

# Curriculum

## A. DEFINED CURRICULUM

### University Hospitals Cleveland Medical Center

### Bariatric and Minimally Invasive Surgery Fellowship Program

#### Educational Program (Basic Curriculum)

This is a bariatric fellowship which includes upper and lower endoscopy and esophageal studies. By completion of this fellowship, it is intended that the fellow will become proficient in minimally invasive surgical techniques and have the skills to perform gastrointestinal and bariatric surgery and manage gastrointestinal diseases minimally invasively. There will be a focus on surgical management of obesity, gastroesophageal reflux disease and other esophageal disorders. The fellow will develop skills in upper and lower endoscopy and in advanced endoscopic techniques. The fellow will also learn to run an esophageal physiology laboratory. He will be able to interpret esophageal manometry, esophageal pH studies and impedance technology for the evaluation of esophageal diseases. Finally, the fellow will also be involved in research, both clinical and in the animal laboratory, to help advance surgical knowledge in the management of gastrointestinal diseases.

The fellow will have the opportunity to operate in both an academic and private practice setting. One of the hospitals has residents and the other does not. The most unique aspect of this fellowship is that the fellow will become skilled in the care of esophageal diseases and treatments for obesity. This is a mixed MIS fellowship which encompasses upper and lower endoscopy, esophageal physiology testing and bariatrics.

The program has a combined curriculum that includes Bariatric, Esophageal Disorders, and SAGES Curriculum for Advanced Laparoscopic Techniques. The core curriculum of the program will be similar to those outlined in the SAGES handbook for advanced laparoscopy with a focus in gastrointestinal surgery, anti-reflux procedures and bariatric surgery. The SAGES Manual will be used as the syllabus for the fellowship.

#### Upper and Lower Endoscopic Procedures

The fellow will be taught the latest endoscopic treatments for reflux and weight loss. They will also participate in diagnostic and therapeutic endoscopic procedures for more common gastrointestinal problems.

## Advanced Laparoscopic Procedures

### Principles/Skills

The initiation of an experience in advanced laparoscopic surgical procedures for the surgical trainee should only begin once the skills of basic laparoscopy have been mastered. While individual training programs will likely have a different mix of cases in which advanced laparoscopic approaches are used, there is a core group of technical skills that should be mastered through the performance of some variety of such procedures. Such skills can be appropriately introduced and taught through preliminary and if needed concurrent additional skills laboratories involving surgical trainers, animal models, or other simulated operating conditions. These skills include but are not limited to the following:

- two-handed surgical manipulations
- two-handed dissection
- intracorporeal suturing
- intra- and extracorporeal knot tying
- intracorporeal tissue approximation with sutures and staples
- achieving hemostasis from unexpected hemorrhage
- exposure of all intra abdominal and retroperitoneal organs

Mastery of these core advanced skills, coupled with an adequate experience in the performance of a procedure using a traditional approach (for example, open Nissen fundoplication) will likely allow the surgical trainee to master the particular advanced laparoscopic procedure (in this example laparoscopic Nissen fundoplication) in a setting requiring fewer supervised or assisted cases than if those skills were not yet completely mastered before embarking on an experience with the advanced procedure.

The greater the experience of the resident in all types of advanced laparoscopic procedures, the greater the likelihood that the ability to learn and perform additional advanced procedures will occur with safety and facility. Thus it is the combined experience in advanced procedures that should be emphasized, rather than necessarily the mastery of any one individual procedure. However, it is also expected that case mix and availability will on some occasions allow the resident a significant enough experience in one of the procedures below to serve as a basis for mastery of its performance.

### **Laparoscopic Inguinal Herniorrhaphy**

The resident should become familiar with the following concepts and aspects of this procedure:

- indications for performing a laparoscopic versus an open inguinal herniorrhaphy; relative advantages and disadvantages of each approach

- situations where these advantages are more likely (i.e. recurrent and bilateral hernias for the laparoscopic approach)
- methods currently used: transabdominal preperitoneal and total extraperitoneal; relative advantages and disadvantages of each approach
- trocar placement
- knowledge of inguinal anatomy from the laparoscopic view
- proper dissection techniques
- placement of prosthetic mesh and securing it appropriately in place
- coverage of mesh
- complications specific to laparoscopic herniorrhaphy and their prevention and treatment
- expected long-term results

### **Laparoscopic AntiReflux Procedures**

The resident should be knowledgeable about the following aspects of these procedures:

