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Case Report

Deep infiltrating endometriosis mimicking abdominopelvic tuberculosis in a premenopausal woman: a diagnostic challenge

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ABSTRACT

Deep infiltrating endometriosis (DIE) is the most severe form of endometriosis and is characterized by infiltration of pelvic structures beyond the peritoneal surface. Its presentation may occasionally mimic other chronic inflammatory conditions, particularly peritoneal tuberculosis, posing a significant diagnostic challenge in tuberculosis-endemic regions. The coexistence of haemorrhagic peritoneal fluid, dense pelvic adhesions, adnexal masses, and elevated inflammatory markers can obscure the diagnosis and delay definitive management. A 42-year-old multiparous woman presented with chronic pelvic pain, dyspareunia, and dyschezia. On per-vaginal examination, the cervix was found to be pulled upwards and was associated with marked cervical motion tenderness. Comprehensive clinical and radiological evaluation was performed. Magnetic resonance imaging (MRI) findings were suggestive of deep infiltrating endometriosis. A tuberculosis workup was also carried out to exclude genital/ peritoneal tuberculosis. Following thorough evaluation, the patient underwent definitive surgical management in the form of total hysterectomy with bilateral salpingo-oophorectomy. The postoperative course was uneventful, and the patient experienced significant symptomatic relief following surgery.

Keywords: Deep infiltrating endometriosis, Dyschezia, Peritoneal tuberculosis, Peritoneal fluid, Pelvic adhesions, Hydrosalpinx, Diagnostic dilemma

INTRODUCTION

Endometriosis is a common yet often underdiagnosed gynaecological disorder characterized by the presence of endometrial glands and stroma outside the uterine cavity. It affects nearly one in ten women of reproductive age and remains a significant cause of chronic pelvic pain, infertility, and poor quality of life.^{1,2} The disease exhibits a wide spectrum of clinical manifestations, ranging from asymptomatic incidental lesions to extensive pelvic disease with severe anatomical distortion.^{1,3} This variability in presentation frequently contributes to diagnostic delays, with many women undergoing prolonged evaluation before a definitive diagnosis is established.^{1,3} Deep infiltrating endometriosis (DIE)

represents the most severe form of the disease and is characterized by lesions penetrating more than 5 mm beneath the peritoneal surface.^{4,10} Unlike superficial peritoneal endometriosis, DIE is associated with extensive fibrosis, chronic inflammation, and dense adhesions involving adjacent pelvic organs.^{3,10} The ovaries, uterosacral ligaments, rectovaginal septum, bowel, bladder, and pelvic sidewall are commonly affected.⁹ As a result, patients may present with a variety of symptoms including chronic pelvic pain, dyschezia, constipation, dyspareunia, urinary complaints, and, in some cases, complex adnexal masses.¹⁰ The infiltrative nature of the disease often leads to significant distortion of pelvic anatomy, making both diagnosis and surgical management challenging. Although endometriosis is a benign

condition, advanced disease can occasionally present in an unusual manner and mimic more serious pathologies such as ovarian malignancy, pelvic inflammatory disease, and peritoneal tuberculosis.^{8,11} Among these, differentiating deep infiltrating endometriosis from peritoneal tuberculosis remains particularly challenging, especially in countries where tuberculosis continues to be highly prevalent.^{6,7,11} Both conditions may manifest with chronic pelvic pain, adnexal masses, hydrosalpinx, pelvic adhesions, peritoneal involvement, ascites, and nonspecific inflammatory changes on imaging. Furthermore, intraoperative findings of dense adhesions and altered pelvic anatomy may closely resemble those encountered in tuberculous pelvic disease.¹¹

The diagnostic dilemma becomes even more pronounced when peritoneal fluid is encountered. In tuberculosis-endemic regions, the presence of ascites and extensive adhesions often prompts an evaluation for abdominal or genital tuberculosis.⁷ However, similar findings may also occur in advanced endometriosis as a consequence of repeated cyclical bleeding, chronic inflammation, and fibrosis.^{8,10} Failure to distinguish between these entities can lead to inappropriate treatment, unnecessary exposure to antitubercular therapy, delays in definitive surgical management, and increased patient morbidity.^{6,11}

In the present report, we describe a case of advanced deep infiltrating endometriosis in a 42-year-old multiparous woman who presented with chronic pelvic symptoms, bilateral adnexal pathology, extensive pelvic adhesions, and peritoneal fluid, raising a strong clinical suspicion of peritoneal tuberculosis. A comprehensive diagnostic workup, including radiological assessment, ascitic fluid analysis, cytological examination, microbiological testing, and surgical exploration, was undertaken to establish the diagnosis. This case highlights the importance of maintaining a broad differential diagnosis when evaluating women with complex pelvic disease and emphasizes the challenges involved in distinguishing advanced endometriosis from peritoneal tuberculosis in routine clinical practice.^{5,9}

