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Evidence-based Series #2-20-2

Laparoscopic Surgery for Cancer of the Colon

A. Smith, R.B. Rumble, B. Langer, H. Stern, F. Schwartz, M. Brouwers, and members of Cancer Care Ontario's Laparoscopic Colon Cancer Surgery Expert Panel and Program in Evidence-based Care

Report Date: September 2005

Evidence-based Series #2-20-2 is comprised of 3 sections:	
Section 1:	A Clinical Practice Guideline
Section 2:	A Systematic Review
Section 3:	Guideline Development and External Review: Methods and Results

A Quality Initiative of Cancer Care Ontario's
Surgical Oncology Program and the Program in Evidence-based Care

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Evidence-based Series #2-20-2: Section 1

Laparoscopic Surgery for Cancer of the Colon: A Clinical Practice Guideline

A. Smith, R.B. Rumble, B. Langer, H. Stern, F. Schwartz, M. Brouwers, and members of Cancer Care Ontario's Laparoscopic Colon Cancer Surgery Expert Panel and Program in Evidence-based Care

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Report Date: September 2005

This report provides clinical, professional, and organizational advice regarding the role of laparoscopic surgery for adult patients with stages I, II, or III colon cancer for whom surgery is the first-line treatment of choice. These recommendations are limited to patients for whom there is available evidence, who do not have colon cancer associated with perforation, obstruction, fistula or attachment to other structures (locally advanced). This report does not apply to patients with rectal cancer.

This advice document is intended to assist in clinical decision making and planning for ALL surgeons (general surgeons, colorectal surgeons, etc.) and ALL institutions that treat patients with colon cancer in the Province of Ontario, Canada.

PART ONE: CLINICAL ISSUES

Clinical Question

Can laparoscopic surgery be recommended as an alternative to conventional open surgery for patients with stages I, II, or III colon cancer (not rectal cancer) based on a comparison of outcomes? Primary outcomes of interest include survival, recurrence, and adverse event rates. Secondary outcomes of interest are operating time and time until hospital discharge.

Target Population

Adult patients with stage I, II, or III colon cancer (not rectal cancer).

- Who do not have perforation, obstruction, fistula, or attachment to other structures (locally advanced disease).

Clinical Recommendations

Based on the clinical evidence, a consensus of expert opinion, and the experience of members of the Laparoscopic Colon Cancer Surgery Expert Panel (LCCSEP), the following is recommended:

- Laparoscopic surgery is recommended as an acceptable option for the treatment of stage I, II, or III colon cancer and should be considered an alternative to conventional open surgery for colon cancer in specified patients.

Key Evidence

- Pooling data from two randomized controlled trials involving 1,071 patients did not detect a statistically significant difference between laparoscopic surgery and open surgery for survival (85% versus 83%, respectively).
- Pooling data from two randomized controlled trials involving 1,071 patients did not detect a statistically significant difference between laparoscopic surgery and open surgery for recurrence (17% versus 21%, respectively).
- Data analyses from four randomized controlled trials each detected a statistically significant difference between laparoscopic surgery and open surgery for operating times in favour of open surgery (unweighted mean across studies: 163 minutes versus 111.5, respectively).
- Data analyses from four randomized controlled trials each detected a statistically significant difference between laparoscopic surgery and open surgery for time to hospital discharge in favour of laparoscopic surgery (unweighted mean across studies: 5.1 days versus 7.3 days, respectively).

Qualifying Statements

- The patient population to whom this guideline applies was the standard population studied in the randomized controlled trial reviewed.
- These recommendations do not apply to patients with colon cancer associated with perforation, obstruction, fistula, or attachment to other structures (locally advanced disease).
- The recommendations do not apply to patients with rectal cancer as evidence is unavailable for this population.
- Possible contraindications to performing a laparoscopic colon resection include general contraindications applicable to colon surgery in general, those applicable to other laparoscopic procedures in general, or those specific to a subgroup of patients. Previous colon resection, significant obesity, or another major medical illness represent relative contraindications and should only be approached by experienced laparoscopic colorectal surgeons.

PART TWO: PROFESSIONAL PRACTICE ISSUES

Professional Practice Question

What is the recommended experience and training for surgeons who perform laparoscopic surgeries for cancer of the colon?

Professional Practice Recommendations

- The Laparoscopic Colon Cancer Surgery Expert Panel recommends that surgeons should have completed a number of laparoscopic colectomies to a level of accepted competence, as determined by their peers in a structured mentoring process. The best evidence available indicates that primary outcomes are not statistically different between laparoscopic and open surgery for colon cancer after at least one member of the team has performed 20 laparoscopic colon resections, for either benign or malignant disease. Therefore, it is

recommended that either this number be adhered to or an equivalent process, including peer evaluation, be undertaken.
- Surgeons are strongly encouraged to self-audit their experiences. The use of audit tools such as that championed by the Canadian Association of General Surgeons (CAGS) is recommended.

Key Evidence
While identifying the minimum number of procedures to achieve competency has not been the explicit subject of study, these standards reflect the best available evidence to date, which are the professional characteristics of surgeons in the Clinical Outcomes of Surgical Therapy (COST) study, the largest randomized trial of laparoscopic colon cancer resection performed to date. Both the American Society of Colon and Rectal Surgeons (ASCRS) and the Society of American Gastrointestinal Endoscopic Surgeons (SAGES) have endorsed similar recommendations. The opinion of the Laparoscopic Colon Cancer Surgery Expert Panel is that these standards reflect the best evidence currently available regarding the minimum training required to achieve acceptable outcomes in curable colon cancer.

PART THREE: INSTITUTIONAL AND ORGANIZATIONAL ISSUES

Institutional and Organizational Question
What are the recommended criteria for institutions performing laparoscopic surgeries for cancer of the colon?

Institutional and Organizational Recommendations
The Laparoscopic Colon Cancer Surgery Expert Panel recommends that all eligible institutions should show a commitment to advanced laparoscopic surgery by providing appropriate equipment, operating room time, and human resources, including developing a team approach to maximize the experience and efficiency of all team members.

Key Evidence
The Laparoscopic Colon Cancer Surgery Expert Panel agreed that optimal results in advanced laparoscopic surgery, including colon cancer, depend on a commitment to appropriate equipment and resources.

Future Research
New evidence available through studies presently underway and/or the evolution of technology may change these recommendations in the future, and the results of ongoing trials will be integrated into updates of this document.

Related Guidelines
- Practice Guideline Report #2-1: *Adjuvant therapy for stage II colon cancer following complete resection*.
- Practice Guideline Report #2-2: *Adjuvant therapy for stage III colon cancer following complete resection*.
- Practice Guideline Report #2-20-1: *Mesorectal excision for rectal cancer [in progress]*.

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