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Parietal and Umbilical Endometriosis: A Surgical Dilemma and Clinical Enigma

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1. Introduction

Endometriosis is a common gynecological disorder characterized by the presence of physiologically active uterine mucosa outside the uterine cavity [1]. It affects 10–15% of women of reproductive age and approximately 6% of premenopausal women [2]. While the pelvic region is the most common site of occurrence, extra-pelvic endometriosis, including cutaneous and parietal forms, remains a rare but significant manifestation [3].

Parietal endometriosis (PE) is one of the rarest presentations, characterized by the presence of ectopic endometrial cells in the abdominal wall, typically following gynecological or surgical procedures [4]. Its pathophysiology remains debated, though multiple theories attempt to explain its occurrence [5]. The hallmark symptom is cyclic pain with or without a palpable mass [5].

Among the cutaneous forms, umbilical endometriosis is particularly rare, with an incidence of 0.5–1% of all cases of endometrial ectopia [6]. Despite its rarity, it should be considered in the differential diagnosis of umbilical lesions, especially in patients presenting with cyclical bleeding and pain during menstruation [2].

2. Case Presentation 1

A 44-year-old patient, G0P0, with a history of laparotomic cystectomy in 2014, presented to the obstetrics and gynecology department for consultation due to premenopausal metrorrhagia related to a multiferroic uterus. She reported worsening symptoms over the past months, with increased menstrual bleeding and pelvic discomfort.

On physical examination, a firm, tender subcutaneous nodule was noted on the umbilicus, fixed to the deeper anatomical planes, measuring 3 cm in diameter. The overlying skin showed slight hyperpigmentation, and upon applying pressure to both sides of the lesion, a thick brown discharge was expressed. The patient had previously ignored this symptom, assuming it was unrelated to her gynecological condition (Figure1). Supplementary MRI confirmed the presence of multiple myomas, including an intramural fundal mass measuring 86 × 76 mm. The lesion exhibited a globally heterogeneous and intermediate signal on T2, with some areas of marked T2 hyposignal but no obvious diffusion restriction. This myoma enhanced rapidly after gadolinium injection, indicating significant vascularization. Additionally, an umbilical mass showed T1 hyposignal, intermediate T2 signal, and heterogeneous enhancement without obvious diffusion restriction (Figure 3).

Given the patient's age and primary complaint, an initial hysteroscopy with biopsy was performed to rule out endometrial pathology. The findings were unremarkable.

In light of the clinical and radiological findings, a biopsy of the umbilical mass was performed. Histopathological examination revealed fibrous tissue with glandular structures resembling endometrial tissue, confirming the diagnosis of parietal endometriosis (Figure3).

Given the coexistence of a symptomatic fibroid uterus and parietal endometriosis, a laparotomic hysterectomy and omphalectomy were planned in collaboration with the general surgery department. Surgical exploration did not reveal evidence of deep endometriosis or peritoneal implants.

The postoperative period was uneventful. The patient was discharged with appropriate follow-up, including periodic clinical and imaging assessments every six months. No recurrence was observed during the 24 months following surgery, and the patient reported complete resolution of her symptoms, including the cessation of umbilical bleeding and pelvic discomfort.

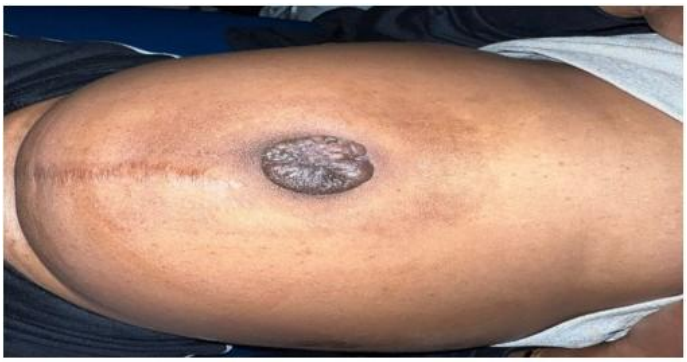

Figure 1: Ultrasound revealed an enlarged uterus with a heterogeneous, hypervascularized intramural fundal mass measuring 86 × 76 mm, associated with right hydrosalpinx.

