Objectives for Advanced Endoscopy Fellowship: Endoscopic Retrograde Cholangiopancreatography (ERCP)

Educational Objectives:

1. Medical Expert:

i. Peri-procedure management – cognitive skills:
   a. Understand anatomy pertaining to ERCP with focus paid to the anatomy and physiology of the pancreas and biliary tree, including common congenital variants.
   b. Comprehend indications, contraindications, complications (pertaining to the procedure and sedation) and their management for ERCP
   c. Able to obtain a proper history, physical exam and integrate laboratory evaluations of patients with pancreaticobiliary disease including previous radiological imaging.
   d. Special consideration must be given to choose the proper and safe method to sedate patients for ERCP.
   e. Trainee should be competent in determining the need for anesthesiologist and/or endotracheal intubation in the appropriate clinical scenario vs. using conscious sedation.
   f. Use ERCP appropriately in patients with abnormal liver enzymes, abdominal pain, jaundice, pancreatitis, primary sclerosing cholangitis, liver transplantation and biliary surgery complications
   g. Assess patients for consideration of ERCP and in follow up in the setting of a longitudinal clinic, and in-patient service.

ii. Technical abilities:
   a. Passage of a duodenoscope and evaluation of the upper-GI tract including:
      i. Esophageal intubation
      ii. Traversing the stomach
      iii. Pyloric intubation
      iv. Positioning of the duodenoscope in the second portion of the duodenum for cannulation
      v. Navigating surgically altered GI anatomy.

   b. Selective cannulation of the bile and pancreatic ducts:
      i. Familiarize with various ERCP devices for standard and difficult cannulation and develop competence at handling each accessory first as the assistant and then as the endoscopist.
      ii. Identify the normal and abnormal papilla in normal and complicated anatomical situations.
      iii. Understand options for handling failure to cannulate the desired duct and be able to make recommendations on the best alternative option for the patient.

iv. Obtain and interpret real-time cholangio-pancreatograms and capture images understanding various maneuvers to optimize the fluoroscopic image.
v. Become proficient in the cannulation of the native papilla using ERCP with a rate > 90%.

c. Simulator:
i. Hands on simulator may complement but not substitute for supervised real cases.
ii. Participate in use of mechanical simulator if available.

iii. Therapeutic Techniques:

a. Sphincterotomy:
i. Understanding the principles of electrocautery and the differences in performing sphincterotomy with the various electrosurgical current generators.
ii. List the indications for biliary and pancreatic sphincterotomy
iii. Perform a safe and complete biliary sphincterotomy
iv. Perform access sphincterotomy (pre-cut), understanding its indications, risks and potential benefits in the appropriate clinical scenarios.
v. Perform pancreatic sphincterotomy
vi. Perform minor papilla sphincterotomy
vii. Perform hemostasis techniques for post-sphincterotomy bleeding

b. Dilation:
i. Use balloon dilation appropriately in the management of biliary and pancreatic strictures and basic techniques in performing either catheter or balloon dilation.

c. Stent placement:
i. Understand the importance of providing adequate drainage of contrast injection in cases of obstruction,
ii. Understand indications for placement of different types of available stents and their proper selection and deployment.
iii. Ability to understand proper indications and placement a nasobiliary drain
iv. Placement of small caliber pancreatic stents

d. Tissue Sampling:
i. Sample pancreaticobiliary strictures with fluoroscopic guidance, understanding when to use the appropriate techniques available (i.e. brush cytology, biopsy, stent cytology as well as pancreaticobiliary fluids aspiration for cytology).

e. Stone extraction techniques:
i. Remove CBD stones using balloon and basket extraction
ii. Manage large CBD stones with stent placement and mechanical lithotripsy

iii. Understand the role of cholangioscopy for electrohydraulic lithotripsy, percutaneous biliary drain placement and surgical referral when ERCP has failed
iv. Remove pancreatic duct stones

f. Gain exposure to transluminal pseudocyst drainage and endoscopic ampullectomy

iv. Radiation Safety:
a. Understand the principles of radiation safety and how it pertains to the health of the patient, physician, assistant(s) and auxiliary medical staff involved in the care of the patient.
b. Practice the ALARA (as low as reasonably achievable) principles with respect to radiation dose.
c. Trainee should understand and adhere to the proper procedures for personal shielding and monitoring.
d. Partake in courses in radiation protection

