Post-morcellation Parasitic Fibroids: A Case Report

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ABSTRACT

Background: Uterine fibroids are histologically benign tumors that originate from smooth muscle cells and usually seen in the genitourinary tract such as in the vulva, ovaries, uterus, and urinary bladder but may arise in nearly any anatomic site. Leiomyomas that become adherent to surrounding structures (e.g., the broad ligament, omentum, or retroperitoneal connective tissue) develop an auxiliary blood supply and lose their original attachment to the uterus, thus becoming “parasitic.” These lesions may manifest as extrauterine pelvic masses that compress the urethra, bladder neck, or ureter and may produce symptoms of varying degrees of urinary outflow obstruction or secondary hydronephrosis. We herewith report the relationship of power morcellation and the development of parasitic fibroids in two patients after laparoscopic hysterectomy.

Case description: Case 1: A 30-year-old patient presented to the hospital with an abdominal mass that was progressively increasing over a 2-year period. The histology of the mass showed interlacing bundles of benign smooth muscle fibers consistent with a leiomyoma. Surgical excision of the mass was done. Case 2: A patient of 41 years nulligravida presented to the hospital with complaints of pain in the abdomen, continuous dull aching type of pain that relieved on medication for 2 months, and a palpable mass per abdomen since 1 month. Ultrasound findings showed a large mass in pelvis posterior to uterus, likely indicating parametrial fibroid or ovarian fibroid. Total laparoscopic hysterectomy with open myomectomy treatment was done for the patient.

Conclusion: Parasitic leiomyomas are caused following laparoscopic myomectomy or hysterectomy. Given the potential sequelae of retained fragments, careful attention to remove all residual specimens is warranted, and morcellation should be done in a containment bag.

Keywords: Morcellation, Parasitic leiomyoma, Uterine fibroid.

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INTRODUCTION

Uterine fibroid is the most frequently seen benign gynecological tumor of the female genital tract. Although it has a relatively high prevalence rate of around 40% in women aged 40 years and older, the majority of the patients with uterine fibroids are asymptomatic. Many different treatment modalities have been used for symptomatic patients, ranging from medical to surgical interventions. Surgical management may be performed through laparotomy or minimally invasive surgery, among others.

The advent of power morcellators has made it easy for large leiomyomas to be removed laparoscopically with less blood loss, shorter hospital stay, and faster recovery time. There are many methods for tissue retrieval, such as through a mini-laparotomy incision or through a colpotomy, and they are becoming less popular. But we need to keep in mind that the fragmentation of the fibroids using the morcellator may also lead to peritoneal seeding, which, if not detected early at the time of the operation, may grow to form parasitic leiomyomas (Figs 1 and 2).

Uterine fibroid growth is dependent on the sex steroid hormones, estrogen, and progesterone. Studies from in vitro and animal models over decades suggest that estradiol (E2) plays a central role in myoma growth via its receptor, estrogen receptor α (ERα). Most medical treatments such as the gonadotrophin-releasing hormone agonist (GnRHa), aromatase inhibitors (AIs), selective estrogen receptor modulators (SERMs), progestins, and selective progesterone receptor modulators (SPRMs) reduce menstrual bleeding in patients with myoma. It is theorized that exposure to estrogen and progesterone could be a risk factor for the development of parasitic myomas as only GnRHa, AI, and SPRMs treatment options can reduce both myoma volume and menstrual bleeding.

CASE DESCRIPTION

Case 1

A patient of aged 30, para 1 living 1, presented with an abdominal mass that was progressively increasing over a 2-year period. The mass although not painful was spread across all four quadrants and predominantly more on the left side of the abdomen. On palpation, the mass was firm, nontender, and mobile in transverse direction. Three years earlier, she had undergone laparoscopic myomectomy for a cervical fibroid. An 8 × 8 cm fibroid was removed with power morcellator. One year back, she underwent LSCS which was uneventful. The patient also complained of persistent menorrhagia and dysmenorrhea since the previous surgery and was under medication for the same. These included tranexamic acid and mefenamic acid with the onset of menses, which provided good symptom relief. There was no symptoms of anemia, such as fatigability, palpitations, or dyspnea, and the patient was not on any hematinic.
Her papanicolaou smears for cervical cancer screening were up to date with normal cytology. She had no urinary symptoms such as frequency of micturition, dysuria, or incomplete voiding nor bowel symptoms such as constipation. On palpatory examination, it revealed an anterior abdominal wall mass in the left iliac fossa and which was overlying the previous left laparoscopy port.
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A patient aged 41 years and nulligravida presented with complaints of abdomen pain, continuous dull aching type of pain that was relieved on medication for 2 months duration, and a palpable abdominal pain, abdominal mass or pressure, abdominal distention, pelvic pain, abdominal mass or pressure, abdominal distention, and vaginal bleeding.

A benign smooth muscle tumor that is distant from the uterus in a patient with a history of laparoscopic myomectomy with morcellation usually raises the suspicion of a parasitic leiomyoma. The exposure of these tumors to steroid hormones and growth factors plays an important role in their growth. This can also be one deciding factor to differentiate this benign condition from other malignant abdominal conditions. The initial investigation should always include a pelvic ultrasound. To differentiate benign leiomyomas from other solid pelvic and abdominal tumors, MRI come in handy. The nondegenerated myomas are typically hypointense on T2-weighted images and isointense on T1-weighted images. The difficulty in differentiating the benign leiomyoma from the malignant leiomyosarcoma emphasizes the need for a thorough clinical history and histological diagnosis.

In a case reported, it was seen that uterine leiomyoma particle was growing in an abdominal wall incision after laparoscopic retrieval, suggesting unintentional implantation at the site of removal through the trocar sleeve. In a study by Hutchins and Reinoehl, they reported a retained myoma after laparoscopic supracervical hysterectomy with morcellation which was an infarcted myoma 5 × 4 cm and was retrieved by exploratory laparotomy.

Tumor markers are usually used to identify leiomyosarcoma in cases of suspected malignancy and treated by excision. This would be achieved through laparoscopy with good outcomes or through laparotomy, especially in cases of large myomas or suspected malignancy.

To prevent the potential sequelae of retained fragments, all residual specimens need to be removed. Also, the patient needs to be placed in reverse Trendelenburg position after morcellation and copious irrigation of the abdomen, and pelvis may be helpful in washing small pieces. A thorough evaluation of the abdomen and pelvis should be performed to remove any tissue remaining.

The morcellation can be performed in a containment bag that reduces the spread of the morcellated fragments. Whenever malignancy is suspected, morcellation should be avoided and large specimens can be retrieved from the abdominal cavity by bi secting or by cutting them into small portions that can later be removed colpotomy or minilaparotomy.
**CONCLUSION**

A rare late complication of power morcellation is parasitic leiomyomas that are caused following laparoscopic myomectomy or hysterectomy. Commonly seen symptoms are abdominal/pelvic mass that may require surgical excision. During power morcellation, care should be taken to prevent excessive fragmentation of the tissues, which may then become implanted and lead to formation of parasitic myomas. Morcellation should be done in a containment bag.

The cases shown here reiterate the need for removal of all fragments, however minute they are, after morcellation. Knowledge of the potential complication in retained morcellated fragments of myomatous uterus and the associated imaging findings, as well as the clinical history, is essential for the proper diagnosis of such lesions.

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