Choosing the Route of Hysterectomy for Benign Conditions

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Objectives

• At the completion of this lecture, participants will
  – Appreciate the current evidence relating to the preferred approach to hysterectomy for benign indications
  – Understand the data surrounding morbidity associated with laparoscopic hysterectomy
  – Understand the data morbidity associated with supracervical hysterectomy

Disclosures

• Covidien
  – Consultant
  – Speaker
• Teleflex-Weck
  – Consultant
• TransEnterix
  – Consultant
  – Stock
• CareFusion
  – Advisory Board
The technique used for hysterectomy should be dictated by the indication for the surgery, patient characteristics, and patient preference.

ACOG Committee Opinion No. 311, 2005

Factors affecting approach

- Physician factors
- Patient factors

Physician Factors Affecting Approach

- Surgical skills/experience
  - Training
- Technology
- Personal biases
  - "Early adopters"
- Reimbursement
Patient Factors Affecting Approach

- Uterine size
- Uterine descent
- Patient size
- Parity
- Pelvic shape
- Concern for adhesions
  - Previous abdominopelvic surgery/infection
- Need for additional surgery
  - Oophorectomy
  - Vaginal repairs


Diagnosis Distribution by Type of Hysterectomy

Farquhar & Steiner, Obstet Gynecol 2002

Patient Preference

- Desire for
  - a minimally invasive approach
  - a short hospital stay
  - a quick recovery
  - quick return to usual activities
  - best cosmetic results
  - most effective procedure
- Idiosyncratic requests
What does the *evidence* tell us?

Surgical approach to hysterectomy for benign gynecological disease (Review)

Niamh N. Butler, E. Lebby, S. Sacco, G. Coom, G. Gery G

THE COCHRANE COLLABORATION®

2/9/06 last update

**Cochrane**

- 27 Trials
- 3643 patients
- All hysterectomies for benign causes
- Six studies for fibroids only
Cochrane Conclusions

• Both VH and LH offer distinct advantages over AH in terms of recovery, pain, some complications
• VH preferred when feasible due to shorter time than LH
• Avoid AH if at all possible

Options

• Abdominal Hysterectomy (AH)
  – Total
  – Subtotal
• Vaginal Hysterectomy (VH)
• Laparoscopic Hysterectomy (LH)
  – Laparoscopically-assisted VH (LAVH)
  – Total (TLH)
  – Subtotal (LSH)

Which one, when?

• Begin with the premise that the rate of traditional abdominal hysterectomy should be less than it is currently
• Examine the evidence regarding the choice between VH and LH
Vaginal Hysterectomy

- Historical Contraindications
  - Uterine enlargement (>280 grams/12 weeks)
  - Nulliparity
  - Previous cesarean
  - Other prior pelvic surgery
  - Adnexal pathology
  - Other suspected pelvic pathology (endometriosis, h/o PID etc)
Summary

• The factors that were repetitively found to increase the risk for conversion
  – Narrow pubic arch
  – Lack of uterine descent
• The impact of uterine weight, previous surgery (adhesions) varied amongst studies
  – Skill of the surgeon

**EVALUATE hysterectomy trial:**
a multicentre randomised trial comparing abdominal, vaginal and laparoscopic methods of hysterectomy


**eVALuate Hysterectomy Trial**

• Multicenter, RCT
  – 43 surgeons
  – 28 centers
• 1380 subjects
  – 876 in AH
  • 584 laparoscopic
  – 504 VH
  • 336 laparoscopic
• Primary outcome was major complications
Vaginal Hysterectomy and Major Complications

Laparoscopic Hysterectomy

ACOG

- Lysis of adhesions
- Treatment of endometriosis
- Management of uterine leiomyomata that complicate the performance of vaginal hysterectomy
- Ligation of infundibulopelvic ligaments to facilitate difficult ovary removal
- Evaluation of the pelvic and abdominal cavity before hysterectomy
VH vs. LH

- It is inappropriate to consider a laparoscopic hysterectomy as a replacement for a vaginal hysterectomy
- 4 RCTs comparing VH and LH
  - LH
    - Higher costs; longer operative time
    - No significant differences in LOS, pain, return to normal activities


