Case Report

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Disseminated Peritoneal Leiomyomatosis: An Unusual Complication of Laparoscopic Myomectomy

Obstetrics and Gynaecology Section

R VAISHNAVI[1], SOBHA S NAIR[2], S SUDHA[3], PV NITU[4]

ABSTRACT

Disseminated Peritoneal Leiomyomatosis (DPL) is characterised by multiple smooth muscle tissues over the peritoneal surface of the pelvic and abdominal cavity. Possible causes of DPL include hormonal factors, subperitoneal mesenchymal stem cell metaplasia, genetic factors, or iatrogenic factors. Hereby, the authors represents a case of DPL in a 42-year-old female with a history of two Laparoscopic Myomectomies. She presented with complaints of abdominal distension and bilateral lower limb pain lasting eight months. She underwent a robotic hysterectomy with bilateral salpingectomy and the removal of intraperitoneal nodules. Intraoperative findings showed a mass resembling leiomyoma over the uterus, mesentery, spleen, and rectosigmoid. She was discharged on postoperative day 4 and has been asymptomatic for the past two years. Robotic surgery is an emerging surgical modality in the treatment of DPL due to its better precision and ease of accessibility to upper abdominal organs. More importantly, recovery time is enhanced, and it reduces the duration of hospital stay.

Keywords: Hepatosplenomegaly, Intraperitoneal nodules, Leiomyoma, Power morcellation

CASE REPORT

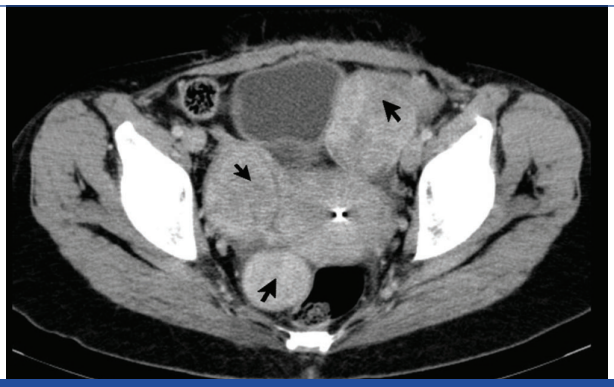
A 42-year-old female P1L1 (Para 1, Living 1) presented to the Emergency Department with complaints of abdominal distension and bilateral lower limb pain lasting eight months since December 2018. She had previously been evaluated at another tertiary centre, where an ultrasound of the abdomen revealed hepatosplenomegaly, a hyperechoic mass in the left suprarenal area, a left adnexal mass, and a fibroid uterus. Consequently, she was referred to the Gynaecology Department for further evaluation due to suspected malignancy.

She reported no history of heavy menstrual bleeding, pain during cycles, weight loss, loss of appetite, or fever. Her bowel and bladder habits were normal, and she had not used oral contraceptive pills. The patient had a Copper-T (Cu-T) in-situ. Furthermore, she had undergone laparoscopic myomectomy twice, in 2007 and 2010, had a Lower Segment Cesarean Section (LSCS) in 2010, and underwent left inguinal hernia repair in 2016. There was no family history of fibroids or malignancy.

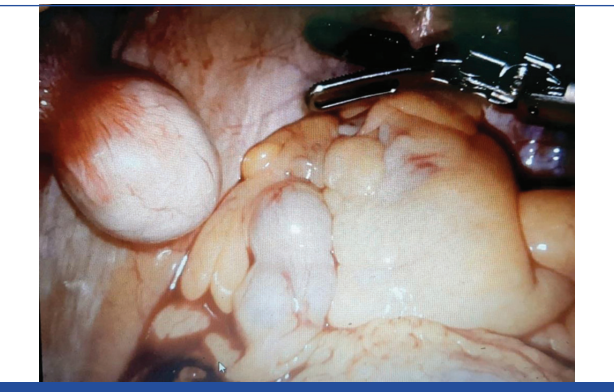
Upon examination, she was conscious and oriented to time, place, and person with stable vitals. A palpable spleen and a 14-16 weeks size mass over the left iliac fossa extending to the lumbar region were noted. Per speculum examination revealed a healthy cervix and vagina. Per vaginal examination showed a bulky uterus with a 5×4 cm mass felt in the right fornix, and a 10×8 cm mass filling the pouch of Douglas and left fornix, extending up to the pelvic side wall, with a firm consistency. Per rectal examination showed a free rectovaginal septum and rectal mucosa. Her Complete Blood Count (CBC), Renal Function Test (RFT), Liver Function Test (LFT), Electrolytes, and Tumour markers (CEA-0.50, CA-125-20.41) were within normal limits.

The Computed Tomography (CT) scan report showed hepatosplenomegaly with multiple enhancing solid nodules in the pelvis and left hypochondrium [Table/Fig-1]. The distal ureters were splayed by the mass. It could represent mesenteric fibromatosis/ non-Hodgkin's lymphoma/peritoneal carcinomatosis.

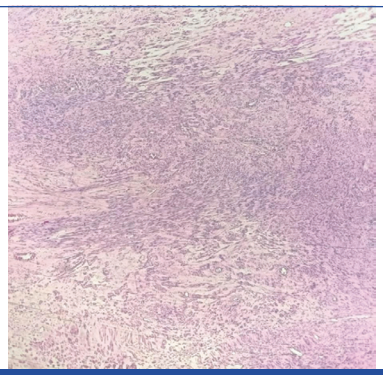
Due to a history of laparoscopic myomectomy twice before, authors suspected Diffuse Leiomyomatosis (DLP), and a Gastrointestinal (GI) surgeon was involved as the procedure was extensive. The patient underwent a robotic hysterectomy, bilateral salpingectomy, and excision of intraperitoneal lesions under general anaesthesia [Table/Fig-2]. Repair of small bowel loops with serosal injury was performed using 3-0 Prolene. The specimen was retrieved vaginally and sent for histopathological examination. The histopathology report revealed leiomyoma in the uterus, mesentery, spleen, and rectosigmoid [Table/Fig-3]. Vault and port sites were closed. Intraoperative



[Table/Fig-1]: CT abdomen soft tissue window at the level of pelvis- arrows pointing shows multiple fibroids almost filling the pelvis, displacing the bladder anteriorly and large bowel posteriorly. Metallic artefact seen within uterus- Cu-T.



