



**Temple University Department of Surgery**  
**Surgical Skills Lab**

## ADVANCED LAPAROSCOPIC SKILLS

### Laparoscopic Left Colectomy

#### I. OBJECTIVES

*By the end of this session the residents will be familiar and demonstrate knowledge of:*

- 1) The overall indications for laparoscopic left colectomy.
- 2) The use of laparoscopic instrumentation in laparoscopic left colectomy.
- 3) Recognize the establishment of safe peritoneal access and insufflation.
- 4) Recognize correct laparoscopic tissue handling.
- 5) Recognize laparoscopic equipment used in this procedure.
- 6) Recognize anatomy affected by this laparoscopic procedure.
- 7) Demonstrate comprehension of this procedure by the completion of the procedure in the animal model.

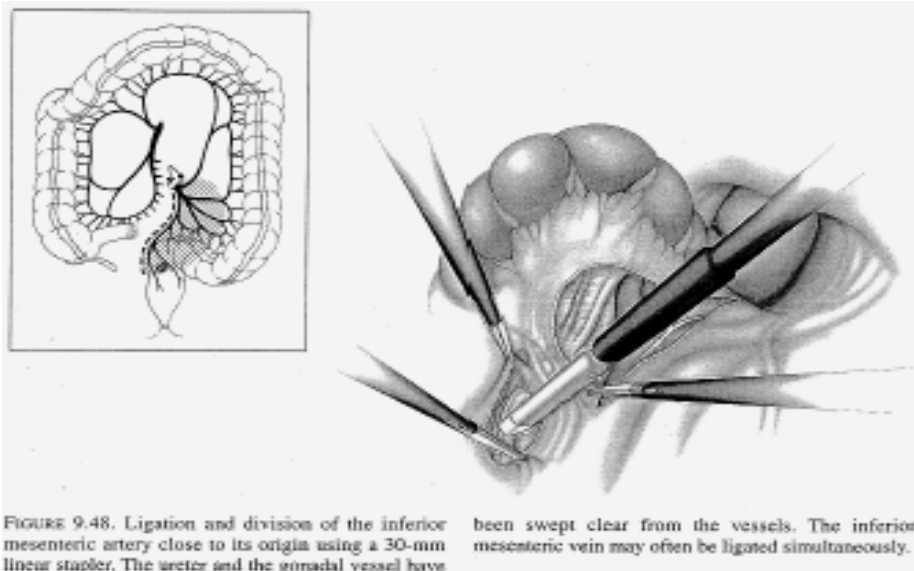
#### II. ASSUMPTIONS

Completion of Laparoscopic Knot Tying module.

#### III. SUGGESTED READING

1. References in Section VIII.
2. [www.websurg.com](http://www.websurg.com) under general and digestive surgery (colon).

#### IV. ANATOMICAL CONSIDERATIONS



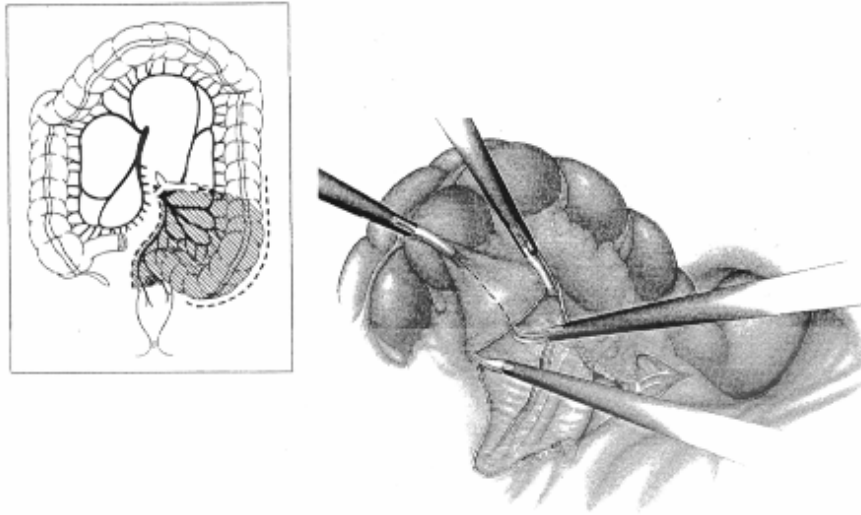


FIGURE 9.50. Transection of the mesentery of the descending sigmoid colon junction by applying triangulating tension. Vessels are clipped as they are encountered.

