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Case Report

Disseminated peritoneal leiomyomatosis presenting as port site hernial sac contents following laparoscopic myomectomy

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ABSTRACT

Disseminated Peritoneal Leiomyomatosis (DPL) is a rare, benign condition characterized by the proliferation of multiple smooth muscle-like nodules on the peritoneal surfaces. It is strongly associated with iatrogenic seeding following uterine surgeries, particularly laparoscopic myomectomy with power morcellation. We report the case of a 37-year-old, para 2, live 2 (P2L2) females with a history of laparoscopic myomectomy 4 years back. She presented with an 8-month history of dull abdominal pain and a progressive abdominal swelling. Clinical examination and imaging revealed a large 5x5 cm left port site incisional hernia and fibroid uterus of 10 weeks size. Both magnetic resonance imaging (MRI) and contrast-enhanced computed tomography (CECT) confirmed the hernia, and surprisingly, identified multiple nodular, enhancing lesions within the hernia sac, as well as in the left iliac fossa, consistent with peritoneal fibroids. The patient underwent an elective exploratory laparotomy, which confirmed the findings. The hernia sac contained multiple firm nodules consistent with fibromatosis. A total abdominal hysterectomy, bilateral salpingectomy, and excision of all visible peritoneal lesions was performed, followed by an incisional hernia repair with onlay mesh. The intraoperative findings and histopathology were consistent with DPL. This case highlights an unusual presentation of DPL where the lesions were found as the primary contents of an incisional hernia. DPL should be considered in the differential diagnosis for new peritoneal masses or unusual hernia contents in female patients with a history of uterine surgery.

Keywords: Disseminated peritoneal leiomyomatosis, Iatrogenic leiomyoma, Laparoscopic morcellation, Parasitic fibroid, Port Site hernia

INTRODUCTION

Disseminated Peritoneal Leiomyomatosis (DPL) is a rare entity involving multiple benign smooth muscle tumors proliferating on the peritoneum, omentum, and pelvic surfaces.[1] The condition predominantly affects premenopausal women, strongly suggesting a hormone-dependent etiology. While some cases are linked to endogenous hormonal states (e.g., pregnancy) or oral contraceptive use, the most widely accepted hypothesis for many modern cases is iatrogenic implantation.[2]

Specifically, the use of power morcellation during laparoscopic uterine procedures (myomectomy or hysterectomy) has been implicated in a rising number of DPL cases.[3] This technique, while facilitating minimally invasive surgery, can aerosolize and disperse small, viable myometrial fragments throughout the peritoneal cavity. These fragments can then implant on peritoneal surfaces and, under the influence of ovarian hormones, proliferate into distinct nodules, effectively creating a "parasitic" fibroid-like state.[4] This has led to significant controversy and FDA warnings regarding uncontained power morcellation.[5]

While DPL is a known, albeit rare, complication of morcellation, presentations can be varied. Most cases are discovered incidentally during subsequent surgeries or on imaging. We present a highly unusual case of symptomatic DPL in a 37-year-old woman, status-post laparoscopic myomectomy, where the leiomyomatous nodules themselves formed the primary contents of a large, symptomatic incisional hernia.

CASE REPORT

A 37-year-old female, Para 2 Living 2, presented to the Gynaecology Outpatient Department at the Institute of Maternal and Child Health, Kozhikode in 2025. Her chief complaints were a dull, aching pain in the lower abdomen and back, and a palpable swelling in the abdomen that had been progressively enlarging over the past 8 months. She reported that the swelling seemed to be aggravated during her menstrual periods.

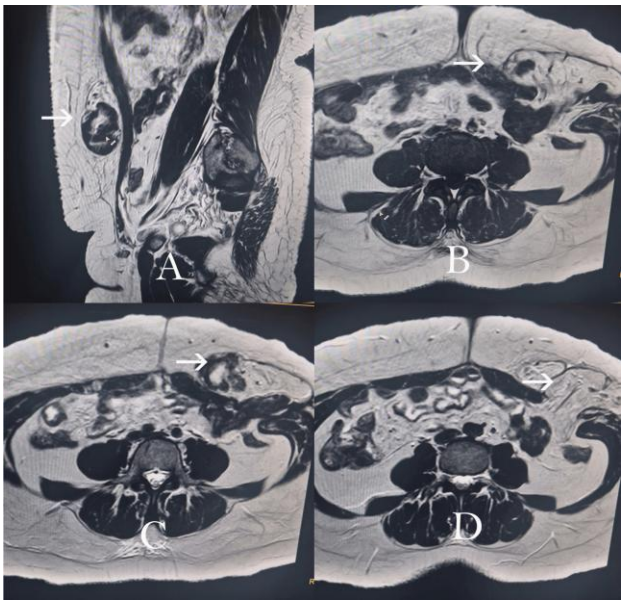

Figure 1: Preoperative magnetic resonance imaging (MRI).