[Table/Fig-2]: Intraoperative picture depicting the robotic arm and the pelvic tumour.



[Table/Fig-3]: Microscopic examination showed a typical leiomyoma without malignancy. Intersecting fascicles of monotonous spindle cells with indistinct borders, esonophilic cytoplasm, cigar shaped nuclei with tapered ends and small nucleoli (Haematoxylin and Eosin staining, 10×).

findings included a fibroid uterus with a mass resembling fibroids in the mesentery measuring 12×10 cm, a mass on the left pelvic wall measuring 3×3 cm, and a mass in the rectosigmoid measuring 3×3 cm. Small bowel loops were adherent to the mesentery and the mass. Left Double J (DJ) stenting and right Indocyanine green instillation were performed intraoperatively due to distal ureters being splayed by the mass as reported by the CT scan. In the postoperative period, enhanced recovery measures were implemented, and the patient received appropriate antibiotics and analgesics. Chest physiotherapy, incentive spirometry, and thromboprophylaxis were provided. She was discharged on the 4th postoperative day and instructed to attend regular follow-up appointments. At her six-week postoperative follow-up, she had no new complaints and a normal physical examination.

DISCUSSION

Leiomyoma is a common gynaecologic and uterine neoplasm. They are monoclonal myometrial tumours with a lifetime risk of incidence of 70% in women of European origin and 80% in women of African origin [1]. DPL is characterised by multiple fibroid nodules on the omentum and peritoneal surfaces, grossly mimicking disseminated carcinoma. The incidence of DPL is 0.1-1% [1,2]. A review of the literature supports that an iatrogenic cause (Laparoscopic uterine fibroid power morcellation) may be an important factor for the secondary dissemination of fibroids [1-4]. The overall incidence of DPL after laparoscopic uncontained morcellation was 0.12-95% [4,5]. Around 12,200 laparoscopic myomectomy surgeries from 2011 to 2020 identified only 13 cases of iatrogenic DPL [3].

Iatrogenic causes of DPL include previous myomectomy and hysterectomy [4]. Power morcellation of the myoma during myomectomy, hysterectomy helps in tumour dislocation and implantation in other sites [4]. Currently, not more than 200 cases of Lymphoproliferative Disease (LPD) have been revealed worldwide. The majority of patients with DPL remain asymptomatic or may have non specific symptoms. The current patient presented with abdominal distension and lower limb pain. On CT scan, DPL is usually reported as well-circumscribed multiple nodules with contrast enhancement characteristic of myometrium or uterine fibroids. Histopathology is the only reliable way of confirming the diagnosis. Strong clinical suspicion of DPL should be made in a case with a history of myomectomy with morcellation, as in the present case. Similar case reports have been reported with incidentally detected mass abdomen and CT revealing a solid tumour in the abdominal cavity with a prior history of myomectomy with the usage of power morcellation. A cohort of 13 cases with iatrogenic LPD diagnosed and treated at Peking Union Medical College Hospital from 2011 to 2020 was reported; all the patients had a history of laparoscopic myomectomy with uncontained morcellation. The interval between the initial laparoscopic surgery and the first diagnosis of DPL was, on average, 6.08 years (range 1-12) [5].

Kumar S et al., described one case of iatrogenic LPD analysed by a US-guided biopsy and received a single dose of Gonadotropin Releasing Hormone (GnRH)-a, which led to a trivial reduction in the size of the mass [6]. However, surgery remains the mainstay of therapy, and chemotherapy is reserved only for patients with malignant transformation.

An iatrogenic cause (Laparoscopic uterine fibroid power morcellation) may be an important factor for the secondary dissemination of fibroids [7,8]. The patient underwent Robotic hysterectomy and had a small bowel serosal tear, which was sutured. The patient was discharged on the 4th postoperative day.

CONCLUSION(S)

Minimally invasive (Robotic) surgery helps in the complete removal of the nodules from the upper abdomen because of its accessibility, precision, and ease of technique. Even though DPL is a benign pathological condition, it has the chance of recurrence and malignant potential. Therefore, follow-up is essential in the case of DPL even after surgery.

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PARTICULARS OF CONTRIBUTORS:
1. Junior Resident, Department of Obstetrics and Gynaecology, Amrita Institute of Medical Sciences and Research Centre, Cochin, Kerala, India.
2. Professor, Department of Obstetrics and Gynaecology, Amrita Institute of Medical Sciences and Research Centre, Cochin, Kerala, India.
3. Professor, Department of Obstetrics and Gynaecology, Amrita Institute of Medical Sciences and Research Centre, Cochin, Kerala, India.
4. Additional Professor, Department of Anaesthesia, Amrita Institute of Medical Sciences and Research Centre, Ernakulam, Kerala, India.

NAME, ADDRESS, E-MAIL ID OF THE CORRESPONDING AUTHOR:
Dr. Sobha S Nair,
Edapally, Ernakulam-682024, Kerala, India.
E-mail: drsobhasnair@gmail.com

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