

## Umbilical and ovarian endometriosis coexisting with multiple uterine myomas: A rare case report

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### ABSTRACT

Endometriosis and uterine fibroids are both independently associated with infertility/subfertility among women of reproductive age. Primary umbilical endometriosis is very rare and usually does not coexist with ovarian endometriomas. Endometriosis coexisting with uterine myomas has only been reported in few publications. Herein, we presented a patient with primary umbilical endometriosis with no previous history of surgery, with left ovarian endometriomas coexisting with multiple uterine fibroids. The diagnosis of umbilical endometriosis should be kept in mind while evaluating an umbilical mass. The ultrasound and magnetic resonance imaging features of endometriosis and uterine myomas have been presented. To the best of our knowledge, a similar case has not been reported before.

**Key words:** Multiple uterine myomas, Ovarian endometriosis, Ultrasound scan, Umbilical endometriosis

Endometriosis is the presence of endometrial tissue outside the uterus. Endometrioma also called as endometriotic cyst or colloid cyst is a benign cyst which contains functioning endometrial tissue. Endometrioma is a subtype of endometriosis and one of the most common causes of chronic pelvic pain and infertility, usually seen in women of reproductive age. The prevalence of endometriosis is approximately 5% in females of reproductive age [1] and 10% in female population [1,2]. Age of presentation is usually the 2<sup>nd</sup> and 3<sup>rd</sup> decades of life; however, it can be seen in any age. Endometriosis has also been reported in postmenopausal women [3].

The etiology of endometriosis is not fully understood. The risk factors for developing endometriosis include family history, short menstrual cycle length, and previous history of pelvic surgery or laparoscopy [4]. This is a rare case of primary umbilical endometriosis and multiple left ovarian endometriomas coexisting with multiple uterine fibroids. To the best of our knowledge, a similar case has not been reported before.

### CASE REPORT

A 28-year-old nulliparous woman presented to the Federal Teaching hospital, Gombe, Nigeria, on account of a 6-year-history of infertility, lower abdominal pain, umbilical swelling, and cyclical bleeding through the umbilicus. She had earlier presented to other specialist hospital, Gombe, Nigeria, with the same history given previously. She was diagnosed to have uterine fibroids and subsequently had myomectomy in the same facility.

However, she noted a significant increase in the cyclical umbilical bleeding after the surgical procedure.

On physical examination, all the vitals were stable. Local examination of the abdomen revealed a hyperpigmented lobulated swelling which was fluctuant but not tender to palpation. The other systems were normal.

Abdominopelvic ultrasound scan (USS) (Fig. 1a) revealed a bulky uterus with multiple (two) well-defined rounded hypoechoic masses within the uterine fundus distorting its outline. No adnexal mass lesion was seen. Superficial USS of the umbilical mass (Fig. 1b) demonstrated a well-defined rounded mass with heterogeneous echotexture exhibiting both posterior acoustic shadowing and enhancement.

Magnetic resonance imaging (MRI) of the lower half of the abdomen was performed in axial, coronal, and sagittal planes in both T1- and T2-weighted images (T1WI & T2WI). The left ovary was normal in size, but it contained multiple (two) well-defined oval-shaped stromal masses which were seen to demonstrate high signal intensity on T1WI and intermediate intensity on T2WI (shading sign) with peripherally displaced follicles (Fig. 2a and b). The largest mass measures 1.5 cm×1.6 cm. The right ovary is also normal in size and signal intensity. Minimal pouch of Douglas fluid collection was also seen. A well-defined oval mass was also noted within the umbilicus which showed heterogeneous signal intensity on T1 and T2WI (Fig. 3a and b). A bulky uterus with an anterior-posterior diameter of 6.8 cm was seen and demonstrated multiple (three) well-defined oval-shaped non-enhancing intramural masses, the largest noted in the uterine

fundus anteriorly measuring 3.2 cm × 2.7 cm. The masses were seen as isointense on T1WI and hypointense on T2WI (Fig. 4). Laboratory investigations showed normal findings.

A diagnosis of umbilical and left ovarian endometriosis coexisting with multiple uterine myomas was made. The patient had left ovarian cystectomy and myomectomy with radical excision of the umbilical endometriosis. Histology of the excised ovarian and umbilical masses confirmed the presence of endometrial tissues in keeping with the earlier diagnosis, while the uterine masses were confirmed to be uterine myomas. The patient had an uneventful recovery and continued follow-up with the gynecology clinic.