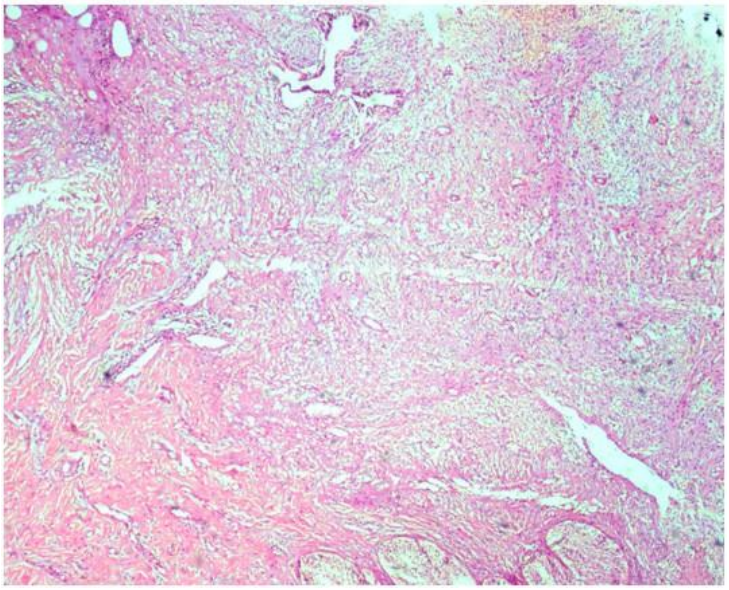

Figure 2: H&E staining: Low magnification showing endometrial glands beneath a squamous epithelium.

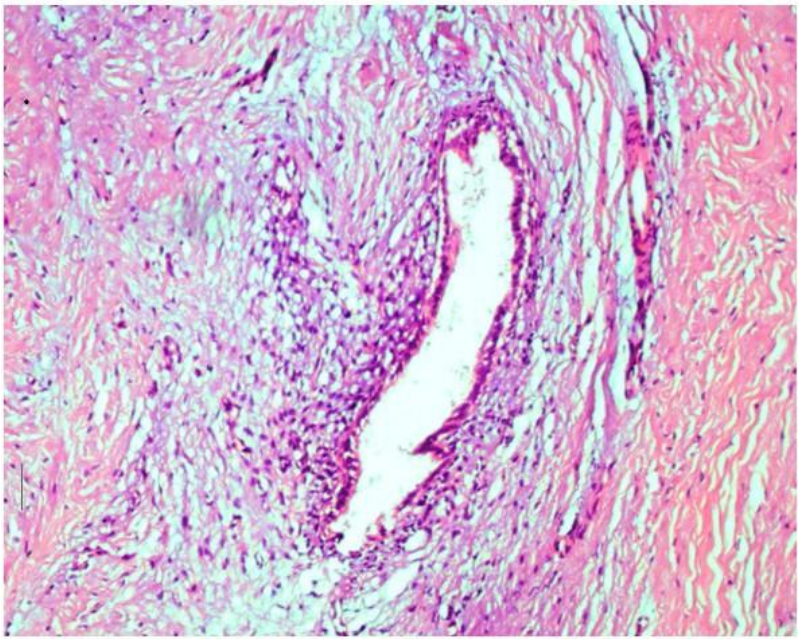

Figure 3: H&E staining: High magnification showing an endometrial gland surrounded by cytogenic stroma.

3. Case Presentation 2

A female patient, with no neoplastic history, G4P4, had previously four cesarean sections, presented in our outpatient department for persistent, dull pain on the site of the Pfannenstiel laparotomy, with cyclical exacerbation during menses for the past year.

Her last menstrual period was 05/10/23 with regular cycles since 15 years-old.

On the local examination, was noticed a slight deformation on the right corner of the surgical scar, determined by the presence of an irregular swelling, immobile, slightly sensitive to the touch, adherent to the skin, with firmed consistency around 4*2cm.

On ultrasound examination, a parietal solid mass with small hypoechoic areas enclosed in an area with hyper echogenicity, with a diffuse contour was discovered, suggestive of parietal wall collection endometriosis.

The MRI, that was also performed in this patient, led us to be more convinced that this is a case of endometriosis with mural localization.

Based on the clinical and imaging diagnosis of parietal endometriosis, a surgical intervention was performed, identifying a dense, fibrous, structure that is removed entirely, with healthy surrounding tissue, followed by reconstruction of the abdominal wall in anatomical layers.

