

Case report

Diffuse peritoneal leiomyomatosis status post laparoscopic hysterectomy with power morcellation: A case report with review of literature



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ARTICLE INFO

Article history:

Received 23 November 2016

Received in revised form 28 December 2016

Accepted 1 January 2017

Available online 3 January 2017

Keywords:

Fibroids

Parasitic myomas

Hysterectomy

Power morcellation

Laparoscopy

Abdominal pain

1. Introduction

Uterine fibroids are benign smooth tumors of the uterus, typically affecting women during the middle and later reproductive years, and are the leading cause for hysterectomy in the United States. In recent years, with advancement of surgical and laparoscopic techniques including the use of power morcellation, there have been an increase in a rare but important entity known as parasitic myomas (Nezhat and Kho, 2010). Parasitic leiomyomas, also known as extrauterine fibroids, is a condition found in women who underwent laparoscopic myomectomy and hysterectomy using morcellation device. Although extrauterine fibroids still grow in a benign fashion, they can be dangerous depending on their location, particularly if they involve the heart or lungs (Fletcher, 2013). The exact prevalence of the disease is unknown with fewer than 100 cases reported. A literature search of PubMed database identifying prior case reports from 2015 to 2016 with keywords: “parasitic fibroids,” “parasitic myomas,” “leiomyomatosis,” and “morcellation” found 9 publications meeting the selection criteria (Table 1). Here, we report a case of diffuse peritoneal leiomyomatosis in a woman with fibroids after receiving laparoscopic hysterectomy with power morcellation.

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2. The case

A 39-year-old (gravid 2, para 1) woman presented to outpatient clinic for diffuse abdominal discomfort for the past six months. Her personal history was significant for uterine fibroids status post laparoscopic hysterectomy with power morcellation three years ago. On examination, she had mild rebound tenderness over her left adnexa and epigastrium. Pelvic ultrasonography detected an indeterminate left adnexal mass measuring 3.9 × 2.4 cm (Fig. 1). Computed tomography demonstrated additional omental masses throughout the abdomen (Figs. 2 and 3). Given the patient's history of leiomyomas with hysterectomy utilizing power morcellation, she was suspected to have diffuse peritoneal seeding and implants of fibroids. The patient underwent uncomplicated exploratory laparotomy. Intraoperatively, multiple sites of leiomyomatosis were identified and resected in the peritoneum over the small bowel, bilateral pelvic wall, retroperitoneum, right pararectal space, left paracolic gutter and sigmoid colon. The omentum was extensively involved with recurrent leiomyomas and the left ovary demonstrated extrauterine fibroid implant, which were removed with omentectomy and left salpingo-oophorectomy. At the conclusion of the procedure, at least 20–25 different implants of leiomyomas had been removed individually. Histologic examination confirmed post-operative diagnosis of diffuse leiomyomatosis. The patient had an unremarkable postoperative course and reported asymptomatic till date.

3. The discussion

Morcellation is a surgical technique used during minimally invasive surgery to permit the extraction of large, solid masses through small incisions. Between 2006 and 2012, an estimated 16% of all minimally invasive hysterectomies involved morcellation (Singh et al., 2015). The benefits of laparoscopic surgery are well proven. As compared to open abdominal hysterectomy, laparoscopic hysterectomy has decreased blood loss and mortality, fewer wound complications and infections, less pain and improved quality of life indices (Wiser et al., 2013). However, in recent years the use of power morcellation in the setting of laparoscopic surgery has declined due to risks and complications, which include injury to adjacent structures, difficulty in proper pathologic evaluation of the specimen and the need for surgical restaging after dissemination of disease. The most serious long-term complication, however, is potential intraperitoneal spillage of benign and malignant tissue (Kho and Nezhat, 2014).

Table 1
Literature review of case reports on parasitic myoma from 2015–2016.

