Hysterectomy and Oophorectomy: Management Options

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Outline

• Review options for surgical approach to hysterectomy
• Discuss risks/benefits of surgical approaches
• Review risks/benefits of prophylactic oophorectomy

Hysterectomy: Fast Facts

Hysterectomy is the most common major surgery in women

In 2003…
• 602,457 hysts total
• 538,722 (90%) hysts for benign indications
• 5.38 hysts per 1,000 women-years
• Age 40-44 highest rate 12.5/1,000
• By age 65, 1/3 of women will have had a hyst

Wu et al, Ob Gyn, Nov. 2007

Surgical Approach: 1988

Hysterectomy

Abdominal
Vaginal
Supracervical vs. Total Hysterectomy

- Supracervical hyst (SCH) was first abdominal hyst (1863)
- SCH dominated until first TAH 1929
- Concerns for cervical ca led to TAH replacing SCH
- SCH increasing last 20 years
  7% 1994, 21% 2003 at Kaiser Nor Ca

Jacobson et al, Ob Gyn, June 2006

Supracervical vs. Total Hysterectomy

43 year old G1P1 with symptomatic fibroids scheduled for abdominal hysterectomy. No hx of abnormal Pap smears. 14 week size uterus.

Would you recommend:
1) Supracervical hysterectomy
2) Total hysterectomy
3) No preference
Supracervical vs. Total Hysterectomy

- **Suggested benefits of SCH**
  - Decreased dissection = decreased morbidity
    - Less bladder/ureter injury
    - Less postop hematoma
    - Less prolapse
  - No risk cuff granulations, tube prolapse, vaginal shortening
  - No change in sexual functioning

Supracervical vs. Total Hysterectomy

- **Potential risks of SCH**
  - Cervical cancer
    - 0.3% risk in women with nl Pap
    - Need for continuing surveillance
  - Persistent bleeding from cervical stump
    - 12% overall in RCTs
    - 1-2% risk of trachelectomy

Supracervical vs. Total Hysterectomy

- Meta-analysis of 3 randomized trials of SCH vs TAH (Cochrane)
  - 733 women with abdominal hyst for benign indications
  - NO DIFFERENCE in:
    - Sexual function
    - Incontinence
    - Constipation
    - Prolapse
    - GU injury

Supracervical vs. Total Hysterectomy

- Meta-analysis of 3 randomized trials of SCH vs TAH (Cochrane)
  - 733 women with abdominal hyst for benign indications
  - SCH
    - Lower EBL (-85 cc), but no difference in transfusion
    - Shorter OR time (-11 minutes)
    - Less febrile morbidity (OR .43)
    - More bleeding (12% vs. 0.8%) after 1 year, but no statistically significant difference after 2 years
Supracervical vs. Total Hysterectomy

- Counseling women...
  - No significant advantages of SCH in short term trials except decreased febrile complications
  - Increased bleeding with SCH (but maybe less with dessication of endocervical canal)
  - Need to get Pap smears with SCH

Hysterectomy Route

- 1990 National Data
  - Abdominal 76%
  - Vaginal 24%
  - Laparoscopic 0.3%

Wu et al, Ob Gyn, 2007

Hysterectomy Route

- 2003 National Data
  - Abdominal 66%
  - Vaginal 22%
  - Laparoscopic 12%

Wu et al, Ob Gyn, 2007

Laparoscopic Hysterectomy

48 yo G2P2 with adenomyosis and menometrorrhagia. 8 week size uterus. No prior surgery. No known adnexal disease.

Would you perform:
1) Laparoscopic hysterectomy (LAVH or supracervical or total)
2) Vaginal hysterectomy
Hysterectomy Route

- Cochrane Meta-analysis of 27 trials worldwide with 3,643 women with benign conditions
- Limitations of meta-analysis
  - Mix of l/s approaches
  - Beware patient selection
  - Includes SCH/total hyst, and BSO or ovarian conservation
  - Significant heterogeneity of studies
  - Underpowered to address rare complications