- indications for performing antireflux surgery
- interpretation of preoperative tests for GERD
- understanding modifications of operations based on preoperative testing
- expected benefits and efficacy of antireflux surgery
- knowledge of anatomy of proximal gastric/distal esophageal area including
- ability to locate and easily identify major structures including both vagal trunks
- technical performance of the procedure, including:
  - trocar placement
  - division of short gastric vessels
  - crural and esophageal dissection
  - suturing diaphragmatic crura
  - positioning of wrap
  - suturing of wrap

potential intraoperative and postoperative complications, their recognition and treatment

### **Patient Evaluation**

History and physical

Understand the questionnaires for assessment of GERD and dysphagia

### **Diagnostic Work Up**

Endoscopy

Diagnostic and therapeutic upper scopes

Radiographic evaluation

Interpreting contrast studies

Esophageal Physiology

Esophageal motility

Impedance studies  
Bravo studies  
Non-acid pH studies  
Assessing oropharyngeal reflux

#### Treatments

Medical and surgical treatments for...

Achalasia  
GERD  
Dysphagia  
Hypertensive LES  
Esophageal spasm

#### Laparoscopic Gastric/Bariatric Surgery

The resident should be familiar with the following aspects of laparoscopic gastric and bariatric surgery, with the recognition that the experience in such procedures will likely, based on current practice patterns, be limited:

- situations and diagnoses where a surgical procedure for weight loss such as Roux en Y gastric bypass procedure, gastric banding procedure, or other gastric restrictive procedure is indicated
- relative benefits of a laparoscopic approach in performing vagotomy or resection
- knowledge of the anatomy of the vagus nerves and stomach recognition of these structures under laparoscopic conditions
- How to perform Roux-en-y gastric bypass for weight loss, gastric restrictive procedures, and gastric banding procedures
- trocar placement and exposure
- mobilization and division of gastric blood supply
- division of branches of vagus
- division of stomach
- anastomotic techniques: stapled, stapled and sewn, sewn
- potential complications, operative and postoperative, especially those peculiar to a laparoscopic approach, and their diagnosis and treatment
- indications, preoperative selection, appropriateness for a laparoscopic approach for selected patients undergoing bariatric surgical procedures, along with the expected operative results and potential complications techniques currently used to perform such procedures and differences from celiotomy approach

#### Patient Evaluation

Patient history and physical  
Psychologic evaluation  
Nutritional evaluation

Medical screening

Decision making to choose right procedure for patient

#### Procedures

Gastric bypass procedure

Gastric banding procedure

Gastric sleeve procedure

Other procedures

#### Techniques

Standard laparoscopic

Open

Single incision surgery

Robotic techniques

#### Postoperative care and management of patients

Management of medical problems

Nutritional follow up

Psychiatric follow up

Support groups

#### Revisional Bariatric Surgery

Weight regain

Fistula

Bowel obstruction

Nausea and vomiting

#### Understanding Complications of bariatric surgery

Recognizing a leak

Persistent nausea and vomiting

Abdominal pain evaluation

Recognizing nutritional deficiencies

#### How to set up a bariatric program

Know components

Understand staff needs

### Laparoscopic Colon/Intestinal Resection

The resident should be familiar with the following and have a working knowledge and, if possible, a practical experience with the following:

- indications for performing a laparoscopic resection or procedure for pathologic conditions of the colon and small intestine
- appropriate indications for surgery based on individual disease or condition
- role of resection, bypass, diversion as treatment options
- appropriate trocar placement based on condition
- techniques of intestinal mobilization and exposure
- knowledge of relevant anatomy, including blood supply, retroperitoneal structures, etc. relevant to performing appropriate surgical intestinal resection
- dissection techniques for bowel
- mesenteric vascular division techniques
- intestinal division techniques
- anastomotic techniques: intracorporeal vs. extracorporeal
- anastomotic techniques: stapled vs. sewn
- relevant concerns using laparoscopy for treatment of malignant conditions
- technique of laparoscopic creation of colostomy/ileostomy
- technique of laparoscopic enteroenterostomy/enterocolostomy using above anastomotic techniques
- indications for surgical treatment of rectal prolapse specific instances where laparoscopic rectopexy is preferred or appropriate treatment technique of laparoscopic rectopexy for rectal prolapse
- potential intraoperative and postoperative complications of laparoscopic intestinal surgery, their recognition and treatment