2016-04-27

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

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**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.
- 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).
- There is no standard recommended preoperative evaluation, and variation is anticipated by preoperative complaint or diagnosis.

**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.

<table>
<thead>
<tr>
<th>Final Pathology Result</th>
<th>Total Population</th>
<th>Morcellation (n=396)</th>
<th>No Morcellation (n=1,936)</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Benign</td>
<td>2,117 (90.8%)</td>
<td>390 (98.5%)</td>
<td>1,727 (89.2%)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Pre-cancerous</td>
<td>166 (7.1%)</td>
<td>1 (0.3%)</td>
<td>161 (8.3%)</td>
<td></td>
</tr>
<tr>
<td>Malignant</td>
<td>49 (2.1%)</td>
<td>1 (0.3%)</td>
<td>48 (2.5%)</td>
<td></td>
</tr>
</tbody>
</table>

**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**