CASE REPORT

A 42-year-old multiparous woman (P3L3) presented to the Department of Obstetrics and Gynecology with complaints of dyschezia associated with intermittent lower abdominal pain for six months, and constipation of gradual onset. The abdominal pain was dull aching in nature, non-radiating, and intermittently affected her daily activities. The patient did not report any significant menstrual complaints, including dysmenorrhea, menorrhagia, intermenstrual bleeding, or postcoital bleeding. There was no history of infertility, fever, chronic cough, loss of appetite, weight loss, or contact with a known case of tuberculosis. Her obstetric history was significant for three full-term normal vaginal deliveries. She had undergone bilateral tubal ligation thirteen years earlier and haemorrhoidectomy five years prior to presentation. There was no significant

family history of gynaecological malignancy or tuberculosis. On admission, the patient was hemodynamically stable. General physical examination revealed mild pallor, while systemic examination was unremarkable. Abdominal examination demonstrated mild lower abdominal tenderness without guarding, rigidity, or palpable masses.

On Per Speculum examination the cervix appeared hypertrophied, and on per vaginum examination cervix pulled upwards, uterus size more than multiparous size along with cervical motion tenderness. The uterus was mildly enlarged, approximately corresponding to an 8-week gravid uterus, with restricted mobility suggestive of underlying pelvic adhesions.

Table 1: Routine laboratory investigations were within acceptable limits except for mild anaemia.

Investigations	Findings
Haemoglobin	10.4 g/dl
TLC	5.02 × 103/μl
Neutrophils/ Lymphocytes	65 / 31%
RBC count	3.96 million/ μl
Platelets	298 × 103/ μl
MCV/MCH/MCHC	85.1 fl/26.3 pg/30.9g/dl
ESR	25 mm/hr
TSH	1.00 uIU/ml
Sputum for AFB Stain	No acid-fast bacilli detected
Pap smear	NILM (Negative for intraepithelial lesion or malignancy)
USG pelvis	Bilateral adnexal cysts, hydrosalpinx
MRI pelvis	Deep infiltrating endometriosis with rectal and bowel adhesions
Ascitic fluid ADA	18.9 U/l
Ascitic fluid AFB stain	Negative
Cytology of Ascitic Fluid	4.5 ml of haemorrhagic fluid, no malignant cells
Histopathology	No granuloma, no malignancy

Ultrasonography of the pelvis revealed bilateral adnexal cystic lesions, including a left paraovarian cyst measuring approximately 2.2×2 cm and a right adnexal cystic lesion measuring 3.5×1.9 cm, with associated features suggestive of hydrosalpinx. In view of the complex adnexal pathology, magnetic resonance imaging (MRI) of the pelvis was performed for further characterization. MRI demonstrated a small right ovarian endometriotic cyst with features suggestive of deep infiltrating endometriosis involving the posterior pelvic compartment. Dense adhesions were noted between the rectum and the right ovary, along with adhesions involving adjacent bowel loops. A right paraovarian cyst and oedematous fallopian

tube were also identified. These findings suggested advanced pelvic endometriotic disease with significant anatomical distortion. Despite radiological suspicion of endometriosis, the presence of extensive pelvic adhesions and haemorrhagic peritoneal fluid raised concern for abdominopelvic tuberculosis, particularly given the endemic prevalence of tuberculosis in the region.

Definitive surgical management was undertaken in view of the patient's persistent symptoms, complex adnexal pathology, and extensive pelvic disease. Intraoperatively, extensive pelvic adhesions were encountered, with dense fibrotic bands involving the rectum, bowel loops, adnexa, and surrounding pelvic structures. Multiple endometriotic deposits were identified throughout the pelvis. Bilateral hydrosalpinx and paraovarian cysts were present, and the pelvic anatomy was markedly distorted by chronic inflammatory changes. Exploratory laparotomy revealed dense pelvic adhesions involving the rectum, bowel loops, adnexa, and surrounding pelvic structures, resulting in marked distortion of normal pelvic anatomy. Multiple endometriotic deposits were identified intraoperatively along with bilateral hydrosalpinx, paraovarian cysts, and a congested uterus enlarged to approximately 8 weeks' size. The cervix appeared hypertrophied with multiple Nabothian cysts. Owing to the extent of disease and the patient's completed family, total abdominal hysterectomy with bilateral salpingo-oophorectomy was performed following meticulous adhesiolysis.

