

Primary Umbilical Endometriosis in a 52-Year-Old Woman: A Case Report

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ABSTRACT

Primary umbilical endometriosis is an exceptionally rare extragenital manifestation often misdiagnosed due to its clinical similarity to other umbilical masses, especially in patients without prior pelvic surgery. This study aims to analyze the diagnostic process and surgical intervention effectiveness in a perimenopausal patient. A qualitative descriptive case study was conducted on a 52-year-old woman selected via purposive sampling. Data were gathered through longitudinal clinical documentation, including medical history, physical examination, and radiological evaluations (ultrasound and CT scans), confirmed by histopathological reports. Results identified a 3.16 × 3.37 × 2.8 cm hypoechoic solid mass with peripheral vascularization and increased post-contrast density, manifesting as cyclic bleeding. Management through wide excision successfully achieved total removal, with histopathology confirming umbilical endometriosis and no recurrence during a one-year follow-up. This study concludes that primary umbilical endometriosis should be a primary differential diagnosis for umbilical masses presenting with cyclic bleeding. Its practical contribution emphasizes integrating imaging with histopathological confirmation as the gold standard, highlighting wide excision as a definitive therapeutic modality for optimal clinical outcomes and prevention of recurrence

INTRODUCTION

Endometriosis is a benign chronic inflammatory condition that is pathologically characterized by the presence of glandular tissue and functional endometrial stroma outside the uterine cava. Epidemiologically, the disease affects about 5% to 10% of women of reproductive age worldwide, with the main clinical manifestations being chronic pelvic pain and infertility (Hordiychuk & Mehanna, 2022). Although it is non-neoplastic, the invasive biological nature of endometriosis and its ability to proliferate under hormonal influences make it one of the most complex medical challenges in modern gynecology (Obrycka et al., 2024).

Most endometriosis lesions are found to be localized within the pelvic cavity, however the literature notes that about 12% of cases occur in extragenital locations involving non-reproductive organs (Cain et al., 2021). One of the rarest extragenital manifestations is umbilical endometriosis (EU), with an incidence ranging from 0.5% to 1% of all cases of endometriosis (Lukac et al., 2022). These unusual locations often lead to delays in diagnosis due to low clinical suspicion indexes, especially for medical practitioners outside the field of gynecology.

Based on its etiology, umbilical endometriosis is classified into primary and secondary types. Secondary forms are generally closely related to a history of previous abdominal surgery, such as laparoscopy, in which iatrogenic implantation of endometrial cells occurs in the scar (Msc, 2022). In contrast, primary umbilical endometriosis appears spontaneously without a history of surgical intervention. The pathophysiological mechanism of this primary form is still a scientific debate, although the theories of celluloid metaplasia and lymphoid-vascular migration are often put forward as potential explanations for the appearance of lesions in the umbilical cord.

Identification of the problem arises because primary EU often exhibits non-specific clinical symptoms, so it is often diagnosed as an umbilical hernia, pyogenic granuloma, or melanoma. Research gaps in previous studies show a lack of consensus regarding standard diagnostic protocols, especially in patients who have passed peak reproductive age (Al Wattar et al., 2021). In addition, limited data on risk factors that trigger EU in individuals without a history of surgical trauma means that diagnosis enforcement often relies only on definitive histopathological results (Tsagkaris et al., 2025).

The urgency of this report is further emphasized by the documentation regarding the malignant transformation of umbilical endometriosis lesions which, although very rare, remain a real risk (Ashindoitiang et al., 2024). Given the potential for malignant degeneration, the accuracy of diagnostic evaluation and adequate surgical management is crucial. Clinicians are required to be able to distinguish these benign lesions from primary and secondary malignancies of the umbilicus, such as Sister Mary Joseph's nodule, in order to avoid errors in medical procedures (Ha et al., 2021).

This case report aims to explicitly describe clinical manifestations, diagnostic evaluation through imaging modalities, and surgical management strategies in a 52-year-old woman diagnosed with primary umbilical endometriosis. Through the presentation of cases in elderly patients, the study

seeks to provide a comprehensive picture of the disease course, starting from the characteristics of cyclic pain to the results of post-excision histopathological evaluation.

