

Umbilical endometriosis post-laparoscopic surgery: A case of subcutaneous seeding and neoumbilicus creation

Colton C Mowers^{1*}, Teresa Veselack¹, Keith Hood¹ & Sarfraz Ahmad²

¹Rush University Medical Center, Rush Medical College, Chicago, IL-60612, USA

²AdventHealth Cancer Institute, Gynecologic Oncology Program, Orlando, FL-32804, USA

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Umbilical endometriosis is a rare manifestation of ectopic endometrial tissue, often linked to prior abdominal surgery. Its relevance in reconstructive surgery, particularly during umbilicoplasty, is underreported. A 37-year-old woman with prior laparoscopic procedures presented with periumbilical pain and a growing mass. Imaging was inconclusive, but symptoms suggested endometriosis. She underwent surgical excision, umbilical hernia repair, and umbilicoplasty. Histopathology confirmed endometriosis. Postoperatively, she recovered well with complete symptom resolution. Umbilical endometriosis should be considered in patients with prior abdominal surgery presenting with umbilical pain. Excision with umbilicoplasty offers both definitive treatment and cosmetic restoration.

Keywords: Ectopic, Endometriosis, Neoumbilicus, Subcutaneous seeding, Umbilical endometriosis

Endometriosis, the presence of endometrial tissue outside the uterus, affects up to 10% of reproductive-age women. Umbilical endometriosis is rare, accounting for only 0.5–1% of cases¹. Ectopic endometrial tissue is most frequently observed in abdominal wall scars after cesarean sections, laparotomies, or laparoscopies^{2,3}. While endometriosis at surgical sites is well documented, its occurrence after umbilicoplasty is seldom reported⁴. For plastic surgeons, managing such cases involves both removal of diseased tissue and reconstruction of a cosmetically acceptable neoumbilicus. The objective of the study is to highlight the clinical presentation and surgical management of subcutaneous umbilical endometriosis in a patient with prior laparoscopic surgery, emphasizing the role of excision and umbilicoplasty in achieving both symptom relief and cosmetic restoration.

Case Scenario

A 37 year-old female with a history of laparoscopic cholecystectomy in 2010 and diagnostic laparoscopy for endometriosis in 2022 presented to the emergency department in July 2023 with severe periumbilical pain and nausea. She reported minimal relief with over-the-counter non-steroidal anti-inflammatory drugs

(NSAIDs) and Tylenol. Additionally, she noted progressive enlargement of her umbilicus over the past year. She observed a "bulge in her belly button" since undergoing laparoscopic surgery for endometriosis one year earlier. She denied any other associated symptoms but reported being on her menses at the time. General surgery was consulted and suggested a surgical exploration of the umbilicus due to concerns about a possible umbilical hernia or suture granuloma. Given her concerns regarding the aesthetic outcome of the procedure, she was referred to plastic surgery.

On physical examination, the abdomen was soft and non-distended, with well-healed umbilical incisions from prior laparoscopic surgery that were tender to palpation (Fig. 1). The incisions were mildly swollen but did not appear infected. A repeat computed tomography (CT) scan demonstrated non-specific thickening at the umbilicus. Notably, pain at her umbilicus coincided with her menstrual cycle and was aggravated by pressure, raising suspicion for ectopic endometriosis. The patient initially declined surgical intervention and opted for conservative management. Several months later, she returned to the emergency department due to active bleeding from her umbilicus. She was re-evaluated by the plastic surgery team and agreed to proceed with excision of the umbilical lesion along with umbilicoplasty to improve cosmesis.

Laboratory investigations, including serum CA-125 levels, were conducted to assess for potential underlying

*Correspondence:

Phone: +1-507-402-8740

E-mail: colton_c_mowers@rush.edu



Fig. 1 — A representative image of the pre-neoumbilicus in a female patient



Fig. 2 — A representative image of the post-neoumbilicus in the patient

inflammatory or hormonal factors. The patient's CA-125 level was slightly elevated at 42 U/mL, which, while mildly higher than the normal range (less than 35 U/mL), did not support an inflammatory etiology and was consistent with the diagnosis of isolated umbilical endometriosis in the absence of other systemic involvement. Other laboratory values were within normal limits, including complete blood count (CBC), liver function tests (LFTs), and renal function tests. The patient's white blood cell count was $6.4 \times 10^9/L$ (normal range: $4.0-11.0 \times 10^9/L$), hemoglobin was 13.2 g/dL (normal range: 12.0-16.0 g/dL), and platelet count was $215 \times 10^9/L$ (normal range: $150-400 \times 10^9/L$). Liver enzymes (ALT and AST) were 22 U/L (normal range: 10-40 U/L), and creatinine was 0.8 mg/dL (normal range: 0.6-1.3 mg/dL), all within the normal range. Vital signs were stable at the time of presentation, with a blood pressure of 120/75 mmHg, heart rate of 72 bpm, respiratory rate of 16 breaths/min, and temperature of 36.8°C.

In June 2024, she underwent excision of the umbilical lesion, umbilical hernia repair, and umbilicoplasty. Abnormal tissue within the umbilicus was identified through palpation and visual inspection, then excised sharply full-thickness down to the level of the anterior

abdominal fascia. The lesion measured 2.5 cm in length and was sent to pathology. The umbilical tract and wound were thoroughly fulgurated to reduce the likelihood of recurrence. A 1 cm umbilical hernia was identified and repaired. The wound was thoroughly irrigated, and hemostasis was achieved with electrocautery. In order to close the defects with minimal tension, the wound was undermined 1-2 cm in all directions, and umbilicoplasty was performed. Sutures were placed to recreate the natural contour of the umbilicus, and remaining skin defects were closed with interrupted sutures superficially (Fig. 2).

The patient recovered well following surgery and was evaluated in the clinic after 2 weeks and again at 4 weeks post-operatively. The incisions were healing well, and she reported no return of her prior symptoms. The final pathology diagnosis from the excised lesion was hemorrhagic subcutaneous fibrosis, consistent with ectopic endometriosis.

Discussion

Ectopic endometriosis in the abdominal wall is often delayed in diagnosis due to its rarity and nonspecific presentation³. Proposed mechanisms include lymphatic/vascular migration or direct implantation of endometrial cells during surgery^{4,5}. This case supports iatrogenic seeding during laparoscopy as the likely etiology. Surgical excision is the preferred treatment, offering both symptom relief and reduced recurrence⁶. Performing umbilicoplasty concurrently allows restoration of the natural umbilical contour without compromising surgical goals.

Conflict of interest

All authors declare no conflict of interest.

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