

Focus Group on Laparoscopic Colectomy Education as Endorsed by The American Society of Colon and Rectal Surgeons (ASCRS) and The Society of American Gastrointestinal and Endoscopic Surgeons (SAGES)

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INTRODUCTION

A Focus Group on Laparoscopic Colectomy Education was convened and has developed a guideline for educating trained surgeons in the use of laparoscopic colectomy for colorectal disease. This guideline has been developed to address the increased interest in laparoscopic colectomy for cancer. The group has made recommendations regarding the content, faculty, and training model for hands-on courses in laparoscopic colorectal surgery. This guideline is intended to assist societies, course directors, teaching institutions, and national organizations in

developing training programs for their members and accrediting courses, which are provided by the members on a local level. This recommendation for training was developed by a focus group of surgeons and industry representatives with extensive experience in training fellows in ACGME (Accreditation Council For Graduate Medical Education) – approved training programs, teaching in a laparoscopic training program sponsored by the Association of Program Directors in Colon and Rectal Surgery, and training general surgeons in industry and institutional-sponsored training programs. The group was convened at Washington University in St. Louis in July 2004 and again at the annual meeting of the American College of Surgeons in New Orleans in October 2004.

This document was reviewed and approved by the SAGES Board of Governors and the Continuing Education and Guidelines Committee and the ASCRS Executive Council and Standards Committee.

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Dis Colon Rectum 2006; 49: 945–949

DOI: 10.1007/s10350-006-0559-5

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Published online: 2 May 2006

BASIC MODULE

General Objectives

To provide the practicing surgeon (general and colorectal) as well as the residents/fellows with

exposure to basic skills in laparoscopic techniques that form the basis for laparoscopic colectomy and to provide the basic information regarding indications, complications, and special considerations for laparoscopic colectomy.

Curriculum

Didactic (8 hours)

- i. Instrumentation
- ii. Operating room setup (right, left, total, rectal)
- iii. Insufflation
- iv. Anatomy
- v. Tissue handling
- vi. Complications – general laparoscopic/laparoscopic colorectal
- vii. Indications/contraindications

Porcine Lab (8 hours)

- i. Basic Skills
 1. Safe trocar insertion and pneumoperitoneum
 2. Tissue handling/dissection/retraction
 3. Camera control
 4. Energy sources
 5. Vascular control
 6. Bowel division and anastomosis
 7. Use of gravity for retraction
 8. Eye-video-hand coordination and surgeon positioning
- ii. Procedures Lab
 1. Simulated appendectomy with uterine horns-bilateral
 2. Tack and drain of bladder
 3. Mobilize rectum along aorta and into pelvis
 4. Divide rectum and perform EEA (end-to-end anastomosis) at multiple levels
 5. Small-bowel resection and intracorporeal anastomosis
 6. Dissect cecum from terminal ileum and spiral colon
 7. Cecectomy
 8. End colostomy and colostomy closure
 9. Splenectomy (to simulate vascular control)
 10. Small-bowel suturing

Faculty

Course Director. A surgeon who is certified by the American Board of Surgery (or equivalent) and has performed at least 50 laparoscopic colectomies and who is willing to proctor and/or precept trainees.

Instructor. A surgeon who is certified by or eligible for certification by the American Board of Surgery (or equivalent) and has performed at least 50 laparoscopic colectomies.

Faculty to Student Ratio. A minimum of one faculty member to three tables with three surgeons at each table (1:9). A lower faculty to surgeon ratio (1:6) is strongly encouraged.

Facility. An animal laboratory equipped with at least two tables, all of which move to Trendelenberg position and tilt right or left, is required. Each table should have one video tower with insufflator, light source, and camera. Each animal should be monitored and a veterinary technician should be available to manage the anesthesia for the group of animals. The animal facility must meet the Food and Drug Administration, the Association for Assessment and Accreditation of Laboratory Animal Care International, or the Institutional Animal Care and Use Committee guidelines.

Participant Qualification. Senior Residents/Fellows in training, colorectal surgeons with no/limited laparoscopic experience (<20 cases), general surgeons with no/limited laparoscopic colorectal experience (<20 cases) and with significant potential for colorectal cases.

Certificate of Participation. The basic course will **not** provide adequate training for laparoscopic colectomy. The certificate of participation will state that the participant has completed this course in preparation for attending a subsequent advanced course.

ADVANCED MODULE

General Objective

To provide the practicing general or colorectal surgeons and residents/fellows with the technical skills, video anatomic recognition, methods of retraction, exposure, and vascular ligation that will allow the right, left, transverse, and sigmoid colon and rectum to be safely removed.