### Hysterectomy Route: Cochrane review

<table>
<thead>
<tr>
<th>Outcome</th>
<th>Vaginal vs. Abdominal</th>
<th>Laparoscopic vs. Abdominal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Infections or fevers</td>
<td>OR .42 (.21-.83)</td>
<td>OR .32 (.12-.85)</td>
</tr>
<tr>
<td>EBL</td>
<td>No difference</td>
<td>45cc</td>
</tr>
<tr>
<td>Need for transfusion</td>
<td>No difference</td>
<td>No difference</td>
</tr>
<tr>
<td>Urinary Tract Injury (bladder and ureter)</td>
<td>No difference</td>
<td>OR 2.61 (1.2-5.6)</td>
</tr>
<tr>
<td>Bowel or Vascular injury</td>
<td>No difference</td>
<td>No difference</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Outcome</th>
<th>Laparoscopic vs. Vaginal</th>
<th>Total laparoscopic vs. LAVH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating time</td>
<td>41 min</td>
<td>25 minutes</td>
</tr>
<tr>
<td>Urinary tract injuries</td>
<td>No difference</td>
<td>No difference</td>
</tr>
<tr>
<td>Bowel or vascular injuries</td>
<td>No difference</td>
<td>No difference</td>
</tr>
<tr>
<td>Hospital stay or return to normal activities</td>
<td>No difference</td>
<td>No difference</td>
</tr>
</tbody>
</table>
Hysterectomy Route: Cochrane review

Conclusion:

1) Vaginal hyst preferred to abdominal due to rapid recovery, fewer febrile episodes.

2) If vaginal hyst not possible, LH has advantages over abdominal (lower EBL, rapid recovery, fewer fevers/infections) but these are offset by longer OR time and more GU injury.

3) No advantage of LH over VH.

Robotic Surgery

- Laparoscopy with robotic assistance (the da Vinci robot)
- Only available gyn data is case-series

Oophorectomy versus Ovarian Conservation

BSO Trends

Percent of Hysterectomies with BSO over time

From NIS and NHDS
Case

47 yo P3 with symptomatic 18 week size fibroid uterus. Has menorrhagia and pelvic pressure. No family hx of breast or ovarian ca. Has 10 hot flashes/day for 2 years. No significant PMH. Not on HRT.

Scheduled for TAH. How would you counsel?
1. BSO
2. No BSO

Case

41 yo P3 with symptomatic 18 week size fibroid uterus. Has menorrhagia and pelvic pressure. No family hx of breast or ovarian ca. No hot flashes. No significant PMH.

Scheduled for TAH. How would you counsel?
1. BSO
2. No BSO

BSO Trends

Percent of Hysterectomies with BSO by Age in 2005

ACOG Clinical Recommendations

January 2008: BSO at the time of Hysterectomy

Postmenopausal: Given risk of ovarian ca, removal at the time of hysterectomy should be considered

Premenopausal: Strong consideration for retaining normal ovaries if no increased risk of ovarian ca
**Risks/Benefits of Oophorectomy**

Parker et al, Obstetrics and Gynecology 2005
Decision Analysis
Increased risk of DEATH by age 80 with BSO age 50-54

**Risks/Benefits of Oophorectomy: Parker Model**

- BSO
- NO BSO

**Causes of Death among Women**

<table>
<thead>
<tr>
<th>Disease</th>
<th>Number of deaths/year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heart Disease</td>
<td>489,000</td>
</tr>
<tr>
<td>Lung Ca</td>
<td>73,000</td>
</tr>
<tr>
<td>Breast</td>
<td>40,000</td>
</tr>
<tr>
<td>Colorectal</td>
<td>28,000</td>
</tr>
<tr>
<td>Pancreatic</td>
<td>32,000 (men and women)</td>
</tr>
<tr>
<td>Ovary</td>
<td>14,000</td>
</tr>
</tbody>
</table>

Source: CDC

- Swedish cohort 1965-83
- 50% reduction in breast ca
- with premenopausal hyst/bso
- Methodologic problems with study

Schairer et al, Int J Cancer 1997
**Causes of Death among Women**

- Cardiovascular Diseases: 45%
- Other Cancer: 6%
- Respiratory & Intrathoracic Cancer: 5%
- Digestive Cancer: 5%
- Breast Cancer: 4%
- Geriatric Cancer: 2%
- Other: 28%
- COPD: 4%
- Pneumonia and Influenza: 4%

