Robotik Histerektomi

Prof.Dr. İlkkan DÜNDE
HYSTERECTOMY

• 500,000 hysterectomies performed each year on USA
• 90 % performed for benign indications
  Fibroids, abnormal uterin bleeding, chronic pelvic pain, descensus or prolapssus uteri, endometriosis

• 10 % performed for malign indications
  Endometrium CA, Cervix CA, Ovarian or Tubal CA, Sarcoma Uteri,
HYSTERECTOMY

Hysterectomy trends is going to down

*Increasing use of MEDICATIONS*

*Endometrial Ablation*

*IUD (mirena)*

*Less surgeries for fibroids & AUB*

*Uterin Arter Embolization*

*COSTS*

Wright JD et al 2013
Since 1990; Open Hysterectomies, Laparoscopic and Robotic Hysterectomies

**Figure 1.** Hysterectomy Rates by Route of Surgery Stratified by Year and Quarter

**Figure 2.** Hysterectomy Rates by Route of Surgery at Hospitals Where Robotic Hysterectomy Was Performed

RHS GOİNG UP
Minimaly Invasive Surgery

*Common proposed advantages over open hysterectomies:*

**FAST**
- Recovery
- Bowel recovery
- Feeding

**LESS**
- Postsurgical pain
- Complications due to comorbidity
- Wound infection
- Blood loss
RHS vs LHS  similar complication rates,
RHS stay in hospital    RHS cost

<table>
<thead>
<tr>
<th></th>
<th>Laparoscopic Hysterectomy (n = 4971)</th>
<th>Robotic Hysterectomy (n = 4971)</th>
<th>P Value</th>
<th>Robotic vs Laparoscopic Hysterectomy, Univariate RR (95% CI)</th>
<th>P Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Complications</td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Any</td>
<td>264 (5.3)</td>
<td>271 (5.5)</td>
<td>.76</td>
<td>1.03 (0.86-1.24)</td>
<td>.73</td>
</tr>
<tr>
<td>Intraoperative</td>
<td>120 (2.4)</td>
<td>126 (2.5)</td>
<td>.70</td>
<td>1.05 (0.75-1.47)</td>
<td>.76</td>
</tr>
<tr>
<td>Surgical site</td>
<td>100 (2.0)</td>
<td>86 (1.7)</td>
<td>.27</td>
<td>0.85 (0.64-1.13)</td>
<td>.27</td>
</tr>
<tr>
<td>Medical</td>
<td>59 (1.2)</td>
<td>79 (1.6)</td>
<td>.09</td>
<td>1.35 (0.97-1.88)</td>
<td>.08</td>
</tr>
<tr>
<td>Utilization</td>
<td></td>
<td></td>
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<tr>
<td>Transfusion</td>
<td>87 (1.8)</td>
<td>68 (1.4)</td>
<td>.12</td>
<td>0.80 (0.55-1.16)</td>
<td>.24</td>
</tr>
<tr>
<td>Reoperation</td>
<td>5 (0.1)</td>
<td>5 (0.1)</td>
<td>.99</td>
<td>1.00 (0.26-3.84)</td>
<td>.99</td>
</tr>
<tr>
<td>Length of stay &gt;2 d</td>
<td>1237 (24.9)</td>
<td>974 (19.6)</td>
<td>&lt;.001</td>
<td>0.78 (0.67-0.92)</td>
<td>&lt;.002</td>
</tr>
<tr>
<td>Total cost, $</td>
<td>6679 (5197-8673)</td>
<td>8868 (6787-11830)</td>
<td>&lt;.001</td>
<td>2189 (2030-2349)</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Fixed cost, $²</td>
<td>3040 (2281-4148)</td>
<td>4002 (2868-5780)</td>
<td>&lt;.001</td>
<td>962 (878-1047)</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Variable cost, $³</td>
<td>3483 (2597-4691)</td>
<td>4700 (3420-6237)</td>
<td>&lt;.001</td>
<td>1207 (1110-1304)</td>
<td>&lt;.001</td>
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<tr>
<td>Nonroutine discharge</td>
<td>14 (0.3)</td>
<td>11 (0.2)</td>
<td>.56</td>
<td>0.79 (0.35-1.78)</td>
<td>.79</td>
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<tr>
<td>Death</td>
<td>0</td>
<td>0</td>
<td></td>
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</tbody>
</table>

Abbreviation: RR, relative risk.
²Median (interquartile range).
Set-up

• Patient position
  Modified dorsal lithotomy
• Uterine maniplator
• Docking
  Side or center
• Trocar placement
  Umblical half-circular for benign diseases
Uterin Manipulaters
Trocar Placement for da Vinci SI

- Optic
- Arm 1
- Arm 3
- Asist
- Arm 2
- Umbilicus
- Pubis
DEEP TRENDELENBURG
Robotic Hysterectomy Steps

- Exploration of whole abdomen
- Adhesiolysis
- Observation of the Ureters
- Round Ligament coag & cut
- Opening of the L. Latum
- (L. Infundibulopelvicum &) L. Ovarii Proprium coag & cut
- Bladder flap
- Uterin Vessels coag & cut
- Colpotomy
- Uterine (and Adnexial) extraction
- Suturing vaginal cuff
- Bleeding controls
COMPLICATIONS

• Bleeding
• Vascular injury
• Bladder injury
• Bowel injury

• Experience
• Patient position & Anatomy
• Energy modalities
• Morcellator
# Robotic Hysterectomy vs. Laparoscopy vs. Open in Morbidly Obese Patients

<table>
<thead>
<tr>
<th></th>
<th>Robotic (n=193)</th>
<th>Laparoscopy (n=57)</th>
<th>Open (n=44)</th>
</tr>
</thead>
<tbody>
<tr>
<td>BMI (kg/m²)</td>
<td>40.4</td>
<td>39.7</td>
<td>38.9</td>
</tr>
<tr>
<td>Conversion to Open (%)</td>
<td>2.6</td>
<td>15.8</td>
<td>-</td>
</tr>
<tr>
<td>Mean Operating Time (skin to skin) (minutes)</td>
<td>137*</td>
<td>150</td>
<td>115</td>
</tr>
<tr>
<td>EBL (mL)</td>
<td>80*</td>
<td>206</td>
<td>389</td>
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</tbody>
</table>

* Significant difference

**Conclusion:**
For morbidly obese patients robotic surgery had lower operative times than laparoscopy, and lower EBL than open and laparoscopy, and should be strongly considered for surgical treatment of endometrial cancer in the obese population.

Note: Comparable major and minor complication rates, and pre-operative metrics.

“Robot-assisted laparoscopic hysterectomy is superior for endometrial cancer in the morbidly obese.” Dr. Maddock et al, 2011 SGO Abstract
ExCOST of Robotic Hysterectomy

• Monopolar scissor 500 USD
• Bipolar Fenestrated Forceps 400 USD
• Needle Holder 380 USD
• Drapes 250 USD

Approximately 1500 – 1600 USD
Prof. Dr. İlkkan Dünder
Robotik Histerektomi+ BSO