**DISCUSSION**

Endometriosis is a common cause of significant morbidity in young women of child-bearing age presenting with pain, pelvic mass, and infertility. The third decade of life is the most common age of presentation. This index case also presented in her third decade of life. In the majority of cases, endometriosis occurs in the ovaries accounting for about 88% of all cases but can occur in an appendix, fallopian tubes, lungs, and urinary bladder [5]. Cutaneous endometriosis is an extremely rare entity (0.5–1%) which usually occurs secondary to previous surgical

excision in >70% of cases while spontaneous (primary) umbilical endometriosis is seen in <30% of cases [6,7]. However, this is a rare case of a patient presenting with umbilical and left ovarian endometriosis coexisting with uterine myomas. Most of the patients with the primary type do not present with pelvic endometriosis [8]. Notably, the index case though presenting with primary umbilical endometriosis also had associated left ovarian endometriomas.

The pathophysiology of endometriosis is still not well understood. Most at times, single theory cannot explain the pathogenesis of endometriosis. Multiple etiopathogenesis including genetic susceptibility and environmental factors has also been advocated. The presence of both pelvic and extrapelvic (umbilical) endometriosis can be explained by the multifactorial etiopathogenesis. Various theories have been presented to explain the pathophysiology of endometriosis such as metaplastic theory, induction theory, theory of dispersion and transplantation, and theory of ectopic endometrial implantation through retrograde menses [9].

Endometriosis coexisting with uterine myomas has also been reported in some few publications [10,11]. Chung *et al.* have reported the left ovarian endometrioma coexisting with myoma in a patient with nodular histiocytic and mesothelial hyperplasia [11]. In a review by Nezhath *et al.* showed that 181 (87.1%) patients had

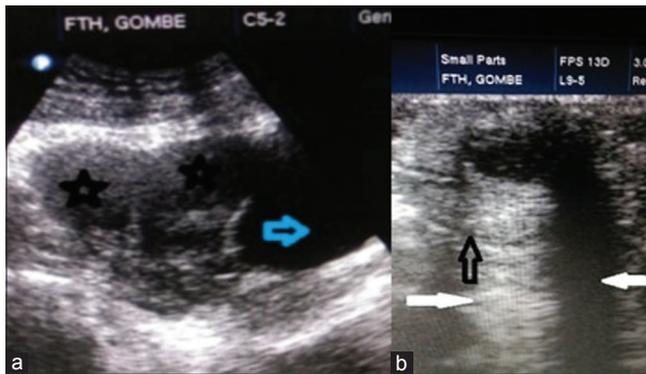


Figure 1: (a) Sagittal pelvic ultrasound scan of the uterus showing multiple well-defined hypoechoic rounded masses (black stars); (b) Superficial USS of the umbilical region demonstrated a well-defined rounded umbilical mass with heterogeneous echotexture (open arrows). Posterior acoustic shadowing and enhancement were both demonstrated (white arrows)

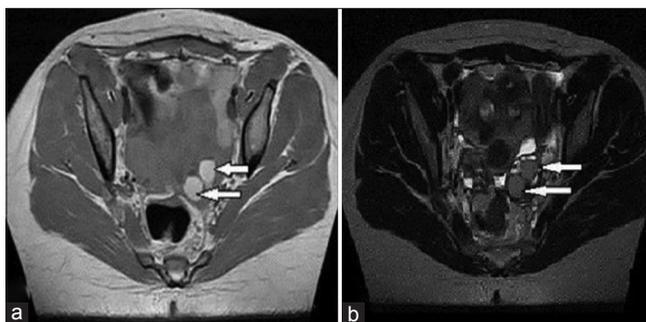


Figure 2: Magnetic resonance imaging of the pelvis showing axial images at the level of the left ovary. (a) T1-weighted image. (b) T2-weighted image. Multiple (two) oval masses in the left ovary (white arrows) seen. Note the shading sign phenomenon in the two images

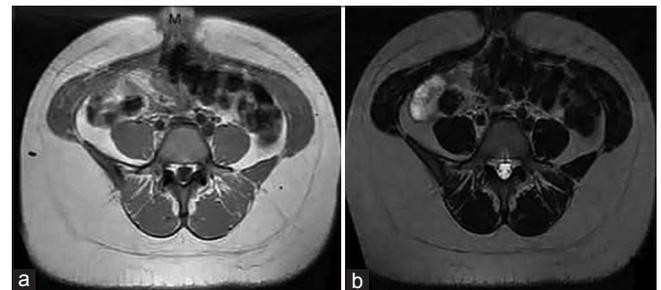


Figure 3: Axial T1-weighted (a) and T2-weighted (b) Magnetic resonance images at the level of the umbilicus showing an oval umbilical mass (M) representing umbilical endometriosis demonstrating heterogeneous intensity on both T1W and T2W images

