Robotic Surgery: Prostate Cancer and Other Urologic Applications

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• Role of laparoscopy in Urology
• Explain the daVinci robotic application
• Demonstration of robotic surgeries
• Discuss other robotic applications
### Laparoscopic Applications in Urology

<table>
<thead>
<tr>
<th>Organ</th>
<th>Applications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kidney</td>
<td>Malignancy, obstruction, partial and total nephrectomy, stones, cryo, RFA</td>
</tr>
<tr>
<td>Ureter</td>
<td>Malignancy, obstruction, malfunction, nephroureterectomy</td>
</tr>
<tr>
<td>Prostate</td>
<td>Malignancy, BPH</td>
</tr>
<tr>
<td>Bladder</td>
<td>Malignancy, augmentation, reconstruction, incontinence</td>
</tr>
<tr>
<td>Lymph nodes</td>
<td>Staging, diagnostic, therapeutic</td>
</tr>
<tr>
<td>Exploratory</td>
<td>Testes, diagnostic</td>
</tr>
</tbody>
</table>
Benefits of Laparoscopic Surgery

- Minimally invasive surgery (MIS)
- Faster recovery
- Less blood loss
- Less pain
- Shorter hospital stay
- Shorter recovery time
Why Robotic Surgery?

- It is not experimental!
- Evolution of laparoscopic practices that have been used in Urology for many years
- More degrees of motion in instrumentation
- Shorter learning curve for the surgeon
- Better visualization
- Less surgeon fatigue
- Extra hand for self-assist
Surgeon Testimonials
Robotics: Evolution of Laparoscopic Surgery
Why does precision matter?

- Remove the prostate cancer
- Preserve urinary function
- Preserve erectile function
- Analyze the prostate after surgery to assess risk of recurrence of cancer
Illustration of Precision
Surgical Incision Comparison - Prostate
The Robotic Assisted Laparoscopic Radical Prostatectomy
## Comparison of Prostate Procedures

<table>
<thead>
<tr>
<th></th>
<th>Open Surgery</th>
<th>Robotic Laparoscopic Surgery</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Time (Average)</strong></td>
<td>2h 18 min</td>
<td>1h 48min</td>
</tr>
<tr>
<td><strong>EBL</strong></td>
<td>623 cc</td>
<td>76cc</td>
</tr>
<tr>
<td><strong>LOS</strong></td>
<td>2.4 days</td>
<td>0.9 days</td>
</tr>
<tr>
<td><strong>Foley Catheter</strong></td>
<td>14-21 days</td>
<td>6.2 days</td>
</tr>
<tr>
<td><strong>Pain control</strong></td>
<td>28 PO tabs</td>
<td>6 PO tabs</td>
</tr>
<tr>
<td><strong>Surgical Margins</strong></td>
<td>7.3%</td>
<td>5.2%</td>
</tr>
<tr>
<td><strong>Urinary Continence</strong></td>
<td>54% at 3 months</td>
<td>78% at 3 months</td>
</tr>
<tr>
<td><strong>Sexual Potency</strong></td>
<td>62% at 12 months</td>
<td>71% at 7.3 months</td>
</tr>
<tr>
<td><strong>Return to DLA</strong></td>
<td>5 weeks</td>
<td>1.7 weeks</td>
</tr>
</tbody>
</table>
The Robotic Assisted Laparoscopic Partial Nephrectomy
Surgical Incision Comparison - Kidney
The Robotic Assisted Laparoscopic Partial Nephrectomy

Robotic Assisted
Laparoscopic
Partial Nephrectomy

Champ Weeks, MD
MultiCare Urology of Tacoma
Benefits of the Robotic Procedures

- Fewer complications
- Less blood loss
- Less postoperative pain
- Quicker return to normal activities
- Faster recovery
- Shorter length of hospital stay
- Shorter catheterization
- Less scarring
- Less risk of infection
Comparison

Can we at least match the results of the old gold standard open surgery?
Yes

Have we compromised our priorities of oncologic surgery?
No

Have we improved the patient’s quality of life?
Yes
Urologic Applications of the daVinci Robotic System

- Procedures performed today
  - Prostatectomy, Radical and Simple
  - Pyeloplasty
  - Total and partial nephrectomy
  - Radical nephroureterectomy
  - Radical cystectomy with urinary diversion
  - Ureteral reimplantation
  - Any lymph node dissections
  - Sacrocolpopexy

- More procedures coming …
Other Applications of the daVinci Robotic System

- Procedures performed today
  - Cardiac surgery – CABG, valve replacement, arrhythmia ablation
  - Thoracic surgery – oncology, repairs
  - ENT – Vocal cords, thyroid
  - GYN – hysterectomy, oncology
  - General Surgery – anything! Oncology and benign disease

- More procedures coming …
Why it matters to a CST

- Every robotic surgery must have a skilled assistant (CST, PA, NP, CRNFA)
- Specific skill set of technology
- Always keep improving, don’t settle for the “way it used to be”
- A founding pillar of the surgical team
Take Home Messages

- Get the education **AND** experience
- Shop for challenges
- Deal with the red tape to get into the game
- Work with forward thinking places
- Technology is a part of medicine, good and bad
- Question everything (when appropriate)
February 22, 1952: Veterinarians attempt the first skunk de-scenting operation.

Johnson, you idiot! You've armed the damn thing! She's gonna blowwwww!
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