurrence are the pelvic peritoneum and ovary; however, endometriosis in the inguinal region is rare, affecting approximately 0.6% of endometriosis patients [2]. Inguinal endometriosis is relatively unknown and tends to be overlooked in clinical practice. Here, we present an unusual case of left inguinal endometriosis with a disappearing mass preoperatively. The work was reported in line with the SCARE 2020 criteria [3].

2. Presentation of case

A 44-year-old woman with a left inguinal mass and intermittent pain presented to our department. The patient only had a history of asthma. Physical examination revealed a palpable elastic hard tender mass without skin discoloration in the left inguinal region. Blood chemistry findings were all within normal limits. Computed tomography (CT) revealed a 20-mm mass near the left edge of the pubic tubercle without continuity to an abdominal cavity (Fig. 1a arrow). The CT density value was 60 HU. After 2 months of observation, the inguinal mass became impalpable. It could not be accurately confirmed even by CT because it remarkably regressed (Fig. 1b). However, the inguinal pain did not improve. Because the mass without continuity to the abdominal cavity had a higher density than a hydrocele and was shrinking in CT findings, inguinal endometriosis or an inflammatory reaction of an inguinal lymph node was suspected as the preoperative diagnosis. The patient

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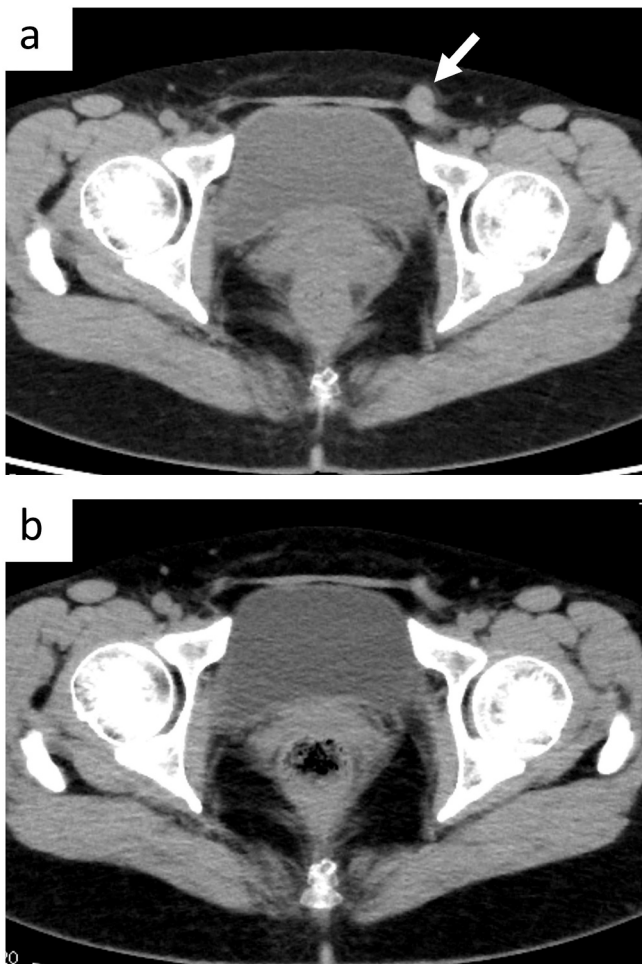


Fig. 1. Preoperative computed tomography images. (a) A 20-mm mass in the inguinal region (arrow). (b) The disappearance of the inguinal mass after 2 months of observation.

received surgery for diagnostic treatment. A 5-cm incision was made along the external oblique aponeurosis that constituted the anterior surface of the inguinal canal. The intraoperative finding identified a 5-mm-sized whitish flattened mass adherent to the uterine round ligament near the pubic tubercle (Fig. 2 arrow). Resection of the inguinal

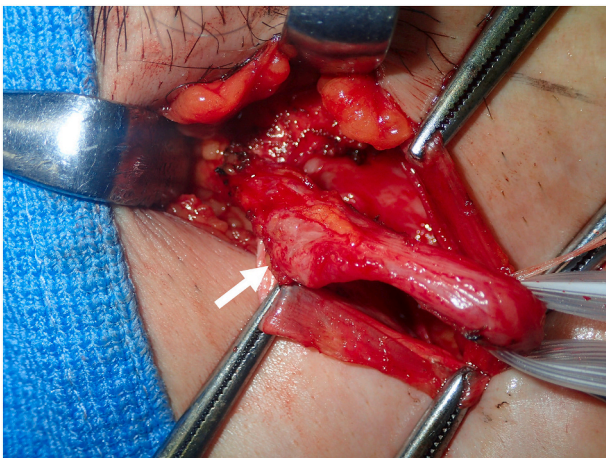


Fig. 2. Intraoperative findings. A 5-mm-sized white flattened mass adherent to the uterine round ligament near the pubic tubercle (arrow).

mass and the entire extraperitoneal portion of the uterine round ligament was performed. Histopathological examination revealed endometrial glands of various sizes and stroma with CD10-positive cells (Fig. 3). These findings confirmed a diagnosis of inguinal endometriosis. Further, histopathological examination revealed that erythrocytes were phagocytized by macrophages, and thus, the preoperative mass regression was caused by absorption of endometriosis-related hematoma. The patient retrospectively reported that the inguinal pain had not coincided with her menstrual cycles. No postoperative complications occurred and her symptoms disappeared after surgery.

