

10th Annual
**Perspectives in Colorectal
Cancer**

Advances in Colorectal
Surgery
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Financial Relationships

No Disclosures

Advances in Colorectal Surgery

- Improve perioperative management
 - Bowel Preparation
 - Early Refeeding
 - Early mobilization



Advances in Colorectal Surgery

- Minimally Invasive Surgery
 - Colon cancer
 - Rectal cancer
 - Robots and NOTES

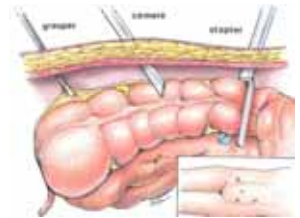
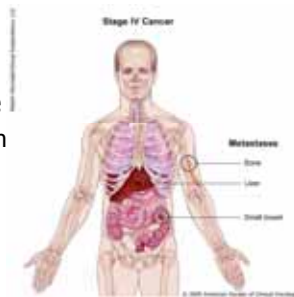


Figure from www.bandaidcolonsurgery.com

Advances in Colorectal Surgery

- Metastatic Disease
 - Changing paradigm of surgery for Stage IV Disease



Advances in Colorectal Surgery

Quality Standards
2009



Perioperative Management is Changing

Traditional Care

- Mechanical Preparation
- Drains / NG
- Intermittent Narcotics
- Forced starvation
- Immobilization
- ++ IV fluid

Care 2009 (?)

- No benefit to preparation
- No drains / no NG
- "Caine" based epidural
- Early Refeeding
- Early Mobilization
- Minimize IV fluids

Fast Track Surgery

- Enhanced Recovery
- Popularized in Denmark by Henrik Kehlet
- Multimodal rehabilitation
- Primary goal – reduction in postoperative ileus
 - Analgesia
 - Mobilization
 - Chewing gum
 - μ opioid antagonist



Fast Track Surgery

- Results in a dramatic decreased LOS
 - 3 days LOS
 - No change in surgical morbidity or mortality
- Improved functional result < 30 days
 - Less pain, less fatigue
 - Improved pulmonary function
 - Maintenance of lean body mass
- UK reduced average LOS from 7 to 3 days
 - Tolerated diet 28 hours sooner
- Results elsewhere less dramatic
 - 4.3 mean LOS at Cleveland Clinic
 - May depend on expectations

Basse BJS 2002; 89:446-53, Hjort Jakobsen Scand J Surg 2004; 93:24-8
Anderson BJS 2007; 84:890-3, Delaney BJS 2001; 88:1533-8, 2.

Fast Track Surgery 2009?

- Evaluation of care in 1,082 patients¹ undergoing CRS in 6 countries
 - >85% had bowel preparation
 - 40% had NG in the US
 - 3-4 days prior to tolerating clear fluids
- Average LOS from 2002-2006 in academic US centers = 11 days²

1. Kehlet J Am Coll Surg 2006; 202:45-54
2. Varela Am J Surg 2008; 196:403-6

Laparoscopic Colorectal Surgery

- 1991 First lap colectomy performed
- 2002 – 11% of surgeons had performed more than 20 lap colon resections
- 2004 – only 6.5% of colon resections performed laparoscopically
- Almost 80% cholecystectomies performed laparoscopically

Am J Surg. 2003; 186:13-6, Surg Endosc 2008; 22:1181-7, J Am Coll Surg 2008; 206:28-32

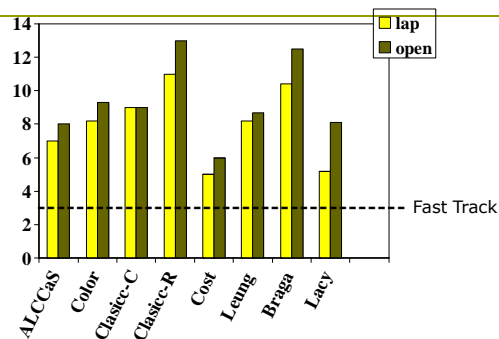
Morbidity

Study	Lap	Open
ALCCaS	37.8% (1.4%)	45.3% (0.7%)
COLOR	21% (1%)	20% (2%)
CLASICC	10% (4%)	10% (4%)
COST	23% (1%)	21% (<1%)
Leung	20% (2.5%)	22.5% (2%)
Tang	20%	13.6%
Braga	21% (1%)	38% (0%)
Lacy	11% (1%)	26% (3%)

