Surgical Sub-specialization: Colorectal Specialist

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Disclosures

• I am a paid consultant for:
  – Applied Medical
  – Covidien
  – Olympus

Colorectal Specialty

• Well recognized specialty field
• Disease oriented specialty makes sense
• Technical advances
  – training
  – case volume

Colorectal Specialty

• Colorectal surgeons 1,500
• General surgeons 18,000
• 311 million to 340 million by 2020
• ~320,000 colorectal procedures
  – 50-100,000 anorectal procedures
• We can’t do it alone!!

Colorectal Specialty

• Where specialization matters
• How to train general surgeons?
• Ethical dilemmas
• How to plan for the future in your system?

A Poll?

• How many do > 20 colectomies?
• How many do lap colectomy?
• How many see > 4 rectal cancers a year?
Colectomy by General Surgeons

- Review of ABS database
- 2434 general surgeons at recertification

<table>
<thead>
<tr>
<th>Procedure</th>
<th>Percentile</th>
<th>70%</th>
<th>90%</th>
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<tbody>
<tr>
<td>Colectomy</td>
<td>Mean</td>
<td>11.2</td>
<td>14</td>
</tr>
<tr>
<td>Total colectomy</td>
<td></td>
<td>1.0</td>
<td>1</td>
</tr>
<tr>
<td>APR</td>
<td></td>
<td>0.8</td>
<td>1</td>
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</table>

Treatment for Rectal Cancer??

Local Excision + XRT

Proctectomy for Rectal Cancer: Technique Matters

- Surgeon to Surgeon Variability
  - Survival
  - Local Recurrence

Rectal Cancer Surgery

- Can be difficult
- Pelvis is a narrow bony box
- Lots of choices
  - Neoadjuvant therapy
  - Radiation: short course, long course
  - Chemotherapy: drugs, delivery method, dosing
  - Proctectomy or transanal excision
  - Reconstruction: colonic J pouch, coloplasty

Rectal Cancer: What makes a center of excellence?

- Hospital Volume
- Surgeon Volume
- Surgeon training/specialization

Colorectal Cancer: Hospital & Surgeon Volume

- California Cancer Registry, 1996-1999
- 28,644 stage I-III colorectal cancer
- High volume hospitals and surgeons better
  - 5 yr survival, mortality, sphincter salvage, use of XRT
- 5 yr survival HV surgeon >40 yrs – 59% vs. 53%
Rectal Cancer: What makes a center of excellence?

- Hospital Volume: Indirect effects
  - Surgeon volume
  - Radiation Oncology
  - Medical Oncology
  - Radiology
  - Nursing: OR, Ward, ETRN, Coordinators

- It ain’t the bricks and mortar!

Rectal Cancer: Surgeon volume

- SEER
  - Surgeon volume more important than hospital volume

- Maryland
  - Surgeon volume more important than hospital volume, but hospital volume still had an independent effect on outcome

Surgeon Variability

- 384 pts with Rectal Cancer
- All had preop XRT
- Surgery by CRS or GS
- Same stage and distance from anus

<table>
<thead>
<tr>
<th>CRS</th>
<th>GS</th>
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<tbody>
<tr>
<td>5yr Survival</td>
<td>77%</td>
</tr>
<tr>
<td>5yr Local Recur.</td>
<td>7%</td>
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</table>

Rectal Cancer: Common Sense

- A surgeon who:
  - Is specially trained
  - Has an interest in the disease
  - Takes care of lots of patients suffering from the disease
  - Has built a team of people to assist in the care of patients with the disease

- …should do better than the casual proctectomist
Colorectal Specialty

- Where specialization matters
- How to train general surgeons?
- Ethical dilemmas
- How to plan for the future in your system?

320,000 Colon Resections/Year - 2010

25 - 30% MIS 16,000 HAND

75%

Training in Laparoscopic Colorectal Surgery

- Options in the USA
  - Exclude surgeons
    - Should exclude surgeons who do less than 25 colectomies/year?
  - Await the growth of our young residents
  - Find an easier way to teach and learn
    - The role of the hand

Laparoscopic Colectomy: Learning Curve

- Steep (20-50 cases)
  - Depth perception
  - Multiple quadrants
  - Reverse angles
  - Coordination of team

Operative times

Conversion rates

Cadaver Course

- Have organized and participated in more than 120 course
- 2010 – 10 courses
- I see surgeons in their learning curve all the time.

How to get More Surgeons Involved?

- Options in the USA
  - Exclude surgeons
    - Should exclude surgeons who do less than 25 colectomies/year?
  - The growth of our young residents
  - Find an easier way to teach and learn
    - The role of the hand
Colon Resection for Cancer

% Laparoscopic Resections

How to get More Surgeons Involved?
- Options in the USA
  - Exclude surgeons
    - Should exclude surgeons who do less than 25 colectomies/year
  - Await the growth of our young residents
  - Find an easier way to teach and learn
  - ? The role of the hand

Learning Laparoscopic Colorectal Surgery: Do Weekend Courses Work?