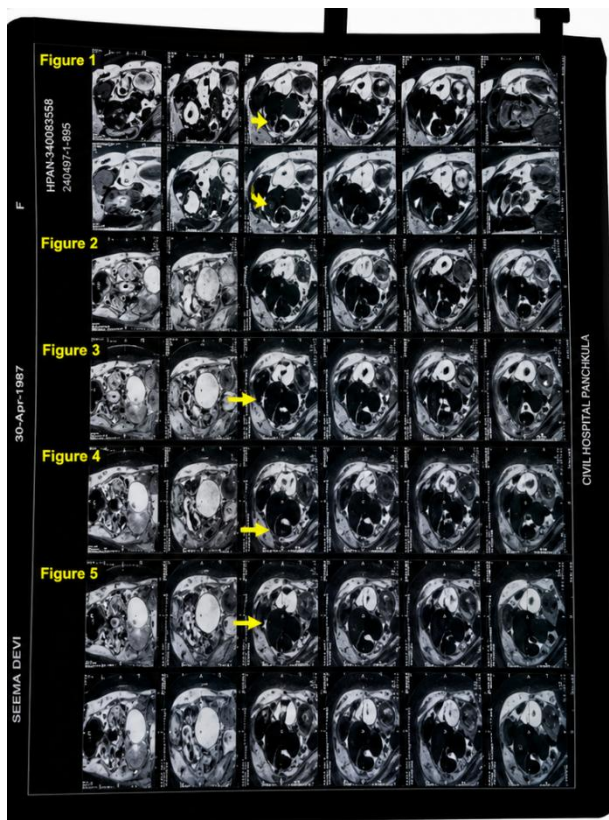


Figure 1: Ultrasonography of the pelvis revealed bilateral adnexal cystic lesions.

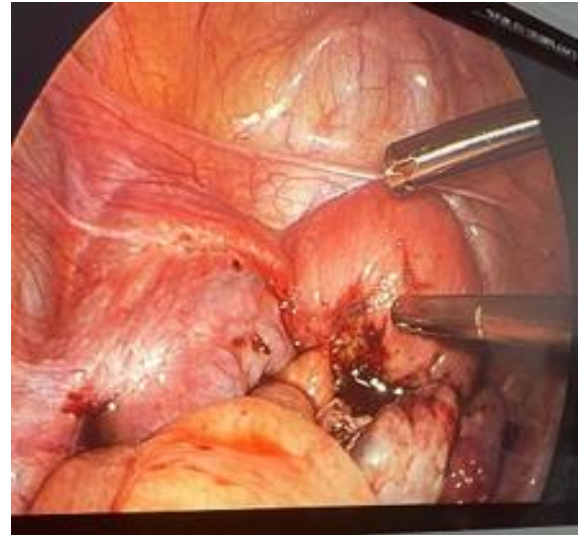


Figure 2: A right paraovarian cyst and oedematous fallopian.



Figure 3: Multiple endometriotic deposits were identified.



Figure 4: Bilateral hydrosalpinx, paraovarian cysts.



Figure 5: Abdominal hysterectomy with bilateral salpingo-oophorectomy.



Figure 6: Chronic cervicitis with squamous metaplasia.

The postoperative period was uneventful and patient was discharged on postoperative day 6. Histopathological examination of the surgical specimen revealed chronic cervicitis with squamous metaplasia, secretory endometrium, a simple cyst of the right ovary, and a left paratubal cyst. The myometrium, bilateral fallopian tubes, and left ovary were histologically unremarkable. Omental biopsy demonstrated fibro-adipocytic tissue with mild chronic inflammation.

Importantly, no granulomas, caseous necrosis, atypia or malignant cells were identified in any of the examined specimens, effectively excluding both tuberculosis and malignancy as the underlying pathology. Histopathological findings, together with the clinical, radiological, microbiological, and operative findings, supported the diagnosis of advanced deep infiltrating endometriosis presenting as a close mimic of peritoneal tuberculosis. At follow-up, the patient reported significant

improvement in abdominal discomfort and bowel symptoms, with no postoperative complications.

Cytological evaluation of peritoneal fluid

In view of the extensive pelvic adhesions and intra-abdominal pathology, peritoneal fluid was subjected to cytological examination. Grossly, approximately 4.5 ml of haemorrhagic fluid was received. Microscopic examination revealed only formed blood elements without evidence of malignant cells. Cytological findings were descriptive and advised clinico-radiological correlation.

Evaluation for tuberculosis

Ziehl–Neelsen staining performed on both sputum and ascitic fluid samples did not demonstrate acid-fast bacilli. Ascitic fluid adenosine deaminase (ADA) level was 18.9 U/l. This value was below the range typically associated with tuberculous peritonitis and was therefore not suggestive of tuberculosis.

