

## Objectives for Luminal Advanced Endoscopy Fellowship Program

### 1. Medical Expert:

#### a. Cognitive skills

- i. Learn the pathophysiology behind small intestinal diseases and anatomy of the gastrointestinal tract, including surgically altered anatomy.
- ii. Obtain a focused history and physical examination for patients presenting with acute and chronic obscure gastrointestinal bleeding (OGIB), polyposis syndrome, other small intestinal diseases, and advanced gastrointestinal tract polyps.
- iii. Interpret & utilize laboratory tests and radiologic imaging in the management of small bowel diseases and the inherent limitations of each test.
- iv. Understand the indications and contraindications for capsule endoscopy (CE), balloon assisted enteroscopy (BAE), endoscopic mucosal resection (EMR), and endoscopic submucosal dissection (ESD).
- v. Understand the theoretical basis for advanced luminal endoscopic techniques, including CE, BAE, EMR, and ESD.
- vi. Gain proficiency in the medical, endoscopic, and surgical management of OGIB, small bowel diseases, and advanced polyps.
- vii. Learn strengths and limitations of different resection techniques and how to choose between them, including EMR (saline lift, cap assisted, ligation assisted, piecemeal), ESD, and surgery (transanal/TAMIS/segmental resection).

#### b. Technical skills

##### i. CE

1. Learn how to set-up, administer, download, and troubleshoot a capsule study.
2. Learn how to review capsule videos including landmarking, review of SBI (Suspected Blood Indicator)/Quick View/Full View images, and preparation of CE reports.
3. Interpret normal and abnormal images, including angioectasias, ulcers, Crohn's disease, polyps, tumors, strictures, foreign bodies, parasites, and submucosal lesions and how to localize them for BAE.
4. Learn how to interpret difficult studies, such as altered surgical anatomy, abnormal transit times, poor bowel preparation, and active bleeding.

##### ii. BAE

1. Learn the similarities and differences between single balloon enteroscopy (SBE) and double balloon enteroscopy (DBE).
2. Learn how to setup, manipulate, and troubleshoot the enteroscope, overtube, inflatable balloons, and balloon control unit.
3. Learn the basic advancement and reduction maneuvers to pass the enteroscope in the small intestine safely.
4. Learn advanced maneuvers to achieve deeper small bowel intubation.

5. Learn the unique challenges of small bowel interventions compared to general endoscopy, including biopsy, injection, electrocoagulation, polypectomy, and balloon dilation, and how to surmount them.
6. Learn how to perform BAE in surgically altered anatomy, such as Whipple's pancreaticoduodenectomy and roux-en-Y gastric bypass.

iii. EMR

1. Learn how to perform the three types of EMR, including saline lift, cap assisted, and ligation assisted (Duette™) techniques in the esophagus, stomach, small bowel, colon, and rectum.
2. Learn how to control EMR bleeding with snare tip electrocoagulation, bipolar electrocoagulation, and hemostatic clips.
3. Learn how to prevent and treat EMR perforations with clips and/or over-the-scope-clips.
4. Learn how to deal with submucosal scaring during EMR.

iv. ESD

1. \*\*\*Due to the steep learning curve and high risk nature of the procedure, ESD training will begin in the porcine lab at CSTAR subject to availability of external funding. Transition to humans will only occur when Dr. Sey is satisfied with competency in the basic skills of ESD.\*\*\*
2. Learn how to perform ESD, including injection, marking, incision, and dissection in the esophagus, stomach, colon, and rectum.
3. Learn how to prevent and treat ESD bleeding with knife spray coagulation and coagulation forceps.
4. Learn how to prevent and treat ESD perforations with clips and/or over-the-scope-clips.
5. Learn how to deal with submucosal scaring during ESD.
6. Learn how to perform hybrid ESD.

**2. Communicator**

- a. Communicate effectively with patients, physicians, GI fellows, residents, medical students, nurses, and administrators in a clinic, endoscopy, and office setting.
- b. Obtain informed consent from patients taking into account the unique risks of advanced luminal endoscopy procedures.
- c. Generate timely and accurate notes detailing the history, exam, investigations, procedure, findings, and management plan to all involved parties (ie. referring doctor, family doctor, etc...).
- d. Obtain informed research consent from patients for any studies the fellow collaborates with.

### **3. Collaborator**

- a. Work effectively with patients, referring doctor, GI fellows, residents, medical students, anesthesiologists, anesthesia assistant, nurses, and administrator in a clinic, endoscopy, and office settings.
- b. Effective liaison with radiologists and surgeons regarding patients with complex small intestinal diseases and advanced polyps.
- c. Participate on Polyp Adjudication Committee as trainee member.

### **4. Manager**

- a. Learn to make cost/benefit decisions in the investigation of small bowel diseases as it relates to CE, CT abdomen, CT enterography, MR enterography, small bowel follow through, and Meckel's scan.
- b. Learn to triage patients for small bowel endoscopy and advanced endoscopic resections in a setting of limited resources for advanced endoscopic procedures.

### **5. Health Advocate**

- a. Understand the impact of limited luminal advanced endoscopic resources on the health of the community.
- b. Educate other physicians, GI fellows, trainees, and nurses on novel luminal advanced endoscopic techniques that may benefit their patients.

### **6. Scholar**

- a. Research is a major component and strength of this fellowship geared towards those interested in an academic career. As such, fellows are expected to participate in at least 2 research projects during the course of the year long program and have 2 manuscripts submitted or ready to be submitted for publication. The fellow will meet with Drs. Sey and Yan near the beginning of the year to find suitable projects given the limited time frame.
- b. Those interested in obtaining a Master's degree in Clinical Epidemiology, Public Health, or a certificate program in research methods will be given an opportunity to do so (separate application and funding required). To offset the extra course work, these fellows will only be required to participate in 1 study during the course of the year with a manuscript of sufficient quality for publication by the end of the training period.
- c. Those interested in teaching or administration will also be given an opportunity to complete a Master of Education, Health Administration, or Business Administration. To offset the extra course work, these fellows will only be required to participate in 1 study during the course of the year with a manuscript of sufficient quality for publication by the end of the training period.
- d. Regular attendance at GI Divisional Rounds and present once.
- e. Present at one GI Division journal club on a seminal endoscopy paper.

### **7. Professional**

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- a. Treat patients, physicians, trainees, nurses, administrators, and all persons in the clinic, endoscopy unit, and office with respect.
- b. Attend clinic and endoscopy prepared and on time.
- c. Take responsibility for individual adult based learning.
- d. Obey ethical principles when dealing with patients, health care providers, administrative staff, and the general public.