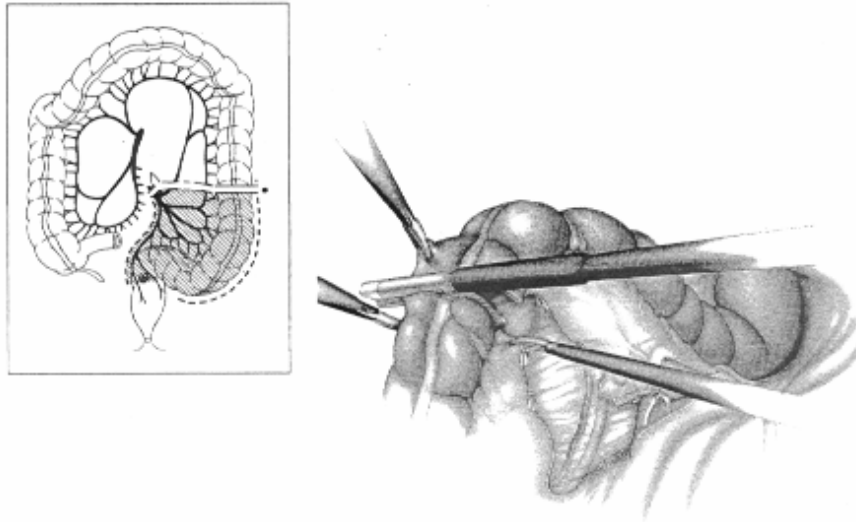


FIGURE 9.51. The proximal resection line of the colon is transected with one or two applications of the 30-mm endoscopic stapler.

## V. DESCRIPTION OF LABORATORY MODULE

After a brief overview of laparoscopic left colectomy, residents will divide into groups (3-4 each) and perform laparoscopic left colectomy on an anesthetized animal.

## **VI. DESCRIPTION OF TECHNIQUE/PROCEDURE**

- 1) Make a skin incision at the umbilicus for the Veress needle and laparoscope/camera trocar.
- 2) Insert the Veress needle.
- 3) Inject saline to ensure proper placement.
- 4) Perform insufflation procedure.
- 5) Insert laparoscope/camera trocar.
- 6) Insert the instrument trocars in the suprapubic, left lower and right lower quadrants under visualization.
- 7) Explore the peritoneal cavity visually.
- 8) Gently place small bowel loops in the upper abdomen.
- 9) Incise the peritoneum inferomedial to the inferior mesenteric vessels at the level of the sacral promontory.
- 10) Identify the left ureter and gonadal vessels and dissect them away from the colon mesentery.
- 11) Create window on superolateral side of inferior mesenteric vessels and divide with endoGIA vascular load.
- 12) Dissect the lateral peritoneal attachments to completely mobilize the colon.
- 13) Create a window in the mesorectum adjacent to rectosigmoid wall and divide the rectosigmoid colon using endoGIA stapler.
- 14) Divide the remaining mesentery using cautery, Harmonic Scalpel or Ligasure.
- 15) Remove LLQ trocar and enlarge incision to deliver the bowel externally.
- 16) Transect the descending colon and place purse string suture with EEA anvil.
- 17) Return bowel into the peritoneum and close LLQ incision.
- 18) Create anastomosis with EEA stapler and check for airleak.
- 19) Irrigate and suction.
- 20) Remove trocars under visualization.

## **VII. EQUIPMENT NEEDED**

- Laparoscopic video tower with insufflation, camera, light source
- 5 or 10mm 30° laparoscope
- Laparoscopic instruments (bowel graspers/Babcock/scissors)
- Veress needle
- EndoGIA (bowel and vascular loads)
- Harmonic Scalpel and Cautery
- EEA stapler
- Laparoscopic suction-irrigator
- Anesthetized pig (70-80 lbs)

## **VIII. REFERENCES**

Milsom JW and Bohm B. Laparoscopic Colorectal Surgery. Springer-Verlag, New York, 1996, pp 148-166.

Gordon PH and Nivatvongs S. Principles and Practice of Surgery for the Colon, Rectum, and Anus. Quality Medical Publishing, Inc, 1999, pp. 1337-1358.

# Laparoscopic Nissen Fundoplication

## **I. OBJECTIVES**

*By the end of this session the residents will be familiar and demonstrate knowledge of:*

- 1) The overall indications for Laparoscopic Nissen Fundoplication.
- 2) The use of laparoscopic instrumentation in Laparoscopic Nissen Fundoplication.
- 3) Recognize the establishment of safe peritoneal access.
- 4) Recognize correct laparoscopic tissue handling.
- 5) Recognize laparoscopic equipment used in this procedure.
- 6) Recognize anatomy affected by this laparoscopic procedure.
- 7) Demonstrate comprehension of this procedure by the completion of the procedure in the animal.

