

The Incidence of Malignancy and the Preoperative Assessment of Women Undergoing Hysterectomy with Morcellation for Benign Indications



Gianna Wilkie; Emily Reus, MD; Katherine Leung, MPH; Leslie Bradford, MD; Mark Manning, MD; Tiffany A. Moore Simas, MD, MPH, ME
Department of Obstetrics and Gynecology, University of Massachusetts Medical School, Worcester, Massachusetts



BACKGROUND

- Hysterectomy is one of the most commonly performed surgical procedures in the U.S., with minimally invasive approaches being preferred.
- The use of power morcellation in gynecologic surgery has come under scrutiny secondary to concerns for occult malignancy dissemination.¹
- The incidence of undiagnosed gynecologic malignancy when hysterectomies are performed for benign indications is not definitive but has been quoted as high as 2.7% (1:37).²
- There is no standard recommended preoperative evaluation, and variation is anticipated by preoperative complaint or diagnosis.³

OBJECTIVES

- To quantify the incidence of malignancy in women undergoing hysterectomy for benign indications with and without morcellation
- To compare the preoperative evaluation of patients undergoing hysterectomy with and without morcellation

METHODS

Subjects

- All women having a hysterectomy between October 2007 and June 2014 were identified by billing procedure codes.

Methods

- This retrospective cohort study was a medical record review of 2,332 charts.
- Chart abstraction included demographics; pre-hysterectomy evaluation, including current cervical cytology, pathologic endometrial assessment (biopsy, dilation and curettage), and imaging (ultrasound, MRI, CT scan, sonohysterogram, or hysteroscopy); intraoperative factors; and final diagnosis.

RESULTS

Demographics

- The cohort included 2,332 women undergoing hysterectomy with 396 (17.0%) including use of morcellation.
- Women were aged 48.3 ± 10.2 years at the time of surgery, and 33.7% of the population was post-menopausal.

Malignancy Incidence

- The incidence of malignancy on final pathology was 2.1% and was different between non-morcellated versus morcellated specimens (2.5% vs. 0.3%, $p < 0.001$).