Curriculum

Didactic (2 hours – generally 1 hour for right and transverse colon, 1 hour (at lunch) for left colon and rectum)

- i. Operating room setup and instrumentation
- ii. Review of complications

- iii. Video review of right, left, transverse, and sigmoid colectomy and rectal resection
- iv. Hand-assisted approach

Cadaver Lab (6 hours)

- i. Universal precautions
- ii. Positioning, surgeon alignment
- iii. Right colectomy – medial, lateral, posterior approaches
- iv. Sigmoid colectomy – medial, lateral approaches
- v. Transverse colectomy – laparoscopic and hand-assisted approach
- vi. Rectal resection – laparoscopic and hand-assisted approach
- vii. Ureter identification, nerve preservation, splenic flexure mobilization, hepatic flexure mobilization, duodenal protection, small-bowel retraction, omental preservation, omentectomy

Faculty

Course Director. A surgeon who is certified by the American Board of Surgery (or equivalent) and recognized as an expert in laparoscopic colectomy, having performed at least 50 laparoscopic colectomies and taught laparoscopic colectomy to residents/fellows or other practicing surgeons.

Instructor. A surgeon who is certified by or eligible for certification by the American Board of Surgery (or equivalent) and has performed at least 50 laparoscopic colectomies.

Faculty to Student Ratio. Each cadaver should be accompanied by one instructor. Each cadaver may have two to three students (1 to drive the camera, 2 operating – rotating with each segment).

Facility. A laboratory with the capacity for four to ten stations is optimal. The thawed, fresh-frozen cadaver should be prepared (wrapped) to prevent spillage of fluid. Tables must be able to provide Trendelenberg position and tilt to the right and left. Each table should be equipped with a video tower with insufflator and camera/light source. Although a veterinary technician is not needed, an adequate number of technical personnel should be available. The lab facility should conform to accepted guidelines (nationally or locally) for cadaver-based courses.

Participant Qualification. The use of a cadaver to train surgeons to perform laparoscopic colectomy should be limited to the following groups:

- a. General or colorectal surgeons performing >25 colectomies per year with:
 - i. advanced laparoscopic experience *or*
 - ii. experience in a basic laparoscopic colectomy course and experienced laparoscopic surgeons as partners who will mentor
- b. Advanced laparoscopic surgeons and/or senior surgical residents or fellows with the potential for >25 colectomies per year.

A prerequisite for participation in an advanced course is demonstration of the availability of a mentor or preceptor who has a significant experience with laparoscopic colectomies or other advanced laparoscopic procedures. All of the above must show evidence of the availability of a mentor or preceptor who will help the student/trainee through the learning curve. Proof should be in the form of a letter from said mentor/preceptor. A preceptor should be available for the trainee's first case, as a minimum.

Certificate of Participation. The advanced course will provide a certificate of participation that will attest to the participant's completion of a cadaver course covering all aspects of laparoscopic colectomy. The certificate is not a measure of competence. However, the course director must be willing to withhold issuance of a certificate to those individuals who have not demonstrated, to the satisfaction of the director, the ability to safely and satisfactorily complete a laparoscopic colectomy. Such an individual may apply for participation in subsequent courses. The certificate of participation may be presented by the participant to hospital credentialing committees as evidence that the practitioner can perform laparoscopic colectomy. It is suggested that the course director develop a score sheet for each participant to be completed by each instructor for all participants at the cadaver table (Appendix 1). These records should be maintained on file for each practitioner.

CONTINUING MEDICAL EDUCATION

Continuing Medical Education (CME) credit should be available for all courses provided on a national level sponsored by societies or national organiza-

tions. Local/institutional courses should have the option to provide CME.

SYLLABUS

Each course should be accompanied by a syllabus consisting of a current bibliography, articles that provide technical points, diagrams of operating room setup, positioning and instrument placement, and anatomic drawings of important landmarks for each approach (medial, lateral, posterior) to colectomy. Objectives, goals, and a course curriculum should be provided with the syllabus. A step-wise approach to colectomy should be provided. The syllabus should be updated yearly.

DATA COLLECTION

A precourse and postcourse as well as a one-year adoption of technique survey should be performed by the course director (Appendix 2). Course participants should agree to participate in a registry, which collects not only case numbers, but also outcomes of their technique. One such example is the web-based SAGES surgical registry.

ACKNOWLEDGMENTS

The Focus Group: David Beck, M.D., Ochsner Clinic, New Orleans, LA; Elisa Birnbaum, M.D., Washington University, St. Louis, MO; Brad Burklow, Olympus America, Melville, NY; Jeffrey Cohen, M.D., Hartford Hospital, Hartford, CT; Paul Conrad, Ethicon Endosurgery Inc., Cincinnati, OH; Matt Fahy, Olympus America Inc., Melville, NY; Peggy Frisella, Washington University, St. Louis, MO; Tiffanie Heller, Ethicon Endosurgery Inc., Cincinnati, OH; Gary Johnson, Applied Medical, Rancho Santa Margarita, CA; David Margolin, M.D., Ochsner Clinic, New Orleans, LA; Susan Martin, Ethicon Endosurgery Inc., Cincinnati, OH; Tim Miravalle, Olympus America, Inc., St. Charles, MO; Molly Morales, Karl Storz, Culver City, CO; Matthew Mutch, Washington University, St. Louis, MO; Deborah Nagle, M.D., Drexel, Philadelphia, PA; Melissa Pregel, Ethicon Endosurgery Inc., Cincinnati, OH; Howard Ross, M.D., University of Pennsylvania, Philadelphia, PA; Clifford Simmang, M.D., University of Texas Medical Center, Dallas, TX; Ted Stanley, Applied Medical, Rancho

Santa Margarita, CA; Gene Stewart, United States Surgical, Norwalk, CT; William Timmerman, M.D., Richmond, VA; Wes Vega, Olympus America Inc., Ballwin, MO; Dan Vonder-Haar, Karl Storz, Chesterfield, MO; Mark Whiteford, Oregon Clinic, Portland, OR; John Wilson, United States Surgical, St. Louis, MO.