Length of OR

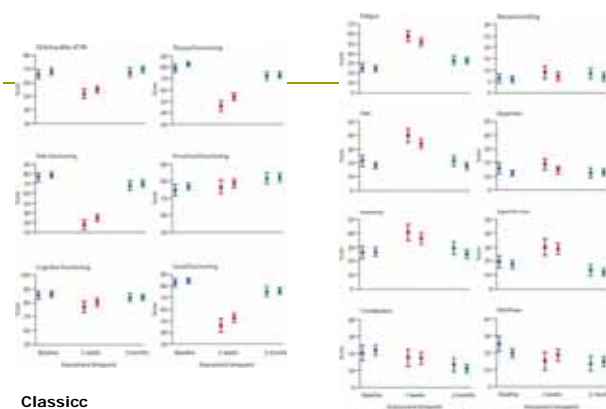
Study	Lap	Open	Dif
ALCCaS	158	107	51
COLOR	145	115	30
CLASICC	180	135	45
COST	150	95	55
Leung	190	144	46
Tang	88	70	18
Braga	222	177	45
Lacy	142	118	24

Length of Stay



Pain

- Leung – visual analogue scale on Day 1
 - Significantly higher rating in open group
 - 5.4 vs 4.6, $p = 0.003$
- Cost (449 patients)
 - No difference in Pain Distress Scale measured at 2 days, 2 weeks and 2 months post-operatively
- Cost, Color, Leung – all demonstrate decreased use of opiates



Other Effects



Adequacy of Resection

- 7 trials including 4,311 cancer patients
- No difference in number of nodes
- 6/7 trials - no difference in resection margins
 - ALCCaS
 - No difference in specimen length or margins for left sided resection
 - Shorter distal margin in right sided resection
 - <5cm in 19% of laparoscopic arm vs. 8% of open arm ($p=0.002$)

Long-term Outcomes

- 5 trials (Lacy, Leung, COST, CLASSICC, COLOR) reporting long-term results
 - No difference in 3 year survival
 - Lacy – trend to better survival in lap for Stage III
- Lacy study – reported survival benefit of laparoscopic approach at 95 months
 - Cancer survival better in lap group
 - Effect limited to stage III disease only
 - Single institution, 219 patients randomized
 - Results vary from all other studies

Lacy Ann Surg 2008; 248:1-7.

Laparoscopy for Rectal Cancer?

- Single center series demonstrate the approach is feasible^{1,2}
- CLASSIC Trial – 381 patients with rectal cancer³
 - 34% laparoscopic cases converted to open
 - Higher rate of TME in laparoscopic group
- But
 - Higher rate of positive CRM in laparoscopic anterior resection group 12% vs 4% p=0.19
 - Long-term, no difference in local recurrence⁴
 - Trend towards worse sexual function in laparoscopic group⁵
 - No significant difference long term⁴

1. Law DCR 2006; 49:1108-15, 2. Barhlener Surg Endosc 2005; 19: 757-66, 3. Guillou Lancet 2005; 365:1718-26 4. Jayne JCO 2007; 25:3061-8, 5. Jayne BJS 2005; 92:1124-32

Laparoscopy for Rectal Cancer

- Evaluation in RCT necessary!!!
 - With adequate power
 - Ongoing - COLOR-2¹
 - ACOSOG Z6051 now activated

1. Bjoeholt Int J Technol Assess Health Care 2006; 22:130-5

But What About....

- Robotic Surgery
 - No defined role in colorectal surgery
 - Device is currently cumbersome
 - Technology is improving
- NOTES
 - Natural Orifice Transluminal Endoscopic Surgery
 - Currently no defined role whatsoever



Figure from www.nature.com/.../ncpgasthep0867_F2.html

Surgery for Stage IV Disease

- Should we operate?
- If so, when should we operate?
- If so, who should go first?