Pre-operative Evaluation

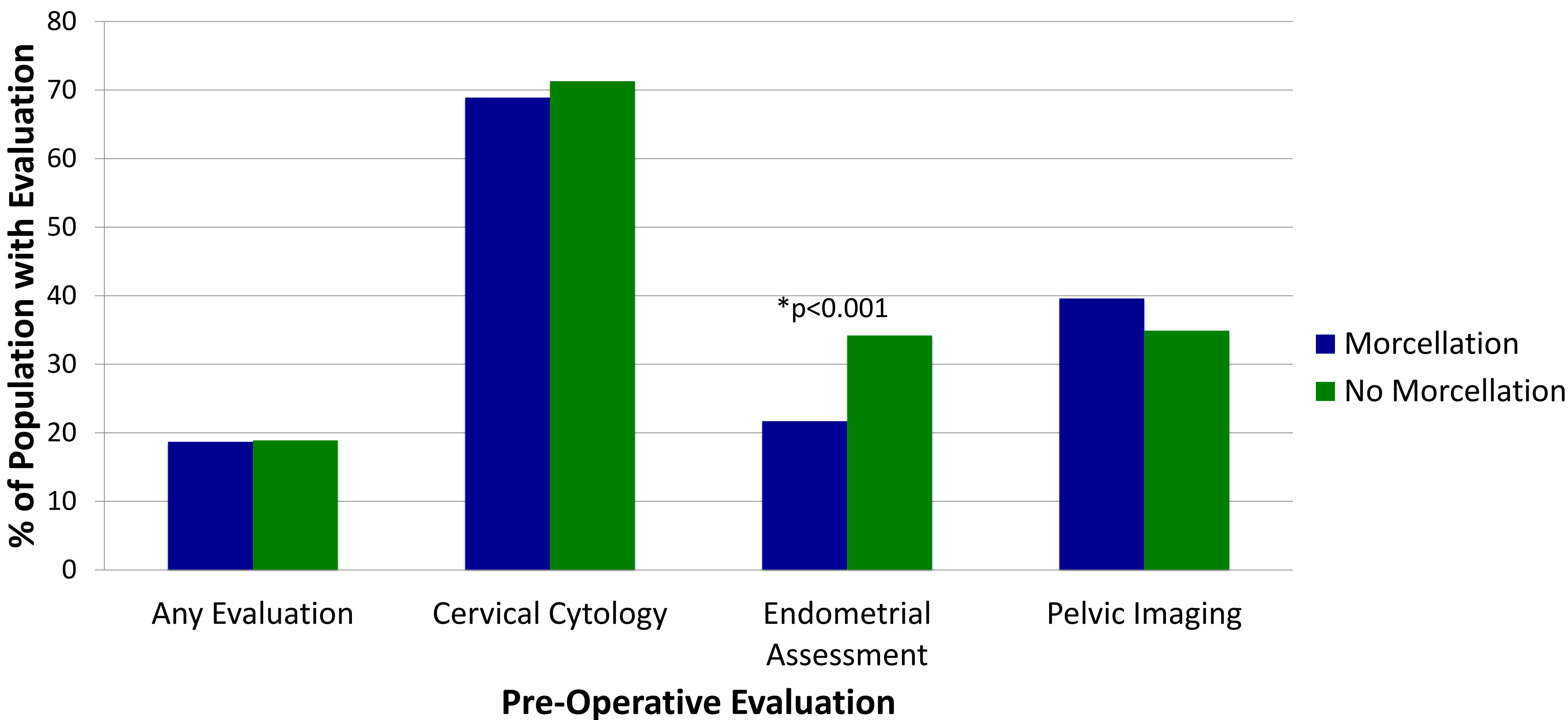
- There was no significant difference in current cervical cytology (68.9% vs. 71.3%) and imaging (39.6% vs. 34.9%) rates between the non- versus morcellated groups; however those experiencing morcellation were less likely to have preoperative pathologic endometrial assessment (21.7% vs. 34.2%, $p < 0.001$).

Table 1.

Final Pathology Result	Total Population	Morcellation (n=396)	No Morcellation (n=1,936)	P-value
Benign	2,117 (90.8%)	390 (98.5%)	1,727 (89.2%)	<0.001
Pre-cancerous	166 (7.1%)	(1.3%)	161 (8.3%)	
Malignant	49 (2.1%)	1 (0.3%)	48 (2.5%)	

Figure 1.

The Pre-operative Evaluation between Women Undergoing Hysterectomy with and without Morcellation



CONCLUSIONS

- The incidence of malignancy at time of hysterectomy performed by non-oncology trained gynecologists was 2.1% overall, and 0.3% in morcellated cases.
- The pre-operative evaluation of patients undergoing hysterectomy with morcellation was similar to those without morcellation, except for lower rates of pathologic endometrial assessment by dilation and curettage or endometrial biopsy.
- The lower rates of endometrial assessment seen in the morcellation group can be explained by the fewer chief complaints of abnormal uterine bleeding and more pre-operative diagnoses of pelvic organ prolapse.
- An argument could be made that a pathology assessment is indicated in the group undergoing hysterectomy with morcellation due to risk of dissemination in the case of occult malignancy.
- The risk of occult malignancy is rare, but this should be discussed with patients and taken into account during the pre-operative evaluation.

REFERENCES

- Wright J, Tergas A, Cui R, Burke W, Hou J, Ananth C, Chen L, Richards C, Neugut A, Hershman D. Use of electric power morcellation and prevalence of underlying cancer in women who undergo myomectomy. JAMA Oncology 2015; 1(1): 69-77.
- Mahnert N, Morgan D, Campbell D et al. Unexpected gynecologic malignancy diagnosed after hysterectomy performed for benign indications. Obstet Gynecol 2015;125: 397–405.
- Diagnosis of abnormal uterine bleeding in reproductive-aged women. Practice Bulletin No. 128. American College of Obstetricians and Gynecologists. Obstet Gynecol 2012; 120: 197-206.