



Original contribution

Incidental gynecologic neoplasms in morcellated uterine specimens: a case series with follow-up[☆]



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Summary Laparoscopic hysterectomy with morcellation (LHM) is considered a safe and less invasive alternative to other hysterectomy techniques by shortening postoperative hospital stay and patient recovery. Sparse incidental gynecologic neoplasms after LHM have been reported; however, the frequency and subsequent follow-up have not been systematically investigated in a large case series. We aimed to determine the frequency and types of incidental findings after LHM with clinical outcomes. An electronic chart review was conducted searching all cases of LHM performed within 5 years to determine the incidence of unexpected gynecologic neoplasms and subsequent peritoneal disease. Patient demographics, prior preoperative investigation, and subsequent follow-up were investigated. For comparison, the overall frequency of pertinent uterine neoplasms was noted during the study period. Of the 352 cases of LHM identified, 3 harbored unsuspected malignancies, an incidence of 0.9%. Four variant smooth muscle tumors (1.1%) and 5 benign non-smooth muscle neoplasms (1.4%) were identified at the time of initial morcellation. Two cases of subsequent peritoneal “implanted” leiomyoma were identified (0.6%). Of malignant or atypical mesenchymal neoplasms diagnosed at our institution during the study period, 8.6% were diagnosed in a morcellated specimen. There is a clinically important risk of occult malignant or atypical neoplasms in morcellated uterine specimens. Proper pathologic evaluation of malignant or atypical uterine neoplasms is limited when a uterus is morcellated. Patients undergoing morcellation procedures are also potentially at risk for dissemination of disease. Clinicians and patients should be aware of these risks when discussing surgical options for hysterectomy.

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1. Introduction

Minimally invasive laparoscopic hysterectomy has gained popularity over the open abdominal approach; however, in patients with bulky uteri enlarged by leiomyomata, morcellation is frequently used to cut the

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uterus into smaller fragments that can be extracted through the small laparoscopic port incisions. Laparoscopic hysterectomy with morcellation (LHM) is considered an efficient and safe alternative to total abdominal hysterectomy or total vaginal hysterectomy [1,2] and has been shown to reduce operative time, perioperative morbidity rate, and postoperative hospital stay [3] compared with the total abdominal hysterectomy that would be required to remove large uteri. In addition, LHM is associated with decreased morbidity, blood loss, and recovery time compared with laparoscopically assisted vaginal hysterectomy [4,5].

Despite the appearance of safety, in situ morcellation is not without its risks. There have been reported cases of gynecologic malignancies discovered incidentally after morcellated hysterectomy, including leiomyosarcomas [6], endometrial stromal sarcomas [7,8], complex atypical endometrial hyperplasia [9], and endometrioid carcinoma [10]. Hagemann et al [11] reported a frequency of such occurrences as 1% in a case series where they identified a single case of epithelioid trophoblastic tumor (of 101 cases seen over 4 years). In addition to incidentally morcellated unsuspected uterine malignancies, there have been several reports of peritoneal dissemination of smooth muscle neoplasms after morcellation [6,12,13]. Given the continued popularity of the morcellation technique, the current study aimed to determine the frequency, types, and sequelae of incidental neoplasms (ie, those other than benign leiomyomas or adenomyomas) in morcellated hysterectomy specimens at a single institution that specializes in gynecologic care and has performed a high volume of such procedures.

2. Materials and methods

An electronic chart review was conducted searching for all cases of laparoscopic-assisted morcellated myomectomy or hysterectomy with or without cervixes, fallopian tubes, and ovaries performed from January 1, 2007, to January 31, 2012, and received in the Department of Pathology at Women & Infants Hospital of Rhode Island. The incidence of unsuspected neoplasms—defined as any neoplasm other than straightforward benign leiomyoma or adenomyoma—was noted, along with associated patient demographics and results from preoperative tissue sampling and radiologic investigation. The most current clinical status of patients with unexpected neoplasms was obtained from subsequent chart review. Cases of subsequent peritoneal dissemination after morcellation procedures that were performed during the study period were also noted. The overall incidence of various uterine neoplasms during the study period was noted for comparison. This study was approved by the institutional review board.

3. Results

A total of 352 cases of morcellated uteri were identified over the 61-month period. Overall, 13 cases of morcellation were associated with unexpected findings or sequelae—an incidence of 3.7% (Table 1). Three incidental malignancies were noted, an incidence of 0.9%, and are detailed below.

Table 1 Patient demographics and diagnosis at the time of morcellation and clinical follow-up

Case no.	Initial age	Initial procedure	Diagnosis	Follow-up surgery and interval (mo)	Subsequent peritoneal diagnosis	Clinical status and follow-up interval (mo)
1	48	SCH	ESS	Staging (1)	ESS in adnexal soft tissue	NED (50)
2	49	SCH	Endometrioid adenocarcinoma	Staging (1)	None	NED (35)
3	47	TH, BS	UTROSCT	Staging (1.5)	Omental adhesion with LM	NED (24)
4	51	SCH	Variant LM	N/A	N/A	NED (19)
5	40	Myomectomy	Variant LM	TH (5)	None	N/A
6	40	SCH	STUMP	N/A	N/A	NED (65)
7	45	SCH	Variant LM	N/A	N/A	NED (73)
8	47	SCH, UO	Adenomatoid tumor	N/A	N/A	NED (46)
9	41	SCH, BS	Adenomatoid tumor	N/A	N/A	NED (22)
10	51	SCH	Adenomatoid tumor	N/A	N/A	NED (14)
11	38	TH, BSO	Microscopic Brenner tumor	N/A	N/A	NED (80)
12	46	SCH, USO	Microscopic Brenner tumor	N/A	N/A	N/A
13	37	Myomectomy	LM	C-Section (19)	Peritoneal LM nodules	NED (23)

Abbreviations: BS, bilateral salpingectomy; BSO, bilateral salpingo-oophorectomy; ESS, endometrial stromal sarcoma; LM, leiomyoma; N/A, not applicable; NED, no evidence of disease; SCH, supracervical hysterectomy; STUMP, smooth muscle tumor of uncertain malignant potential; TH, total hysterectomy; UO, unilateral oophorectomy; USO, unilateral salpingo-oophorectomy; UTROSCT, uterine tumor resembling ovarian sex cord tumor.

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