Complications of Hysterectomy

Dr ladan ajori

Associated professor of gynecology and obstetrics

Shohadaye Tajrish hospital
Complications

• Hysterectomy surgical removal of the uterus may be performed using abdominal vaginal or laparoscopic approach

• Complete preoperative evaluation and consulting helps to set patient and prepare for or prevent preoperative complications.
Abdominal hysterectomy

- Hemorrhage
- Infection
- Thromboembolic disease
- Urinary tract issues: ureteral injury, bladder injury, urinary incontinence
- Gastrointestinal tract issues: bowel injury, ileus, bowel obstruction
- Vaginal cuff dehiscence
- Adhesions
Abdominal hysterectomy

- Reproductive system: *earlier menopause, fallopian tube prolapse*
- Post operative neuropathy
- Regret child bearing
- Sexual dysfunction
- Cardiovascular disease
- Mortality
- Readmission
Complication of abdominal hysterectomy

<table>
<thead>
<tr>
<th>COMPLICATION</th>
<th>INCIDENCE (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blood transfusion</td>
<td>4.6</td>
</tr>
<tr>
<td>Bowel injury</td>
<td>0.1-1</td>
</tr>
<tr>
<td>Urinary tract injury</td>
<td></td>
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<tr>
<td>Ureteral</td>
<td>0.3-1.7</td>
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<tr>
<td>Bladder</td>
<td>1.2-3</td>
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<tr>
<td>Urogenital fistula</td>
<td>0.1-0.2</td>
</tr>
<tr>
<td>UTI</td>
<td>2.2-4</td>
</tr>
<tr>
<td>Sepsis</td>
<td>0.08</td>
</tr>
<tr>
<td>Surgical site infection—superficial</td>
<td>2.5-7</td>
</tr>
<tr>
<td>Cuff cellulitis</td>
<td>2</td>
</tr>
<tr>
<td>VTE</td>
<td>0.56</td>
</tr>
<tr>
<td>Cuff dehiscence</td>
<td>0.4</td>
</tr>
<tr>
<td>Neuropathy</td>
<td>&lt;2</td>
</tr>
<tr>
<td>Pelvic organ prolapse</td>
<td>3-5</td>
</tr>
<tr>
<td>Death</td>
<td>0.04-0.17</td>
</tr>
</tbody>
</table>
Vaginal hysterectomy

- Intraoperative complication:
  - Hemorrhage
  - Urinary tract injury
  - Bowel injury
Post operative complication

- Urinary retention
- Abscess
- Bleeding
- Cuff dehiscense
- Fallopian tube prolapse
- Fever
Post operative complication

- Fistula
- Illeus and bowel obstruction
- Venous thromboembolism
- Urinary incontinence
Key Point

- Compared to vaginal and laparoscopic hysterectomy, abdominal hysterectomy is associated with longer hospital stay and higher risk of surgical site infection. Thus, the abdominal route should be reserved for situations in which the experienced gynecologic surgeon considers the abdominal approach the safest option. Examples include when uterine or adnexal disease or adhesions create substantial anatomic distortion and when tissue morcellation is contraindicated.
Key Point

- Subtotal (supracervical) hysterectomy is not associated with improved sexual, bladder, or bowel function as compared to total (complete) hysterectomy.
- Prior to abdominal hysterectomy, medical pretreatment of fibroid-associated anemia with depot leuprolide acetate is associated with improved preoperative hemoglobin concentration, reduced intraoperative blood loss, and transfusion.
Key Point

• The patient may be positioned supine or in low lithotomy for abdominal hysterectomy. The right-handed primary surgeon should stand on the patient's left.
Key Point

• Sharp dissection is recommended for mobilizing the bladder off the cervix and proximal vagina.

• After the uterine vascular pedicles are clamped and secured, safe amputation of the uterine fundus is possible. With an enlarged fundus that obscures the surgical field, this may be an intermediate step that improves visualization during the process of total hysterectomy
Key Point

- The cervix can be removed separately in such cases.
- After removal of the cervix, the closure of the vaginal cuff must include the full thickness of vaginal mucosa to prevent bleeding, cuff hematoma, and vaginal granulation.
Key Point

• Hysterectomy in the setting of cervical or broad ligament masses, such as leiomyomata, may be particularly challenging.
• Retroperitoneal dissection, with development of the pararectal and paravesical spaces, is required in such cases.
• The ureters should be traced through their pelvic course prior to excising a cervical or broad ligament mass.
• Surgical site infection continues to be the most common indication for readmission after abdominal hysterectomy.
• The urinary tract is the most common site of adjacent organ injury during abdominal hysterectomy.
• Bladder injury occurs more frequently than does ureteral and is most often seen at the dome of the bladder.
• Ureteral injury is most often encountered lateral to the uterine vessels.
• If a ureteral injury is suspected intraoperatively, the bladder is evaluated for evidence of ureteral effluux. Confirmation of ureteral patency can be performed with cystourethroscopy or by opening the bladder dome.
• Postoperatively, ureteral injury may be asymptomatic or may present as flank or groin pain, fever, prolonged ileus, and abdominal mass.
• Postoperative serum creatinine concentration rises $\geq 0.3$ mg/dL above preoperative values support this diagnosis.
• Bowel injuries occur primarily during lysis of adhesions involving bowel and dissection of the posterior cul-de-sac. Serosal abrasions do not need repair, but injuries involving the muscularis and/or mucosa are to be repaired.
**Preoperative preparation**

**Surgical planning**

- Surgical planning for (abdominal hysterectomy) AH includes patient and surgeon decision-making regarding choice of incision, salpingooophorectomy, and subtotal versus total hysterectomy.

- In women undergoing AH in whom a decrease in uterine size would enable a transverse rather than a midline vertical abdominal incision, we suggest GnRH analog therapy for three to four months preoperatively.
Thromboprophylaxis

• Thromboprophylaxis is required for women undergoing abdominal hysterectomy.
Prevention of surgical site infection

• In women undergoing AH, we recommend antibiotics for surgical site infection prevention rather than no antibiotics
# Prevention of surgical site infection

<table>
<thead>
<tr>
<th>Open or laparoscopic surgery</th>
<th>Enteric gram-negative bacilli, enterococci</th>
<th>Cefazolin</th>
<th>&lt;120 kg: 2 g IV</th>
<th>≥120 kg: 3 g IV</th>
<th>4 hours</th>
</tr>
</thead>
</table>

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Prevention of surgical site infection

- In women planning AH who have bacterial vaginosis, we recommend treatment for eight days, starting four days preoperatively with metronidazole rather than no treatment.
- Clindamycin may be used as an alternative if there is a contraindication or resistance to metronidazole.
Prevention of surgical site infection

- Vaginal preparation can be performed with chlorhexidine-alcohol solution that contains a lower (4 percent) concentration of alcohol or with povidone-iodine solution