Surgery for Stage IV

- 66% of people with stage IV CRC underwent surgery from 1988 – 2000
 - Much higher than rate of chemotherapy during this time period
 - No information about symptoms
- More frequent in young patients and right-sided tumors
- 30-day mortality in the elderly = 9%

Cook Ann Surg Onc 2005; 12:637-45
Temple JCO 2004; 22:3475-84

Curative Treatment

- Surgical resection is only opportunity for cure
 - Also prolongs survival
 - Hepatic and pulmonary
- Essential that patients are surgically evaluated to determine if resection for cure is possible
- Reevaluation essential for those potentially resectable with tumor shrinkage



Should we Operate for Palliation?

- Treatment of Symptoms
 - Prevention of complications
 - Treatment of bulky disease
 - Current standard of care
- But**
- Delay of therapy
 - Morbidity and Mortality

Surgery for Palliation

- Case-series have demonstrated safety of a selective approach to surgery for patients with Stage IV disease¹⁻⁴
- Most patients selected for non-operative approach will not require surgery
- If surgery required, usually for obstruction
- Difficult to determine systematically how patients were selected

Ruo J Am Coll Surg 2003; 196:722-8, Scoggins Ann Surg Onc 1999; 6:651-7, Muratore Ann Surg Onc 2007; 14:766-770; Poultsides JCO 2009; 27(15s)

NSABP C-10

- A Phase II Trial of FOLFOX6 + Bevacizumab for Patients with Unresectable Stage IV Colon Cancer and a Synchronous Asymptomatic Primary Tumor
 - Primary Outcome – major morbidity related to primary tumor – requiring surgery or resulting in death
 - Event rate greater than 25% would favor surgery
 - Target enrollment = 90 patients

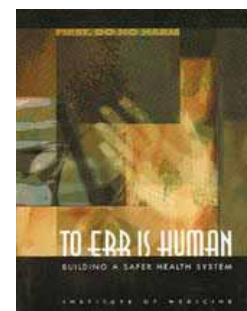
Bevacizumab and Unresected Primary

- First BEAT trial – cohort study of patients receiving bevacizumab for metastatic crc
 - 1,914 patients, 13% with unresected primary
 - Overall rate of GI perforation = 2%
 - In patients with intact primary = 3.1%
 - Similar findings in the BRiTE cohort study
- Need for surgery when on treatment
 - 13% risk of wound complications when on therapy vs. 3% when withheld
 - Withhold bevacizumab 30-60 days before surgery

Berry ASCO Annual Meeting Proceedings Part 1. Vol 24, No. 18S, 2006: 3534, Van Cutsem Ann Onc 2009; Apr 30 epub, Scappaticci J Surg Oncol 2005; 173-80

Quality of Care

The degree to which health services for individuals and populations increase the likelihood of desired health outcomes and are consistent with current professional knowledge.



Institute of Medicine

Quality of Care

FIGURE 1
Donabedian's framework of structure, process, and outcome



Current Endorsed Standards

- Colon and rectal cancer
 - Patient received postoperative chemotherapy within 9 months of diagnosis of rectal cancer
 - Patient received pelvic radiation therapy for rectal cancer within 8 months
 - Patient received adjuvant chemotherapy for colon cancer within 4 months of diagnosis
 - Patient had 12 or more lymph nodes removed and examined for colon or rectal cancer

Desch JCO 2008; 26:3631

JNCI Journal of the National Cancer Institute Advance Access published September 9, 2008

ARTICLE

Lymph Node Evaluation as a Colon Cancer Quality Measure: A National Hospital Report Card

Karl V. Slamon, David J. Bentzen, Andrew K. Stewart, Mark S. Tallent, David P. Winchester, Thomas R. Flisak, Clifford Y. Ho

"This study provides a national report card of nearly 1300 hospitals showing that more than 60% of institutions failed to achieve a compliance benchmark for the 12-node measure."

JNCI 2008; 100:1310-7

Standards?

- NO meaningful standards adopted for colorectal cancer surgery that are useful for measurement or accountability
- Node number does not assess any critical component of rectal cancer surgery
 - More pathology than surgery



Future Standards?

- Oncologic & Functional outcomes
 - Requires many cases for meaningful data
- Pathological audit and feedback
 - pathological expertise
- Centers of Excellence



Advances in Colorectal Surgery

- Better perioperative care
- Reduced morbidity of surgery
- Avoid surgery in some
- Evolution of approach to patients with Stage IV disease
- Quality 2009?