3. Discussion

Endometriosis can occur in almost any organ system, although most are present in the pelvis. Extrapelvic endometriosis, which includes the gastrointestinal tract, thoracic cavity, abdominal wall, and inguinal canal, is rare compared with intrapelvic endometriosis [4–6]. The localization and not the size of these lesions affect the symptoms [7]. The main manifestations of inguinal endometriosis are palpable mass and pain [2]. The symptoms worsen during the menstrual period in 50% of the patients due to functional ectopic endometrial tissue [8,9]. As with thoracic endometriosis, inguinal endometriosis has the characteristic of the right-sided lesion, i.e., affecting approximately 90% of the patients [2,5]. Regarding pathogenesis of the endometriosis, some hypotheses such as implantation at ectopic sites, coelomic metaplasia, or the vascular and lymphatic metastasis have been proposed [10]. Our case exhibited left-sided inguinal endometriosis unrelated to the patient's menstrual cycles, an unusual presentation.

Inguinal endometriosis needs to be preoperatively distinguished from inguinal hernia; hydrocele of the canal of Nuck; lymphadenopathy; and tumors such as lipoma, neuroma, lymphoma, and cancer because accurate preoperative diagnosis results in the selection of an appropriate surgical approach [11]. Imaging examinations, primarily CT, are used for differential diagnosis; however, the diagnosis of inguinal endometriosis remains a challenge and is frequently discovered incidentally by intraoperative findings and pathological examination. Because no specific features of inguinal endometriosis exist in imaging examinations, differential diagnosis based on imaging results should be combined with a careful review of the patient's history of cyclic menstrual pain associated with inguinal mass [2,6,11]. The diagnosis is more difficult in patients without a typical presentation with menstrual variability. Consequently, histopathological examination is crucial for a definitive diagnosis. Although some reports suggest that fine-needle aspiration

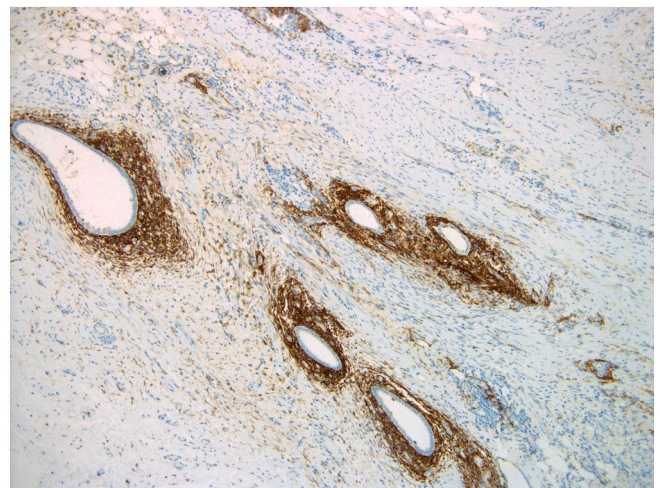


Fig. 3. Histopathological examination. Endometrial glands and stroma with CD10-positive cells. Scale division: 500 μ m.

cytology is effective for diagnosis [11,12], surgery is the first choice for diagnosis and symptom relief. In our case, the symptoms did not coincide with menstrual cycles; however, we could consider inguinal endometriosis as a preoperative diagnosis based on the imaging result of a decreased mass size, which is an uncommon manifestation caused by endometriosis-related hematoma absorption. Then, according to the preoperative planning, we could perform complete resection via an anterior approach.

For treating inguinal endometriosis, complete surgical resection must include the removal of not only the mass but also the extraperitoneal portion of the round ligament [13]. This is because inguinal endometriosis frequently affects the extraperitoneal portion of the round ligament and is rarely detected in association with occult hernias [2]. The remnant of the lesions can cause postoperative residual symptoms and recurrence; therefore, we consider that an anterior approach should be selected for resection of the entire extraperitoneal portion of the round ligament. As a point to note after surgery, an additional gynecological assessment should be performed because most inguinal endometriosis is concomitant with pelvic endometriosis [4]. The risk of malignant transformation of extrapelvic endometriosis is considered extremely rare, but the details are unclear due to its rarity [14]. Our patient's inguinal pain has been relieved without recurrence, and she is scheduled to undergo additional gynecological examination hereafter.

4. Conclusion

Inguinal endometriosis is uncommon and difficult to diagnose, which results in overlooking and inadequate surgery. In the treatment, the complete removal of the mass and the entire extraperitoneal portion of the round ligament by an anterior approach is necessary to prevent postoperative residual symptoms and recurrence. To perform a reliable surgery, having a high suspicion and diagnostic precision improvement for inguinal endometriosis before surgery is crucial. Regardless of the presence or absence of menstrual variability, the feature of decreased mass size caused by endometriosis-related hematoma absorption can serve as a preoperative diagnostic clue.

Consent

Written informed consent was obtained from the patient for publication of this case report and accompanying images.

Provenance and peer review

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Ethical approval

The case report is exempt from ethical approval in our institution.

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CRediT authorship contribution statement

YW drafted the manuscript and provided the original pictures. RS, MK, and MH participated in treating the patient and revised the manuscript. All authors read and approved the final manuscript.

Declaration of competing interest

None.

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