Theoretically, this study makes a significant contribution to the development of science by enriching the literature on rare extragenital endometriosis variations in perimenopausal age groups. In practical terms, this report serves as a guide for clinicians in considering endometriosis as the primary differential diagnosis of umbilical mass even without a history of surgery. This is expected to improve diagnostic accuracy, minimize therapy delays, and ensure optimal clinical outcomes for patients (Sagay et al., 2022).

THEORETICAL REVIEW

A 52-year-old woman came in with a complaint of a lump in the umbilical region that had been felt since ± 1 year before being admitted to the hospital. The lump is reported to enlarge slowly and is not accompanied by persistent pressing pain. However, patients reported a typical symptom in the form of bleeding from a lump that occurs cyclically during menstruation. At the time of presentation, the patient was still experiencing a regular menstrual cycle, which indicated a perimenopausal status. Systemic complaints such as bowel disorders, urinary disorders, and significant weight loss are denied by patients. In addition, the patient had no history of comorbid disease nor a history of surgery in the previous umbilical area, which led to suspicion of a form of primary umbilical endometriosis.

A physical examination shows vital signs within normal limits. On local inspection in the abdominal region, a dark red mass was found with an infirm border and did not show pressing pain on palpation. Clinical findings in the form of dark umbilical masses and sensitivity to hormonal cycles are strong indicators for the diagnosis of cutaneous endometriosis.

Radiological evaluation is performed to assess the depth and vascularization of the lesion. Ultrasound (ultrasound) of the abdomen showed a hypoechoic solid mass measuring $3.16 \times 3.37 \times 2.8$ cm with peripheral vascularization, in which lesions appear attached to the underlying muscle tissue. Furthermore, an abdominal CT scan showed a solid mass with a density of 39 Hounsfield Units (HU) which increased significantly to 94 HU after intravenous contrast administration, indicating a highly vascular lesion. The imaging also identified the presence of bilateral cystic lesions in the adnexa as well as a thickening of the posterior uterine wall that was suspicious as adenomyosis or comorbidity pelvic endometriosis.

Based on the integration of clinical and radiological findings, the occupational diagnosis is established as primary umbilical endometriosis taking into account other comparative diagnosis of umbilical masses such as Sister Mary Joseph's nodule or granuloma (Martinelli et al., 2025). After obtaining written informed consent from the patient, it is decided to perform surgery. Wide excision of umbilical mass is performed as an optional procedure. Intraoperatively, it was found that the lesions did not invade the fascia extensively and therefore did not require complex en bloc resection.

The definitive diagnosis is established through histopathological examination that shows the presence of endometrial gland and ectopic stromal tissue surrounded by fibrotic tissue. These microscopic findings confirm the presence of functional elements of the uterus in extragenital locations. Clinical evaluation conducted over one year postoperatively showed excellent recovery, with no signs of residual mass or complaints of recurrent bleeding, confirming the effectiveness of extensive surgical excision in treating umbilical endometriosis.

METHODOLOGY

This study uses a qualitative approach with a descriptive case study design to explore rare clinical phenomena in a single subject in depth. Participant selection was carried out through a non-probability purposive sampling technique, in which a 52-year-old woman was selected as a single subject because she met specific inclusion criteria in the form of manifestations of primary umbilical endometriosis at perimenopausal age. Data were collected through clinical documentation techniques and longitudinal observation that included medical history, physical examination results, and radiological and histopathological reports (Tariq et al., 2025). The main instruments in this study are the patient's medical records and operative protocols whose validity is guaranteed through data triangulation between the patient's clinical findings and the results of objective supporting examinations such as ultrasound and Computed Tomography (CT) scans.