All U.S. Women 1999

**Risks/Benefits of Oophorectomy:**

**Parker Model**

- **BREAST CA**
- **OVARIAN CA**
- **Coronary Heart Disease (CHD)**

**BSO**

**NO BSO**

**Risks/Benefits of Oophorectomy: Parker Model**

- **Systematic review of BSO as risk for CHD**
  - 1,956 citations considered
  - 7 articles met inclusion criteria
  - Meta-analysis not possible due to heterogeneity
  - No trials, observational studies only
  - Only one study rated high quality

<table>
<thead>
<tr>
<th>Study</th>
<th>Outcome</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nurses Health Study</td>
<td>CHD events</td>
<td>RR 2.2 (1.2, 4.2) adjusted for age, smoking</td>
</tr>
<tr>
<td>1976-1982</td>
<td></td>
<td>RR 1.7 (.9, 8.6) adjusted for age</td>
</tr>
<tr>
<td>Colditz et al, NEJM 1987</td>
<td></td>
<td>smoking, bp, cholesterol, DM, obesity, fam hx MI</td>
</tr>
</tbody>
</table>

Jacoby VL, Grady D, Sawaya G, AJOOG (in press)
**BSO as a Risk Factor for CHD**

<table>
<thead>
<tr>
<th>Author</th>
<th>Comparison group</th>
<th>Risk of CHD following BSO</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ritterband, 1963</td>
<td>Hyst, no BSO</td>
<td>NO</td>
</tr>
<tr>
<td>Gordon, 1978</td>
<td>Hyst, no BSO, Premenopausal</td>
<td>NO</td>
</tr>
<tr>
<td></td>
<td>Natural menopause</td>
<td>YES, age 40-44 NO</td>
</tr>
<tr>
<td>Palmer, 1993</td>
<td>Natural menopause</td>
<td>NO</td>
</tr>
<tr>
<td>Howard, 2005</td>
<td>Natural menopause</td>
<td>YES in some models</td>
</tr>
<tr>
<td>Colditz, 1987</td>
<td>Premenopausal</td>
<td>YES in some models</td>
</tr>
<tr>
<td>Svanberg, 1982</td>
<td>No prior hyst and/or BSO</td>
<td>YES</td>
</tr>
<tr>
<td>Luoto, 1995</td>
<td>No prior hyst and/or BSO</td>
<td>NO</td>
</tr>
</tbody>
</table>

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**Fracture and Oophorectomy**

<table>
<thead>
<tr>
<th>Study</th>
<th>Increased risk of hip fracture with postmenopausal BSO?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Study of Osteoporotic Fractures (SOF) Antinucci et al J Bone Miner Res 2005</td>
<td>NO</td>
</tr>
<tr>
<td>Mayo cohort Melton et al J Bone Miner Res 2003</td>
<td>YES</td>
</tr>
<tr>
<td>Rancho Bernardo Kritz-Silverstein et al Maturitas 2004</td>
<td>NO</td>
</tr>
</tbody>
</table>

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**Risks/Benefits of Oophorectomy: Parker Model**

- **BREAST CA**
- **OVARIAN CA**
- **FRACTURE**
- **CHD**

**Study of Osteoporotic Fractures (SOF)**

- **Antinucci et al J Bone Miner Res 2005**
  - NO

**Mayo cohort**

- **Melton et al J Bone Miner Res 2003**
  - YES

**Rancho Bernardo**

- **Kritz-Silverstein et al Maturitas 2004**
  - NO
**Risks/Benefits of Oophorectomy: Beyond Parker**

**Avoid Reoperation**
- Risk 3-5%
- Retrospective studies
- Most for pain, benign masses

**Quality of Life**
- Sexual functioning and mental health: MIXED DATA

**Risks/Benefits of Prophylactic Oophorectomy**
- Less improvement in some QOL measures 6 months post-op with BSO
- No differences by 2 years post-op

*Teplin (Jacoby), Vittinhoff et al, Ob Gyn 2007*
Conclusions

TAH vs SCH:
No significant benefit to SCH after 1-2 years of follow-up

Hysterectomy Route:
Vaginal hysterectomy preferred

Elective BSO:
• Counsel women re: risks/benefits
• Await randomized trial