Reported benefits over AH

- Less blood loss
- Fewer infections or fevers,
- Shorter hospital stay and recovery time
- Earlier resumption of baseline activities
- Faster return to work
- Less postoperative pain
- Decreased pain medication requirements

In all other cases where an abdominal approach is deemed appropriate, an LH may offer the patient several advantages

Contraindications

- Absolute
  - Hemodynamic instability
  - Bowel obstruction
  - Diaphragmatic hernia
  - Severe cardiopulmonary compromise

- Relative
  - Bleeding diathesis
  - Diffuse peritonitis
  - Extreme weight
  - Massive uterine enlargement
EVALUATE hysterectomy trial: a multicentre randomised trial comparing abdominal, vaginal and laparoscopic methods of hysterectomy

R Garry, J Fountain, J Brown, A Manca, S Mason, M Sculptor, V Napp, S Bridgman, J Gray and R Lilford

Laparoscopic Hysterectomy and Major Complications

<table>
<thead>
<tr>
<th>Variable (compared)</th>
<th>p</th>
<th>OR</th>
<th>95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Premenopausal age (years)</td>
<td>0.32</td>
<td>0.71</td>
<td>0.38-1.32</td>
</tr>
<tr>
<td>Menopause in relation to menarche</td>
<td>0.44</td>
<td>1.22</td>
<td>0.94-1.58</td>
</tr>
<tr>
<td>Vaginal parity (born in natural order)</td>
<td>0.16</td>
<td>1.91</td>
<td>0.86-4.20</td>
</tr>
<tr>
<td>Papanicolaou smear (yes vs. no)</td>
<td>0.16</td>
<td>2.21</td>
<td>0.73-6.71</td>
</tr>
<tr>
<td>Menopause at hysterectomy (yes vs. no)</td>
<td>0.35</td>
<td>1.46</td>
<td>0.78-2.72</td>
</tr>
</tbody>
</table>

- TLH vs. TAH at 6 weeks
  - Better physical component score of SF-12
  - Better BIS (body imaging score)
  - More sexual frequency
- TVH vs. LAVH
  - No differences
- VH vs. LH
  - Underpowered

RCT, n=60
- Inclusion
  - Candidates for vaginal hysterectomy
- Exclusion
  - Uterine volume > 300 mL, previous PID or endo surgery, malignancy, cyst > 4 cm

Results
- Laparoscopy
  - Shorter LOS (LH 2.7 ± 0.5 d; VH 3.2 ± 0.6d)
  - Longer operative time (LH 99 ± 25 min; VH 81 ± 30 min)
  - Less EBL (LH 83 ± 57 mL; VH 178 ± 149 mL)
  - Less pain on POD #0 and total analgesic in LH group

<table>
<thead>
<tr>
<th>Day</th>
<th>Laparoscopy (d)</th>
<th>Vaginal (d)</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>2.74 ± 2.9</td>
<td>5.17 ± 3.4</td>
<td>0.023</td>
</tr>
<tr>
<td>1</td>
<td>3.95 ± 1.2</td>
<td>4.00 ± 2.8</td>
<td>0.958</td>
</tr>
<tr>
<td>2</td>
<td>1.95 ± 1.6</td>
<td>2.56 ± 2.4</td>
<td>0.370</td>
</tr>
<tr>
<td>3</td>
<td>1.25 ± 1.3</td>
<td>1.67 ± 1.2</td>
<td>0.520</td>
</tr>
</tbody>
</table>

Mean days of analgesia: 0.96 ± 0.02 vs. 1.65 ± 0.99; P=0.017
**Postoperative pain after laparoscopic and vaginal hysterectomy for benign gynecologic disease: a randomized trial**

F. Ghezzi, M.D.; Stefano Uccella, M.D.; Antonella Croni, Ph.D.; Gabriele Sieto, M.D.; Maurizio Senni, M.D.; Giorgio Bogazzi, M.D.; Pierfrancesco Bolis, M.D.