Microscopic examination found it a dense tissue with foci of endometriosis, thus confirming the diagnosis. No recurrence was found after a three months of follow-up, and our patient was satisfied.

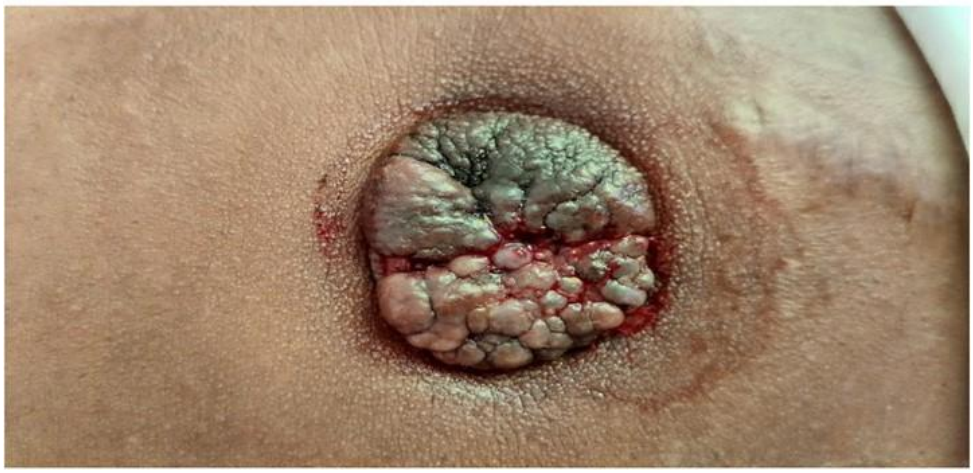

Figure 4: Upon further questioning, the patient reported experiencing cyclical bleeding from the umbilicus during menstruation, a classical symptom of Villar's nodule, a rare presentation of cutaneous endometriosis.

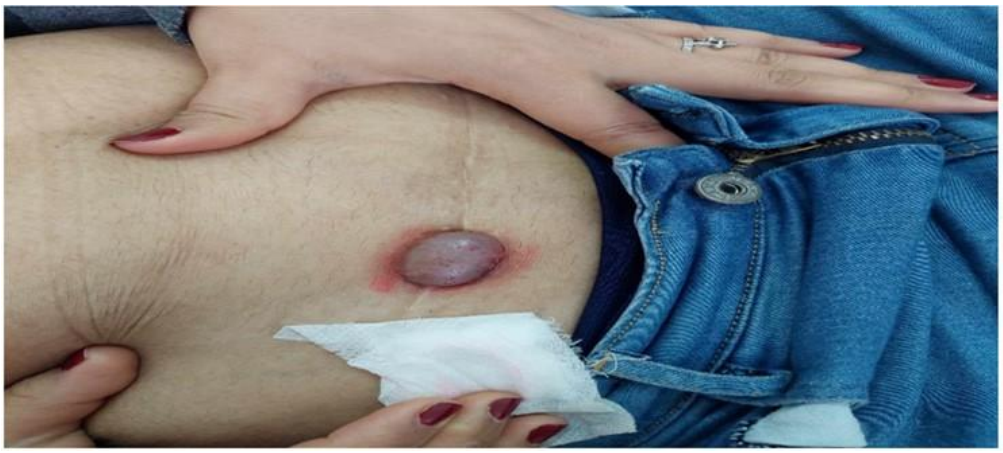

Figure 5: On ultrasound examination, a parietal solid mass with small hypoechoic areas enclosed in an area with hyper echogenicity, with a diffuse contour was discovered, suggestive of parietal wall collection endometriosis.