APPENDIX 1

**Laparoscopic Colectomy Cadaver Course
Participant Evaluation Sheet**

<i>Date</i>	<i>Institution</i>				
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Participant Name: _____

	YES					NO
Video Review						
Right colectomy	_____					_____
Left colectomy	_____					_____
Rectal dissection	_____					_____

Technical Aspects	Circle Appropriate answer (1 = unsatisfactory to 5 = superior)				
Trocar placement	1	2	3	4	5
Camera operation	1	2	3	4	5
Works in line with pathology/camera	1	2	3	4	5
Handles tissue carefully	1	2	3	4	5
Understands vascular control	1	2	3	4	5
Identifies planes for dissection	1	2	3	4	5
Identifies ureter	1	2	3	4	5
Understands traction/ countertraction	1	2	3	4	5
Understands approaches to colectomy	1	2	3	4	5
Right medial	1	2	3	4	5
Right lateral	1	2	3	4	5
Right posterior	1	2	3	4	5
Left medial	1	2	3	4	5
Left lateral	1	2	3	4	5
Rectal posterior	1	2	3	4	5
Omentectomy	1	2	3	4	5
Omental preservation	1	2	3	4	5
Transverse colectomy	1	2	3	4	5
Hand-assisted approaches to above	1	2	3	4	5

Participant Signature

Date

Instructor Signature

Date

APPENDIX 2

Laparoscopic Colectomy

Precourse Evaluation

- 1. How many laparoscopic colectomies did you perform during:
 - a. Residency, of these, _____
for cancer _____ # for benign disease ____
 - b. Fellowship, of these, _____
for cancer _____ # for benign disease ____
 - c. Practice, of these, _____
for cancer _____ # for benign disease ____
- 2. How many open or laparoscopic colectomies do you perform in an average month?
 - 0
 - 1-5
 - 6-10
 - 11-20
 - >21
 - <50
- 3. Have you performed other laparoscopic procedures?
 - Yes
 - No
 If yes,

in past 12 months.

Basic laparoscopy:

- Cholecystectomy _____
- Appendectomy _____
- Inguinal hernia repair _____

Advanced laparoscopy:

- Ventral hernia repair _____
- Nissen fundoplication _____
- Gastric bypass or resection _____
- Gastric banding _____
- Nephrectomy _____
- Adrenalectomy/splenectomy _____
- Other advanced procedures _____

- 4. Do you have partners who perform laparoscopic colectomy?
 - Yes
 - No
- 5. Do you have partners who perform advanced laparoscopic surgery?
 - Yes
 - No
- 6. Does your hospital have an "internal" preceptor for you to begin laparoscopic colectomy?
 - Yes
 - No
- 7. Why are you taking this course? (check all that apply)
 - COST (Clinical Outcomes of Surgical Therapy) Study New England Journal of Medicine 2004 results
 - Losing patients to surgeons performing laparoscopic colectomy
 - Laparoscopic colectomy provides recovery benefits over open colectomy

- Laparoscopic colectomy is an important tool in surgeon's armamentarium
 - Patients are demanding laparoscopic colectomy
 - Gastrointestinal referrals are demanding laparoscopic colectomy
- 8. Which of the following prompted you to select this course? (check all that apply)
 - Course location
 - Faculty
 - Cost
 - Hands-on lab
 - Cadaver model
 - Student/instructor ratio
 - Hand-assisted technique
 - Lecture topics
 - Videos of procedures
 - 9. Have you attended any of the following? (check all that apply)
 - Basic Laparoscopic Techniques Course
Date: _____
 - Hands-on Animal Course on Laparoscopic Colectomy
Date: _____
 - Hands-on Cadaver Course on Laparoscopic Colectomy
Date: _____
 - Advanced Laparoscopic Techniques Course
Date: _____

Postcourse Evaluation

- 1. Are you now ready to perform a laparoscopic colectomy for (check all that apply)
 - Right colon cancer
 - Left colon cancer
 - Rectal cancer
 - Diverticulitis
 - Colon polyps
- 2. How many laparoscopic colectomies for benign disease will you perform before attempting a laparoscopic colectomy for cancer?
 - 0
 - 1-5
 - 6-10
 - 11-20
 - >21
 - <50
- 3. Will you use hand-assisted techniques?
 - Yes
 - No
- 4. Will you attend another laparoscopic colectomy course in the next year?
 - Yes
 - No
- 5. Would you recommend this course to other interested surgeons?
 - Yes
 - No