(A) Sagittal T2-weighted MRI image showing the anterior abdominal wall defect with a characteristic T2-hypointense soft tissue mass (arrow); (B) Axial T1-weighted MRI image showing the hernia sac contents to be isointense to the surrounding muscle (arrow), distinguishing it from fluid or other cystic structures; (C-D) Serial axial T2-weighted MRI images demonstrating the left-sided anterior abdominal wall incisional hernia containing omental fat and multiple well-defined, hypointense nodules (arrows) distinct from the surrounding high-signal subcutaneous fat, consistent with leiomyomatosis.

Her past surgical history was significant for a laparoscopic myomectomy with morcellation performed in 2021 for a 10×8 cm intramural fibroid via extension of left port incision. She also had a history of subclinical hyperthyroidism, for which she was not currently on medication.

On clinical examination, her vitals were stable. The abdominal examination revealed a soft, non-tender abdomen with a palpable defect of approximately 5×5 cm in the left para-umbilical region. A positive cough impulse was present, confirming an incisional hernia. A bimanual pelvic examination revealed a uterus enlarged to an approximately 10-week gestational size with intramural fibroids.

An MRI of the abdomen and pelvis performed in May 2025, revealed a bulky uterus (12×6×6.8 cm) with an intramural/subserosal fibroid (3.7×3.6 cm). A large anterior abdominal wall defect (4×3.3 cm) was noted in the left iliac fossa/lumbar region, consistent with a left port incisional hernia. The hernia sac was found to contain omental fat and multiple irregulars, T2-hypointense, mildly enhancing lesions, with the largest measuring 4.5×3.8 cm. An additional elongated, T2-hypointense lesion (8.9×3.9 cm) was seen in the left iliac fossa, extending into the hernia sac. The radiological impression was an incisional hernia with contents suggestive of disseminated peritoneal fibroids (DPL) (Figure 1).

A subsequent Contrast-Enhanced Computed Tomography (CECT) of the whole abdomen in August 2025 confirmed a 5.3×3.5 cm defect in the left abdominal wall with herniation of omental fat. It re-demonstrated the "elongated and lobulated heterogeneously enhancing peritoneal lesion" (8.8×3.7 cm) and two other nodular lesions (largest 4.2×4.5 cm) within the hernial sac, solidifying the impression of DPL (Figure 2).

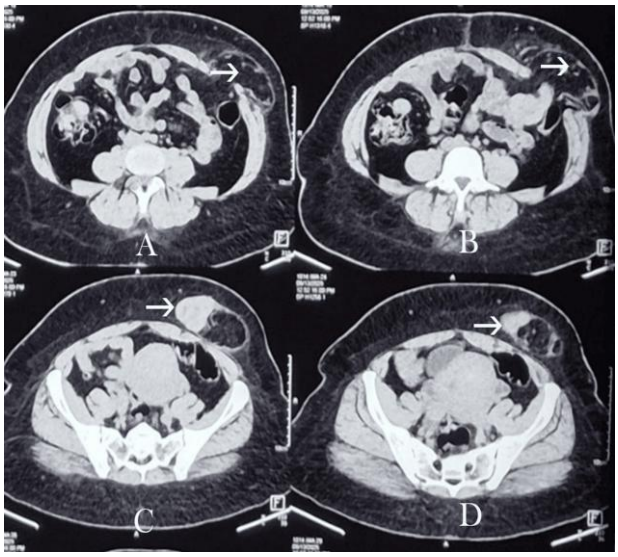

Figure 2: Preoperative computed tomography (CT) imaging.

(A-D) Serial axial cuts of a contrast-enhanced CT scan of the abdomen. The images demonstrate a left-sided anterior abdominal wall defect consistent with an incisional hernia. The white arrows point to the hernia sac, which contains herniated omental fat and well-defined, heterogeneously enhancing soft tissue nodules (parasitic fibroids), distinguishing them from simple fatty hernia contents.

The patient was planned for elective surgery. She underwent an exploratory laparotomy. Intraoperatively, the uterus was found to be enlarged. A 5×5 cm ventral hernia defect was confirmed. The hernia sac was opened to reveal contents that "resembled peritoneal/omental fibromatosis," with multiple distinct lesions present (Figure 3).

Figure 3: Intraoperative findings.
(A) Excision of the large, fleshy, lobulated leiomyomatous mass (arrow) that was found acting as the content of the hernial sac; (B) View of the greater omentum studded with small, firm, pale leiomyomatous nodules (arrows); (C) A large, distinct parasitic fibroid (arrow) identified and excised from the pelvic cavity, separate from the uterus.