Cadaver Course

Outline
- Lecture & Videos
- Positioning
- Right Colectomy
- Complications
- Energy in the OR
- Discuss colon cancer trials
- Left colectomy and pelvic dissection
- Evaluation by Instructor

Cadaver Course Do Weekend Courses Work?
- 32 surgeons surveyed
  - 79% <25 colon resections/year
  - 87% limited experience with lap. colectomy
  - Mean Fu – 12 months (4-48 mo)
- Adoption
  - 78% overall
  - 81% of inexperienced surgeons
  - Most began within one month
  - 22% nonadopters – await the perfect case
### Laparoscopic Colectomy: Cost – Clinical Practice

- Cleveland Clinic, 19% conversion
- ASA III/IV
- Elective resection, case control study

<table>
<thead>
<tr>
<th></th>
<th>LAP</th>
<th>OPEN</th>
<th>p value</th>
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<tbody>
<tr>
<td>n</td>
<td>231</td>
<td>231</td>
<td></td>
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<tr>
<td>Direct costs ($)</td>
<td>7,533</td>
<td>8,333</td>
<td>0.05</td>
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</table>

*Quality group, quality work, quality outcome*

*Surg Endosc 2010, 24:1280*

### Laparoscopic Colectomy: Cost – Clinical Practice

- University Healthsystems - Large Database
- Sigmoid resection – benign and malignant
- Elective resection – 10,603 patients, 10.3% LAP

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<thead>
<tr>
<th></th>
<th>LAP</th>
<th>OPEN</th>
<th>p value</th>
</tr>
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<tbody>
<tr>
<td>n</td>
<td>1,092</td>
<td>9,511</td>
<td>&lt; 0.05</td>
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<tr>
<td>Direct costs ($)</td>
<td>13,814</td>
<td>15,626</td>
<td></td>
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</table>

- Lower LOS (2 days) and complications (4.6%) in LAP Group
- Reduced overall costs

*Surg Endosc 2010, 24:1280*

### Laparoscopic Colectomy: Conversion – Clinical Practice

- Nationwide Inpatients Sample
  - 20% of all procedures
- 2002 – 2007     261,238 patients

<table>
<thead>
<tr>
<th></th>
<th>% LAP</th>
<th>% Conversion</th>
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<tbody>
<tr>
<td>2002</td>
<td>3.3</td>
<td>35.7</td>
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<tr>
<td>2007</td>
<td>9.3</td>
<td>38.0</td>
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</table>

- Conversion associated with:
  - Infectious complications IR 1.64
  - Anastomotic complications IR 1.28

*Am J Surg 2011, 201:630*

### Colorectal Specialty

- Where specialization matters
- How to train general surgeons?
- Ethical dilemmas
- How to plan for the future in your system?

### Ethical Dilemmas in Training?

- How do we develop successful training models?
- Who develops them?
- Who validates them?
- Who enforces them?

### Ethical Dilemmas in Training? Success Stories

- **SAGES**
  - FLS Fundamentals of Laparoscopic Surgery
  - FES Fundamentals of Endoscopic Surgery
  - FUSE Fundamentals in Usage of Surgical Energy
  - FHS Fundamentals of Hernia Surgery
- **ASCRS**
  - OR Competency Committee
  - Develop validated testing of colorectal techniques
- **GAGES**
  - Global Assessment of Gastrointestinal Endoscopic Skills

*Surg Endosc Aug 2010*
Ethical Dilemmas in Training? NOTES Courses

Your chairman asks you to develop a weekend course to teach NOTES:

• Design a weekend course to introduce NOTES
• Design a weekend course with testing and credentialing component
• Work with NOTES leaders to design a validated standard curriculum for credentialing
• Decline chairman’s offer

Kodner, Surgery 2012, 151:484

Planning for Your Future

• Prospective data collection on what you do
• You decide the important measures
• You collect your data
• Your analyze your data
  – Make improvements
  – Hold steadfast against insurance, government, lawyers

Planning for Your Future: Lahey Clinic

• Prospective data collection on all surgical procedures
• Prospectively collect 30 day outcome measures
  – Morbidity
• Review our data
• Implement improvement processes
  – Foley catheters
  – Anastomotic air leaks

WHAT IS THE EVIDENCE FOR ANASTOMOTIC LEAK TESTING IN COLORECTAL ANASTOMOSES?

R Ricciardi, PL Roberts, PW Marcello, LC Rusin, JJ Murray, JA Coller, DJ Schoetz
Department of Colon and Rectal Surgery
Lahey Clinic
Burlington, MA

RESULTS

Cohort
- 2,627 procedures
  - 998 (38%) left-sided
  - 899 (90.1%) stapled
    - Circular stapler (811)
    - Linear stapler (88)
  - 99 (9.9%) hand-sewn


CLINICAL LEAK: ANASTOMOTIC METHOD

<table>
<thead>
<tr>
<th></th>
<th>Leak Test</th>
<th>Intraoperative Leak</th>
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<tbody>
<tr>
<td>Hand-Sewn</td>
<td>99</td>
<td>21</td>
</tr>
<tr>
<td>Stapled</td>
<td>899</td>
<td>804</td>
</tr>
<tr>
<td>TOTAL</td>
<td>998</td>
<td>825</td>
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</table>


CLINICAL LEAK: AIRLEAK TEST RESULT

<table>
<thead>
<tr>
<th></th>
<th>Airtight</th>
<th>Airleak</th>
<th>Untested</th>
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<tbody>
<tr>
<td>Circular Stapled Anastomoses</td>
<td></td>
<td></td>
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</table>
  - 3.6%
  - 4.8%
  - 21.4%


REPAIR OF INTRAOPERATIVE AIRLEAKS

- Redo, 14
- Divert, 10
- Sutured, 41

65 total intraoperative air leaks

Suture Repair

• PERCEPTION:
• Suture repair alone should have same leak rate as a "no air leak" group
• 12.2% leak vs. No air leak 3.7%
• p<0.04
• Surprising
• Clinically relevant

Colorectal Specialty

• Where specialization matters
• How to train general surgeons?
• Ethical dilemmas
• How to plan for the future in your system?
• Give up mid and low rectal cancer
• Foster collaboration to develop validated training
• Track your results
• Re-evaluate with your results