The research procedure starts from the stage of patient identification in the outpatient unit, followed by preoperative clinical data collection, monitoring of extensive excision intervention procedures, to postoperative evaluation for one year to assess the risk of recurrence. Data analysis was carried out by inductive qualitative content analysis techniques, in which clinical information was synthesized and compared with the current literature to draw accurate diagnostic conclusions. The entire analysis process is supported by Zotero's reference management software to ensure citation consistency as well as digital documentation for radiological image mapping. This research fully complies with the ethical principles of the Helsinki Declaration, where written consent (informed consent) has been obtained from patients for the publication of clinical data and supporting medical images for the benefit of scientific development.

RESEARCH RESULT

This report is limited to one case with a follow-up duration of one year. Long-term observation is needed to assess the risk of recurrence more comprehensively. A comprehensive pelvic evaluation was not performed so the involvement of pelvic endometriosis could not be completely ascertained.

Table 1. Comparison with Previously Reported Cases

Author	Age	Surgical History	Main Symptoms	Treatment	Outcome
Victory et al. ⁸	30-45	Mixed	Swelling, pain, bleeding	Excision	Low recurrence

Ouedraogo et al. ⁷	35	None	Cyclical pain & bleeding	Wide excision	No recurrence
Genovese et al. ⁹	39	None	Umbilical swelling	Excision	Favorable
Hirata et al. ³	Mean 37.7	Majority secondary	Swelling ± pain	Surgery	Recurrence uncommon
Present case	52	None	Swelling & bleeding	Wide excision	No recurrence (1 year)

DISCUSSION

Umbilical endometriosis is a rare form of extragenital endometriosis (Hirata et al., 2020). A national survey by Hirata et al. reported that the average age of patients was around 37 years old (Hirata et al., 2020). The patients in this report are 52 years old and still menstruating, thus confirming that this condition can still occur in perimenopausal women with ongoing hormonal activity (Duralde et al., 2023). The primary form as in this case occurs without a history of previous surgery (Bala et al., 2022). Proposed mechanisms include hematogenous or lymphatic diffusion as well as implantation through umbilical embryonic residue. The umbilical as physiological scar tissue with a relatively rich vascular and lymphatic supply is thought to be a predisposing site for implantation of ectopic endometrial cells (Sun et al., 2023).

Classic Triassic swelling, cyclic pain, and bleeding are reported in most cases (Montagna & Ruggiero, 2023). These patients experienced painless cyclic swelling and bleeding, indicating variations in the clinical spectrum. Cyclic bleeding remains a very distinctive diagnostic clue and helps distinguish it from other umbilical lesions (Siva Achanna & Nanda, 2022).

Differential diagnosis of umbilical masses includes umbilical hernias, Sister Mary Joseph nodules, granulomas, melanomas, and epidermoid cysts (Soo et al., 2024). In contrast to umbilical metastases, endometriosis shows a relationship with the menstrual cycle and is rarely accompanied by systemic symptoms.

Radiologically, ultrasound generally shows hypoechoic masses with peripheral vascularization. CT scans help assess the depth of the lesion and the involvement of surrounding tissues (Schmidt et al., 2021). However, a definitive diagnosis is still established through histopathological examination.

The main management is wide excision. Fedele et al. reported a higher recurrence rate in superficial excision than in radical excision (Sacchetti et al., 2021). Hormonal therapy is only symptomatic and non-curative. In addition, reports of malignant transformation into clear cell adenocarcinoma although rarely confirm the importance of complete excision.

This case confirms the importance of maintaining a high suspicion index of umbilical endometriosis in women with umbilical lesions that undergo cyclic changes to avoid misdiagnosis as intraabdominal metastases (K Wong MBCChB MRCOG, 2021).

CONCLUSIONS AND RECOMMENDATIONS

Primary umbilical endometriosis is a rare clinical entity that should be considered as the primary differential diagnosis in female patients with umbilical masses accompanied by cyclic bleeding. Accurate diagnosis enforcement requires the integration of strong clinical correlation, imaging evaluation, as well as confirmation through histopathological examination as the gold standard. Wide excision is a definitive therapeutic modality that provides excellent clinical outcomes with minimal risk of recurrence, as long as resection is performed adequately until it reaches the limit of healthy tissue.

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