A total abdominal hysterectomy and bilateral salpingectomy were performed. All visible peritoneal lesions, including those within the hernia sac, were excised in toto. The incisional hernia was subsequently repaired with an onlay polypropylene mesh.

The histopathology report described multiple pieces of fibrofatty tissue attached to multiple grey-brown nodular masses. The findings were consistent with disseminated peritoneal leiomyomatosis (Figure 4).

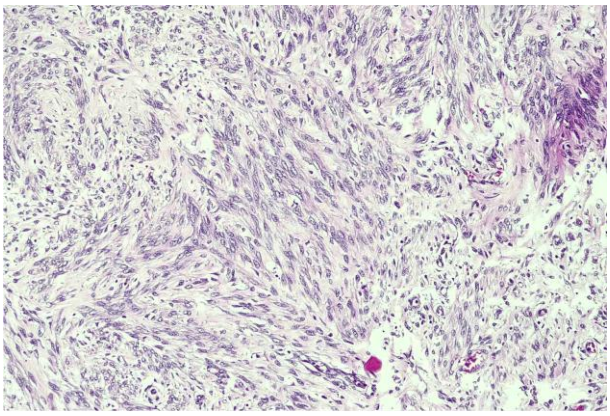

Figure 4: Histopathological examination.
(A) Microscopic section (Hematoxylin and Eosin stain, 10x magnification) showing intersecting fascicles of benign spindle-shaped smooth muscle cells with eosinophilic cytoplasm and uniform cigar-shaped nuclei. The absence of nuclear atypia, tumor cell necrosis, or significant mitotic activity confirms the diagnosis of benign leiomyoma.

DISCUSSION

This case is a unique example of DPL where the disease presented not as an incidental finding, but as the symptomatic contents of an abdominal wall hernia. The patient's history of a laparoscopic myomectomy four years prior is the most significant etiological factor, making iatrogenic seeding the presumptive diagnosis.

The 8-month history of a progressively enlarging, hormone-sensitive (worse during menses) swelling aligns perfectly with the growth of estrogen- and progesterone-receptive myometrial implants.[2,4]

The diagnosis of DPL rests on a high index of suspicion in the correct clinical context. Radiologically, it must be differentiated from other, more malignant peritoneal conditions, such as peritoneal carcinomatosis, mesothelioma, or lymphoma, as well as benign conditions like splenosis or peritoneal tuberculosis.[6] MRI is the modality of choice, as the nodules of DPL classically demonstrate low signal intensity on T2-weighted images, similar to uterine fibroids, which distinguishes them from most malignant masses that are typically T2-hyperintense.[7] In the present case, the MRI findings of T2-hypointense nodules were classic and critical for the pre-operative diagnosis.

Management of DPL is tailored to the patient's symptoms, age, and desire for future fertility. For asymptomatic, incidental findings, a "watch-and-wait" approach with surveillance imaging is an option. For symptomatic disease, surgical management is the mainstay.[4] The primary goal is surgical debulking- excising all visible nodules-to alleviate symptoms. This is often combined with a total hysterectomy to remove the primary source (in case of uterine fibroids) and a bilateral salpingo-oophorectomy (BSO) to induce a hypoestrogenic state and prevent recurrence.

In our premenopausal patient, a total abdominal hysterectomy and bilateral salpingectomy were performed, but the ovaries were preserved. This approach is a reasonable compromise to alleviate the current disease burden while avoiding premature surgical menopause. However, it necessitates counselling the patient on the risk of recurrence, as the preserved ovaries will continue to produce hormones that could stimulate any microscopic, non-resected implants.[8] Medical management, primarily with GnRH agonists to chemically induce menopause, can be used as an adjunct, but it is not a definitive long-term solution.

While DPL is overwhelmingly benign, rare cases of malignant transformation to leiomyosarcoma have been reported, justifying thorough histopathological analysis of all excised nodules and long-term follow-up.[7,8]

CONCLUSION

Disseminated Peritoneal Leiomyomatosis, while rare, is an important and likely under-reported iatrogenic complication of laparoscopic power morcellation. This case highlights a unique and unusual presentation within an incisional hernia sac, underscoring that DPL nodules can grow anywhere in the peritoneal cavity, including in anatomical defects.

This case serves as a powerful reminder to clinicians to maintain a high index of suspicion for DPL in any woman presenting with new abdominal or pelvic masses, or unusual hernia contents, who has a history of uterine surgery, especially with morcellation. The continued adherence to safe surgical practices, such as in- bag morcellation or avoiding morcellation altogether, when possible, is critical to prevent this iatrogenic condition.

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