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**TVH vs. TLH: Post-op Pain**

- Prospective randomized trial
- Compare laparoscopic hysterectomy (n=41) and vaginal hysterectomy (n=41) in patients with uterine volume <14 weeks of gestation
- Similar operative time and EBL
- Complication rate and hospital stay higher for TVH group
- Half post-op pain score in TLH group

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**TABLE 1**

<table>
<thead>
<tr>
<th>Variable</th>
<th>LH n = 41</th>
<th>VH n = 41</th>
<th>P values</th>
</tr>
</thead>
<tbody>
<tr>
<td>VAS score at 1 h</td>
<td>4.1 ± 2.6</td>
<td>1.8 ± 1.3</td>
<td>&lt;.0001a</td>
</tr>
<tr>
<td>VAS score at 3 h</td>
<td>3.2 ± 2.5</td>
<td>6.6 ± 2.0</td>
<td>&lt;.0001b</td>
</tr>
<tr>
<td>VAS score at 6 h</td>
<td>2.1 ± 2.2</td>
<td>5.3 ± 2.1</td>
<td>&lt;.0001b</td>
</tr>
<tr>
<td>VAS score at 24 h</td>
<td>1.8 ± 1.7</td>
<td>3.6 ± 2.6</td>
<td>.001a</td>
</tr>
<tr>
<td>Anxiolytic rescue dose</td>
<td>7 (71.1%)</td>
<td>12 (73.0%)</td>
<td>&lt;.0001c</td>
</tr>
</tbody>
</table>

Data are expressed as median [range] and mean ± SD.

a: Laparoscopic hysterectomy vs vaginal hysterectomy, Student t-test.
b: Visual analog scale (VAS) vs vaginal hysterectomy.
c: Student t-test.

* F(H) = Fisher’s exact test.
}

**Note:** Post-op analgesia was performed as needed.
Supraventricular Hysterectomy

Systematic Review of Subtotal Hysterectomy: April 2006

Total versus subtotal hysterectomy for benign gynecological conditions (Review)

Leahy A, Innis N, Johnson NP
Cochrane

- RCTs only
- 3 Trials
- 733 patients
- All hysterectomies for benign causes

Cochrane Review

- Limited data regarding surgical technique
  - 2 studies
    - Required clamp-cut-ligate method
    - Utilized polyglycolic sutures
    - Electrocoagulated endocervix
- All utilized computerized randomization
- One study blinded
- All trials performed a power analysis

Outcome Measures

- Primary
  - Urinary Function
  - Sexual function
  - Bowel Function
- Secondary
  - OR time
  - Surgical Injury
  - EBL
  - Pain
  - Transfusion
  - Pelvic Hematoma
  - Infection

- Secondary (cont.)
  - Vaginal bleeding
  - Length of stay
  - Return to normal activities
  - Fistula
  - Prolapse
  - QOL
  - GYN cancer
Cochrane Conclusions

• No differences
  – Incontinence, constipation, or measures of sexual function

• Subtotal Hysterectomy
  – Length of surgery and EBL significantly less
    • No difference in transfusion risk
  – Less febrile morbidity (OR 0.43)
  – More cyclical bleeding at 1 year (OR 11.3)

“This review does not support the perception that subtotal hysterectomy offers improved outcomes for sexual, urinary or bowel function…”

Supraventricular Hysterectomy

ABSTRACT: Women with known or suspected gynecologic cancer, current or recent cervical dysplasia, or endometrial hyperplasia are not candidates for a supraventricular procedure. Patients electing supraventricular hysterectomy should be carefully screened preoperatively to exclude cervical or uterine neoplasm and should be counseled about the need for long-term follow-up, the possibility of future trachelectomy, and the lack of data demonstrating clear benefits over total hysterectomy. The supraventricular approach should not be recommended by the surgeon as a superior technique for hysterectomy for benign disease.
Wrap-up

- Implications for Practice…
- Depends on goals
  - Increase rate of VH
  - Decrease rate of TAH
- Should make efforts to decrease the rate of standard abdominal hysterectomy