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## CASE REPORT

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# Umbilical Endometriosis in the Absence of Previous Surgery: A case report

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### ABSTRACT

The abdominal wall is the commonest site of extrapelvic endometriosis, which usually develops with prior surgical scar. An estimated incidence of umbilical endometriosis is around 0.5% - 1%, a rare condition. We illustrate a case of a 41-year-old woman, nulliparous, primary infertility for 15 years, without significant medical or surgical history, had been suffering from an umbilical skin lesion and cyclical bleeding from the umbilicus for 6-month duration. It was associated with pelvic pain and related to menstrual cycle. Physical examination revealed a skin-colored mass measuring around 3 x 2 cm in size, located at the umbilicus. An ultrasonographic examination of the abdomen revealed an ill-defined hypoechoic collection at the umbilical region and a right ovarian cyst measuring around 4 x 3 cm with a ground glass appearance. Laparoscopic surgery and surgical exploration confirmed the presence of these lesions where the umbilical mass did not communicate with the peritoneal cavity. Surgical excision of the umbilical mass was done and histopathology examination confirmed that the lesion was consistent with endometriosis.

**Keywords:** endometriosis, umbilical endometriosis, cyclical pain, surgical excision.

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**Received:** 23 October 2022, **Revised:** 7 February 2023, **Accepted:** 26 February 2023

## Introduction

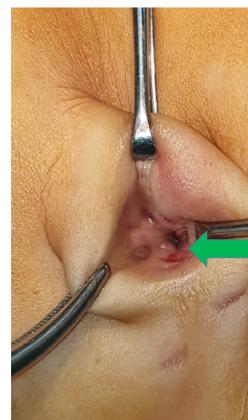
Endometriosis is a common gynaecological problem in women of reproductive age that frequently occurs in the pelvic region. Extrapelvic endometriosis, though rare, has been reported in association with prior surgical scars. Umbilical endometriosis is extremely rare in the absence of surgery, and the incidence is reported to be 0.5-1%<sup>(1)</sup>. The exact pathogenesis remains unknown. However, some theories postulate that the umbilicus may act as a physiological scar explaining the development of spontaneous disease in this area<sup>(2)</sup>.

Patients with umbilical endometriosis may be misdiagnosed with a surgical complaint as they may present with a nonspecific complaint like vague abdominal pain and palpable subcutaneous swelling. A thorough history and physical examination are essential for making the correct diagnosis, and with the aid of imaging can help in assisting the diagnosis.

## Case Report

A 41-year-old lady, nulliparous with primary infertility for 15 years, presented to the outpatient clinic with an umbilical skin lesion and cyclical bleeding from the umbilicus for a 6-month duration. She had no significant medical history with no history of abdominal surgery. Abdominal examination revealed a skin-colored mass measuring around 3 x 2 cm in size, located at the umbilicus which was firm and mild tender (Fig. 1). It was associated with pelvic pain and related to the menstrual cycle.

An ultrasonographic examination of the abdomen revealed an ill-defined 14.7 x 19.4 mm hypoechoic mass at the umbilical region (Fig. 2) and a right ovarian cyst measuring around 4 x 3 cm with a ground glass appearance. The patient was offered for surgical intervention as the persistent symptoms disturbed her daily activity. A diagnostic laparoscopic surgery and surgical exploration confirmed these findings of stage 2 endometriosis, where the umbilical mass did not communicate with the peritoneal cavity.



**Fig. 1.** Clinical appearance of umbilical endometriosis with hyperpigmented area seen (green arrow).

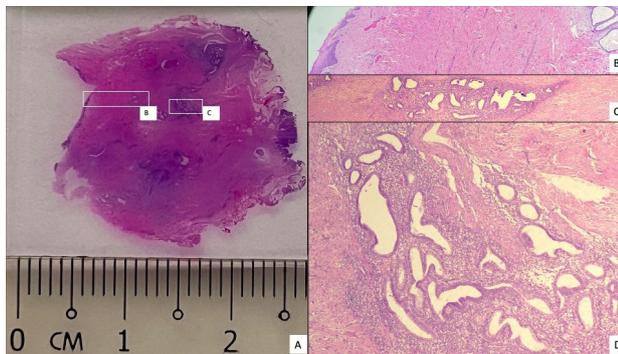


**Fig. 2.** Transcutaneous ultrasound showed a 14.7 x 19.4 mm umbilical nodule (red arrow).

Surgical excision of the umbilical mass was performed, with the mass about 3 x 2 cm, firm in consistency with wide excision and clear margins (Fig. 3). Histopathology examination confirmed that the mass consisted of multiple endometrial glands surrounded by endometrial stroma, which was consistent with endometriosis (Fig. 4). She was on gonadotropin-releasing hormone analogue for six cycles and had been followed-up six weeks postoperative, and she was found to be asymptomatic and well-healed scar. She was planned to be seen at six-month postoperative however she defaulted to our follow-up.