Given the extensive adhesions involving the rectum and small bowel loops, surgical management was planned. The patient underwent total abdominal hysterectomy with bilateral salpingo-oophorectomy (TAH+BSO) under general anesthesia. Postoperative recovery was uneventful. The patient was discharged on postoperative day 6 in stable condition with advice for follow-up.

DISCUSSION

DIE remains a diagnostic challenge even in contemporary practice.¹⁰ The present case is noteworthy because the patient presented with extensive pelvic adhesions, bilateral adnexal pathology, hydrosalpinx and peritoneal fluid, findings that closely resembled abdominopelvic tuberculosis.¹¹ In countries such as India, where tuberculosis remains highly prevalent, genital and peritoneal tuberculosis are important considerations in women presenting with chronic pelvic symptoms, ascites, adnexal masses, and adhesive pelvic disease. Both tuberculosis and advanced endometriosis may produce chronic inflammation, fibrosis, bowel involvement, Tubo-ovarian pathology, and altered pelvic anatomy, often making differentiation difficult on clinical grounds alone.¹¹

One of the most challenging aspects of the present case was the presence of haemorrhagic peritoneal fluid. Haemorrhagic ascites is an uncommon manifestation of endometriosis and may raise concern for malignancy or tuberculous peritonitis.⁸ The underlying mechanism is believed to involve recurrent cyclical bleeding from ectopic endometrial implants, resulting in chronic peritoneal irritation, inflammation, and adhesion formation. In the current patient, the combination of haemorrhagic fluid, extensive adhesions, and hydrosalpinx initially prompted a thorough evaluation for tuberculosis.^{3,11} Magnetic resonance imaging played a

crucial role in narrowing the differential diagnosis.⁵ MRI demonstrated a right ovarian endometriotic cyst with features of deep infiltrating endometriosis involving the posterior pelvic compartment and adhesions between the rectum, ovary, and adjacent bowel loops. These findings were highly suggestive of advanced endometriosis.⁶ Nevertheless, because imaging findings can occasionally overlap with those of chronic inflammatory conditions such as tuberculosis, further investigations were necessary.¹²

Malignant transformation of endometriosis, although uncommon, may occur in the form of low-grade ovarian adenocarcinoma, which is associated with a relatively favourable prognosis, as well as ovarian clear cell carcinoma and, less frequently, endometrioid carcinoma.³ Given this potential for malignant transformation, complete surgical excision of endometriotic lesions, along with total hysterectomy and bilateral salpingo-oophorectomy, is generally recommended in perimenopausal women who have completed childbearing.¹⁰

Surgical exploration remains an important diagnostic and therapeutic modality in patients with extensive pelvic disease when non-invasive investigations fail to establish a definitive diagnosis.⁵ In the present case, exploratory laparotomy revealed dense adhesions involving the rectum and bowel loops, bilateral hydrosalpinx, paraovarian cysts, and multiple endometriotic deposits resulting in significant distortion of pelvic anatomy.⁹ These findings correlated well with the preoperative MRI findings and explained the patient's chronic pelvic symptoms and bowel complaints.¹²

This case highlights the importance of maintaining a broad differential diagnosis when evaluating women with complex pelvic pathology. While tuberculosis is a common consideration in endemic regions, clinicians should remain aware that advanced endometriosis may closely mimic tuberculous disease both clinically and radiologically. Careful integration of clinical findings, imaging studies, microbiological investigations, pathological evaluation, and intraoperative assessment is essential for accurate diagnosis and appropriate management.¹¹

CONCLUSION

Deep infiltrating endometriosis may occasionally present with extensive pelvic adhesions, hydrosalpinx, bowel involvement, and haemorrhagic peritoneal fluid, creating a clinical picture that closely resembles peritoneal tuberculosis. In tuberculosis-endemic regions, this overlap can pose a significant diagnostic challenge and may lead to delayed or inappropriate management if not carefully evaluated. The present case emphasizes the importance of a systematic diagnostic approach incorporating detailed imaging, microbiological testing, cytological analysis, histopathological evaluation, and surgical assessment. Although tuberculosis remained a major differential

diagnosis throughout the patient's evaluation, the absence of microbiological and histopathological evidence of tuberculous disease, together with characteristic radiological and intraoperative findings, ultimately established the diagnosis of advanced deep infiltrating endometriosis.

Clinicians should consider endometriosis in the differential diagnosis of women presenting with haemorrhagic peritoneal fluid and extensive pelvic adhesions, even in regions where tuberculosis is highly prevalent. Early recognition and timely intervention are crucial for avoiding unnecessary treatment and achieving optimal patient outcomes.

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