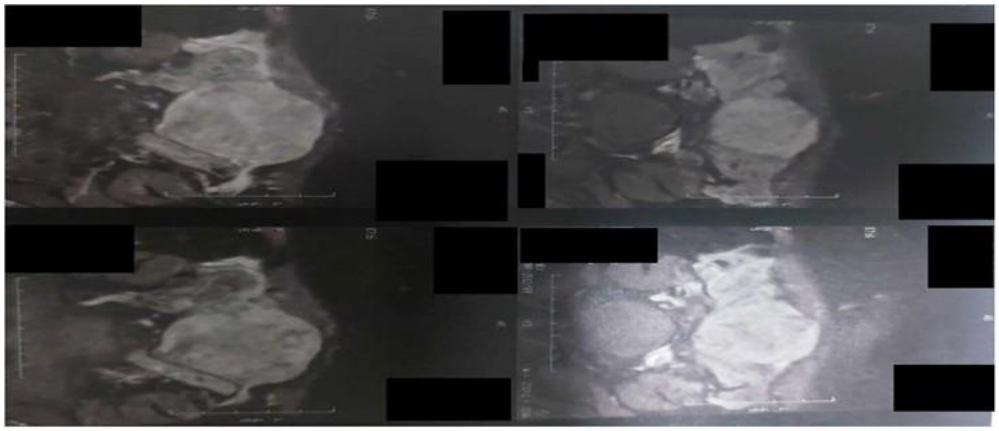

Figure 6: The MRI, that was also performed in this patient, led us to be more convinced that this is a case of endometriosis with mural localization.

4. Discussion

Endometriosis has been recognized as a clinical entity for over 300 years, first described by Rokitansky in 1860(7). The ectopic implantation of endometrial tissue can occur through various mechanisms, including retrograde menstruation, coelomic metaplasia, lymphatic or hematogenous dissemination, and direct iatrogenic implantation during surgical procedures [4].

The transplantation theory, which suggests that endometrial cells travel via retrograde menstrual reflux through the fallopian tubes and disseminate to distant sites, is considered the most plausible. These ectopic cells demonstrate remarkable adaptability, exhibiting angiogenesis and responding to hormonal stimuli, which contributes to their persistence and progression [4].

Parietal endometriosis is often linked to previous surgical interventions, such as cesarean sections, hysterectomies, or laparoscopy, where endometrial cells inadvertently implant within the abdominal wall. Surgeons have recommended careful isolation of the surgical site and thorough irrigation before closure to minimize the risk of contamination [8].

Clinically, PE presents with cyclic pain and/or a firm, palpable mass, particularly in scar regions [5]. Similarly, umbilical endometriosis manifests as a firm nodule with cyclical pain and bleeding [2]. Both conditions can significantly impact a woman's quality of life, leading to pain, depression, and work absenteeism.

The differential diagnosis of cutaneous and parietal endometriosis includes pyogenic granuloma, umbilical polyps, melanocytic nevi, seborrheic keratosis, hemangiomas, desmoid tumors, granular cell tumors, omphalitis, keloids, umbilical hernias, and foreign body granulomas. Malignant transformation, although rare, has been documented, necessitating careful evaluation [3].

Diagnosis and Management: The diagnosis of PE and umbilical endometriosis relies on clinical history, imaging studies such as ultrasound and MRI, and histopathological confirmation. Ultrasound and MRI are valuable tools for visualizing heterogeneous parietal masses, often showing fibrosis, ill-defined margins, and occasional cystic components containing hemorrhagic material [5].

Intraoperatively, endometriotic lesions exhibit firm fibrosis with adjacent tissue invasion, often containing brownish fluid that triggers local inflammation and further fibrosis [9]. Histological examination remains the gold standard for confirmation [10].

Treatment primarily involves surgical excision with clear margins, as inadequate removal leads to recurrence and symptom persistence [10]. While hormonal therapies, including progesterone, danazol, norethisterone, and gonadotropin-releasing hormone (GnRH) analogs, may provide symptom relief, they are often insufficient as standalone treatments. Studies have shown that adjuvant hormonal therapy post-excision can reduce recurrence rates from 42.9% to 11% [8].

The surgical approach varies depending on the extent of the lesion. Total umbilical excision is often preferred for umbilical endometriosis, while wide excision with disease-free margins is crucial for PE to prevent recurrence [1].

5. Conclusion

Parietal and umbilical endometriosis are rare but clinically significant manifestations of endometriosis. With increasing cesarean sections and gynecological surgeries, clinicians should maintain a high index of suspicion for these conditions in women presenting with cyclic pain and abdominal wall masses.

Accurate diagnosis requires a combination of clinical evaluation, imaging, and histopathological confirmation. Surgical excision remains the definitive treatment, with hormonal therapy serving as an adjunct to reduce recurrence. Awareness among gynecologists, surgeons, and imaging specialists is crucial to ensure timely diagnosis and appropriate management, ultimately improving patient outcomes.

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