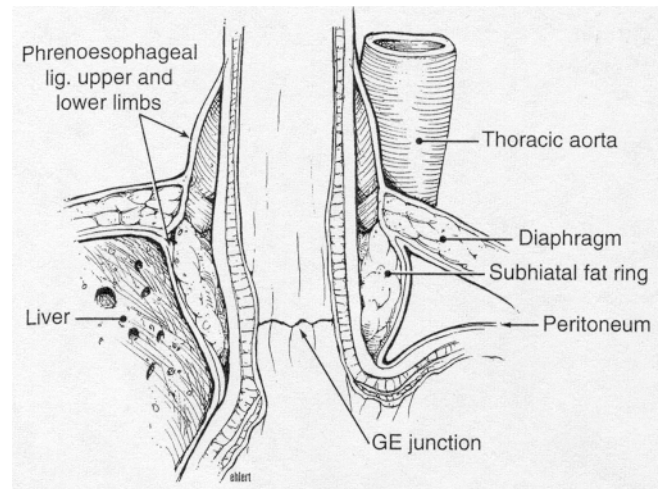
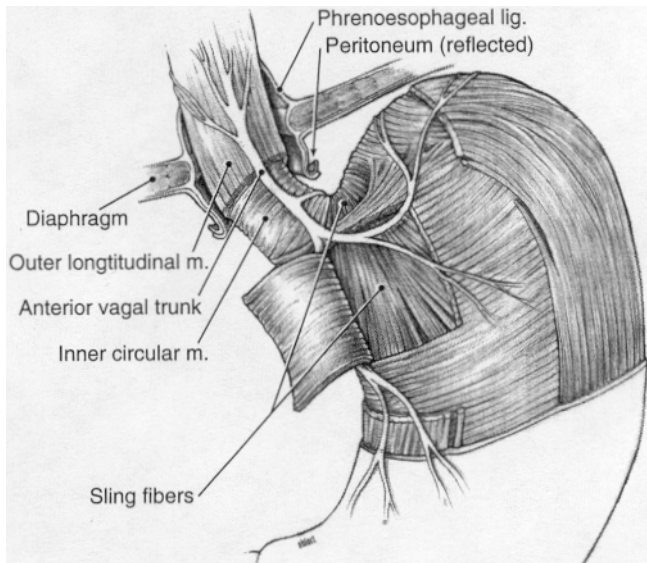
## **II. ASSUMPTIONS**

Review the handout on Laparoscopic Nissen Fundoplication and/or the SAGES CD ROM Volume 2.

## **III. SUGGESTED READING**

(See section VII.)

#### IV. ANATOMICAL CONSIDERATION



#### V. DESCRIPTION OF LABORATORY MODULE

After a brief overview of Laparoscopic Nissen Fundoplication, residents will divide into groups of 3 and perform Laparoscopic Nissen Fundoplication on an anesthetized animal.

#### VI. DESCRIPTION OF TECHNIQUE/PROCEDURE

- 1) Make a skin incision about two finger breadths above the umbilicus for the Veress needle and laparoscope/camera trocar.
- 2) Insert the Veress needle.
- 3) Perform safety tests.
- 4) Perform insufflation procedure.
- 5) Insert laparoscope/camera trocar.
- 6) Insert the instrument trocars in the left and right upper abdomen under laparoscopic visualization.
- 7) Explore the peritoneal cavity visually.
- 8) Expose the cardia and gastric fundus.

- 9) Incise the part of the lesser omentum superior to the hepatic vagus branches, parallel to the right abdominal border of the esophagus.
- 10) Clear off the phrenoesophageal membrane.
- 11) Place an elastic loop around the abdominal esophagus.
- 12) Expose the crural pillars of the esophageal hiatus.
- 13) Place three or four interrupted sutures to reduce the esophageal hiatus.
- 14) Divide the short gastric vessels with ultrasound dissector to mobilize the fundus.
- 15) Pull the mobilized fundus behind the esophagus, in front of the repaired hiatus.
- 16) Wrap the fundus around the esophagus and secure the wrap with one to four interrupted sutures.
- 17) Remove the trocars under laparoscopic visualization.

## **VII. EQUIPMENT NEEDED**

- Laparoscopic ligaclip applier
- Assortment of laparoscopic instruments
- Veress needle
- Assortment of laparoscopic trocars
- Laparoscopic camera and source
- Laparoscopic equipment tower with insufflation
- 5mm 30° laparoscope
- 10mm 30° laparoscope
- Cautery unit
- Endostitch
- Ultrasonic dissector
- Appropriate sutures
- Suture bolsters
- Endo-GIA

## **VIII. REFERENCES**

Bowrey DJ and Peters JH. Laparoscopic Esophageal Surgery. Surgical Clinics of North America, 80(4):1213-1242, 2000.