**Fig. 3.** Surgical excised tissue of umbilical endometriosis.



**Fig. 4.** A Macroscopy of umbilical nodule with measurement of 22 mm greatest diameter (H&E). B Overlying skin with endometriotic cystic glands within the parenchyma (H&E, 40x). C Endometriotic spots in deeper part of the umbilical nodule (H&E, 40x). D Endometriosis composed of cystically dilated endometrial glands with its stroma within the fibrocollagenous tissue of the nodule (H&E, 100x).

## Discussion

Umbilical endometriosis is most commonly diagnosed in reproductive-age women between the ages of 31 and 38 years<sup>(3)</sup>. It is defined as the presence of endometrial glands and / or stroma within the umbilicus<sup>(4)</sup>. It is most commonly seen secondary to surgical scar and rarely found as primary umbilical endometriosis. The exact pathogenesis is still unknown however there are theories postulate the pathogenesis of primary umbilical endometriosis; that the umbilicus may act as a physiological scar<sup>(2)</sup>; metaplastic changes of urachal remnants<sup>5</sup>; migration

of endometrial cells through the abdominal cavity or the lymphatic system; genetic predisposition; and immunologic defect<sup>(4)</sup>. In this case, the patient had coexistent pelvic endometriosis, the theory postulated is possible due to hematogenous or lymphatic spread which the shedding endometriotic cells are transported through the lymphatic and vascular system to the umbilicus<sup>(6,7)</sup>.

Umbilical endometriosis should be suspected in patients with complaints of cyclical pain, swelling, discharge and bleeding in relation to menstruation<sup>(8)</sup>. The most common presenting symptoms are umbilical swelling, cyclical pain and bleeding with or without dysmenorrhea<sup>(9,10)</sup>. However, patients may present with nonspecific complaints such as cutaneous mass and nonspecific abdominal pain without any association with the menstrual cycle, leading to misdiagnose as a surgical problem, and delay in diagnosis and treatment<sup>(5,7)</sup>. Based on our patient's presentation, despite patient presenting with a classical complaint of umbilical endometriosis, other differential diagnoses still have to be cautious such as umbilical hernia, pyogenic granuloma, keloid, melanoma, primary or metastatic carcinoma (Sister Mary Joseph's nodule)<sup>(9)</sup>. Benign nevus and lipoma also have to be considered as the presentation is subcutaneous mass or discoloration of the umbilical skin.

The most common findings may manifest as umbilical mass; a firm consistency nodule varying in colour (i.e., bluish-black to intense red, brown or purpura) or multilobulated depending on the amount of haemorrhage and the depth of penetration of ectopic endometrial tissue<sup>(10)</sup>. The size of umbilical mass in most of the reported cases is around 0.5 to 2.5 cm<sup>(5, 6, 10)</sup> and the one case reported to be encounter 4 cm size of umbilical mass in largest dimension<sup>(9)</sup>. Patients with umbilical endometriosis with no history of abdominal surgery (known as spontaneous cutaneous endometriosis) have a greater risk of coexisting endometriosis in the pelvic region<sup>(11)</sup>. Similar to our patient, umbilical endometriosis is more likely due to advanced pelvic disease as

compared with those patients who had scar endometriosis.

Radiological investigations are nonspecific but maybe helpful. Ultrasound can be used to assess the size of the nodule and the surrounding tissue's involvement, and to exclude other pelvic pathology to aid in planning for surgical intervention<sup>(12)</sup>. Ultrasound features may include solid with varied echogenicity lesion, most typically seen as hypoechoic lesion with an anechoic cystic component, with or without vascularity seen in Doppler sonography<sup>(5,12)</sup>. This is consistent with the ultrasound findings in our patient. For proper delineation of the mass in relation to the subcutis and muscles, computed tomography scans and MRI are useful<sup>(12)</sup>.

The mainstay treatment in all cases of umbilical endometriosis is wide local excision of the mass with clear margins (at least 1 cm) to offer the highest probability of a favorable outcome, as incomplete excision may lead to recurrence<sup>(13,14)</sup>. The preferred timing for excision of umbilical endometriosis is at the end of menstrual cycle when the glands are smallest, to minimize the complication<sup>(15)</sup>. When there is coexistent with pelvic endometriosis, laparoscopy surgery is useful in excision of the endometriotic lesions, thus reducing the recurrence rate<sup>(5,7)</sup>. The use of hormonal therapy with a gonadotropin-releasing hormone may be added in cases of severe pelvic disease to reduce the symptoms or decreasing the size of the mass prior surgical intervention. In this case, the patient was not given preoperative hormonal therapy as the mass of umbilical endometriosis was not large and the umbilical defect after the resection can be repaired directly. However, she did receive postoperative hormonal treatment as the findings were coexistent with pelvic endometriosis as to reduce the rate of recurrence.

## Conclusion

Umbilical endometriosis should be considered in a reproductive-age patient who presents with cyclical bleeding and abdominal pain regardless of surgical history. Surgical intervention with complete

excision is the optimal treatment, and diagnosis is confirmed by histopathology examination. Hormonal therapy can be considered when there is a coexistent with pelvic endometriosis.

## Potential conflicts of interest

The authors declare no conflicts of interest.

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