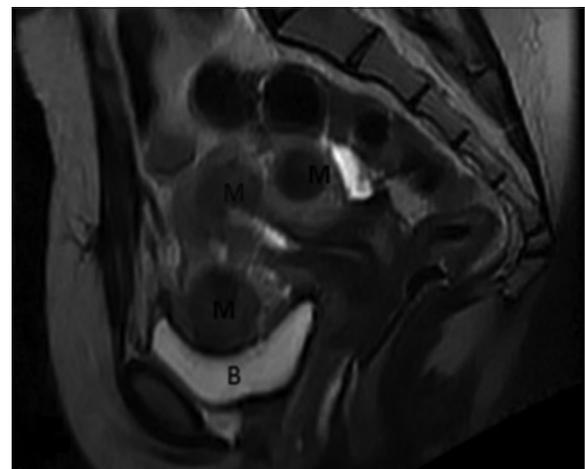


Figure 4: Midsagittal T2-weighted magnetic resonance image of the pelvis demonstrating bulky uterus with multiple (three) well-defined hypointense intramural masses (M) with resultant indentation of the urinary bladder dome (B)

concomitant diagnosis of endometriosis and uterine fibroid [12]. This high prevalence of endometriosis coexisting with uterine fibroid as reported by Nezhath *et al.* may be attributed to the fact that they reviewed laparoscopic series which is a modality superior to other modalities in detecting pelvic endometriosis. Further studies are required to investigate the association of endometriosis with uterine myoma.

The most frequent symptoms of endometriosis are pelvic pain, lower abdominal swelling, dyspareunia, and infertility. Women with umbilical endometriosis usually present with umbilical swelling with cyclical or non-cyclical umbilical bleeding. The patient in this report presented with most of the symptoms above. The differential diagnoses of umbilical endometriosis include Sister Mary Joseph nodule, hematoma, abscess, melanoma, keloid, granulomas, umbilical hernia, urachal cyst, lipoma, and desmoid tumor.

Laparoscopy is the modality of choice for evaluating endometriosis. Imaging may also determine the extent or organs involved with endometriosis and also detect other associated findings. The appearances of endometriosis on USS, computed tomography, or MRI usually depend on the size, location, phase of the patient menstrual cycle, and the composition of the endometrial tissue. USS, especially the transvaginal USS, is usually the first imaging modality of choice for evaluating patients with endometriosis. It is highly sensitive but non-specific and has very limited value in the assessment of peritoneal endometrial implant.

MRI has the multiplanar capability with good soft tissue contrast and high sensitivity in detecting different stages of the degradation of blood products. MRI is also non-invasive and does not use ionizing radiation, thus making it a suitable imaging modality for diagnosis and to follow-up patients with endometriosis. This may explain why the left ovarian endometriomas were not detected on USS in the patient presented but were well demonstrated on MRI. The ability of MRI to detect pigmented hemorrhage which is the main constituents of endometriosis depicting varying age of hemorrhage due to the cyclical bleeding that occurs in endometriosis makes this modality highly sensitive and specific for this lesion.

The index patient had an umbilical endometrial implant that shows heterogeneous intensity in both T1WI and T2WI on MRI which is presumed to be due to various stages of degradation of blood products. Similarly, the ovarian endometriomas demonstrated high signal on T1WI and an intermediate signal on T2WI due to the above reason. Imaging may not only determine the extent of the disease but also, in addition, the multiplicity of organ involvement and can detect other associated features. The index case was initially being evaluated for umbilical endometriosis using USS and MRI which led to the detection of pelvic endometriosis and multiple uterine myomas.

The treatment of choice for umbilical endometriosis is the excision *en bloc* of the lesions with wide margins followed by a subsequent course of medication effective in inducing endometrial atrophy [13]. Laparoscopic pelvic observation should be performed in a patient with umbilical endometriosis to rule

out associated pelvic endometriosis. Ovarian cystectomy is the treatment of choice for ovarian endometriomas and myomectomy for uterine myomas.

## CONCLUSION

Primary umbilical endometriosis is a rare clinical condition and its association with the left ovarian endometriomas and multiple uterine fibroids further presents a complex diagnostic dilemma. The value of cross-sectional imaging, particularly USS and MRI in suspected cases, is highlighted. When evaluating a woman of reproductive age with umbilical mass with no previous surgical history, umbilical endometriosis should be kept in mind as a possible diagnosis.

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