Study	No of cases	Age	Prior surgery	Years since first surgery	Morcellator	Location	Symptoms	Size (largest diameter)	Histology
Yang et al., 2015	One	34	LM	4	Yes	Intestine, mesentery	None	5 x 4 x 3 cm	Leiomyoma
Yuri et al., 2015	Two	30	Ovariectomy	6	No	Abdomen, pelvis	NA	NA	Leiomyoma
		30	Ovariectomy	6	No	Transverse mesocolon	None	5.5 cm	Leiomyoma
Lee and Noh, 2015	One	31	LM	1	No	Pelvic peritoneum	Abdominal pain	1 cm	Leiomyoma
Narasimhulu et al., 2015	One	40	LASH	8	Yes	Left adnexa, pelvis	Abdominal pain	6 x 10 cm	Leiomyoma with necrosis and hemorrhage
Cho et al., 2016	One	38	AM	0.6	No	Pelvis	Abdominal pain	17 x 15 x 7 cm	Infarcted leiomyoma
Tun et al., 2016	One	56	TAH	NA	No	Abdomen, pelvis	Abdominal distention and bloating	5.2 x 4 x 3 cm	Leiomyoma
Wu et al., 2016	One	33	LM	5	No	Omentum, pelvis	Abdominal pain	20 mm	Leiomyoma
Nappi et al., 2016	One	40	LM	10	Yes	Peritoneum, omentum, bowel	Pelvic pressure and abdominal pain	3 cm	Leiomyoma
Gebresellassie, 2016	One	65	Abdominal surgery	0.5	No	Mesentery, small bowel wall	Abdominal pain and vomiting	NA	Leiomyoma

LM: laparoscopic myomectomy; LASH: laparoscopic supracervical hysterectomy; AM: abdominal myomectomy; TAH: total abdominal hysterectomy.

In April 2014, the Food and Drug Administration (FDA) issued a warning against morcellation for majority of women undergoing myomectomy or hysterectomy, particularly in presumed uterine fibroids

(Food and Drug Administration, 2014). According to the FDA, power morcellation poses a risk of spreading unsuspected cancerous tissues, most notably sarcomas, beyond the uterus. These tissues can potentially grow to any size, cause symptoms, and present as mass anywhere in the peritoneum. In their estimation, 1 in 498 women with presumed fibroids had occult leiomyosarcoma (Rowland et al., 2012). Due to the risk of spreading cancerous tissues, the FDA recommended contraindications of laparoscopic power morcellations in gynecologic surgery in which the tissue to be morcellated is suspected to be cancerous and also in the removal of uterine tissue containing suspected fibroids in peri- or postmenopausal women (Takamizawa et al., 1999). In such cases, traditional surgical hysterectomy and myomectomy, laparoscopic hysterectomy and myomectomy without morcellation, smaller incision minilaparotomy, and uterine artery embolization (UAE) would be alternative treatment options (Wright et al., 2013).

Currently, there are several ongoing studies regarding the use of morcellation in uterine surgery. One potential solution to address intraperitoneal spillage of both benign and occult malignant tissue involves the use of containment bags in the setting of power morcellation. However, additional studies are necessary to determine the ideal candidate in whom benefit would outweigh the risk for morcellation during minimally invasive hysterectomy (Cohen et al., 2016).

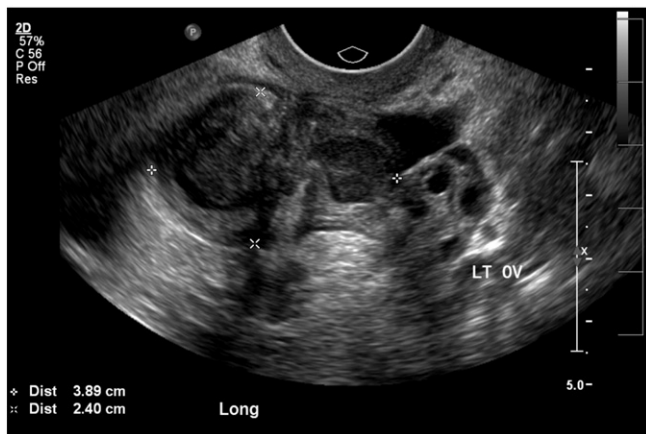


Fig. 1. Ultrasound of the left adnexa demonstrates a 3.9 × 2.4 cm adnexal mass adjacent to the left ovary 3 years after laparoscopic hysterectomy with power morcellation.



Fig. 2. Unenhanced axial CT at the level of the upper abdomen demonstrates a 3.5 × 2.2 cm peritoneal mass (white arrow) 3 years after laparoscopic hysterectomy with power morcellation.



Fig. 3. Unenhanced axial CT at the level of the lower abdomen demonstrates a smaller 2.6 × 2.1 cm peritoneal mass (white arrow) 3 years after laparoscopic hysterectomy with power morcellation.

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