2. <u>Communicator:</u>

i. Communicate with nursing staff, house staff, and auxiliary staff involved in the care of ERCP patients.

ii. Obtain informed consent from patients or alternative decision makers for ERCP.

iii. Generate ERCP report promptly following the ERCP procedure. This includes communication of appropriate information for various indications of ERCP, taking into account areas of wording and recording certain areas of uncertainty for referring physicians. Documenting includes the indication of the procedure, sedation, the procedure itself, findings, complications, clinical impressions and plan of action for the patient. When possible, foster standardization of reporting and data collection throughout the endoscopic community.

iv. Communicating with referring physician, in appropriate situations, directly via telephone conversation or e-mail when pertinent expeditious information regarding the care of ERCP patients is needed.

v. Communicate with patients and, when appropriate, their care providers and/or family members about the results, plan and follow-up care using effective nonverbal, explanatory, questioning, and writing techniques of patients needing ERCP.

3. Collaborator:

i. Work effectively and develop effective working relationships with endoscopy room staff (i.e. Anesthesiologist, Anesthesia Technicians, Surgeons, imaging and interventional Radiologist, Radiology Technologist, RN's, Residents, Medical Students, para-medical staff etc.) to perform procedures while recognizing their training, abilities and limitations.

ii. Consult other services appropriately (i.e. EUS, Surgery, Medical Oncology, Radiation Oncology, Pathology, Cytopathology, Palliative Care, and Pain Control Services) when and if indicated. Provide EUS/ERCP in-patient consult service.

iii. Participate in General Gastroenterology after hours consult service on week-days and week-ends.

4. Manager:

i. Understand the relative cost and benefits for different choices of diagnostic and therapeutic procedures and when to use them appropriately.

ii. Learn to triage patients effectively for various indications of ERCP for administrative and nursing staff. Create appropriate timelines for access to the procedure. Give any special instructions (anticoagulation, antibiotics, anti-platelet agents etc.), as well as the type and order of instruments that will be required for the procedure to administrative and RN staff.

iii. Utilize endoscopy booking in a cost-efficient manner while maintaining high standards of care including excellent patient comfort, high percentage procedure completion, appropriate and successful diagnostic/therapeutic maneuvers and acceptable complication rates with patient safety as number one priority.

iv. Be exposed to a hospital administrative committee responsible for the development and maintenance of equipment, facilities and standards of care.

v. Complete all workups and follow-up care plan for all ERCP patients before discharge from the endoscopy facility.

vi. Keep logs of all ERCP procedures performed including indication, type of procedure, type of instruments used.

5. Health Advocate:

i. Understand the implications of ERCP to patients who do or do not have ready access to this procedure.

ii. Understand the impact ERCP has made for accurate gastrointestinal illness diagnosis, avoidance of other more invasive diagnostic/therapeutic procedures, implementation of new medical treatments and reduction in gastrointestinal surgery.

iii. Promote and educate the use of ERCP procedures to other medical colleagues, RNs, and the general public to improve access for patients and to reduce costs, morbidity and mortality associated with other less appropriate means of diagnosis and treatment.

6. Scholar:

i. Stay abreast of current literature and techniques as it relates to ERCP.

ii. Develop research protocol in ERCP, obtain ethics approval, apply for grant funding when necessary and complete the project with presentation at a national or international meeting as well as manuscript submission for publication.

iii. Attend all teaching functions pertinent to ERCP (Research Conferences, Journal Club, Fellowship Seminars, Cytopathology and Radiology etc.)

7. Professional:

i. Develop professional attributes (wear professional attire) and manners (respect, compassion, and integrity) with respect to interacting with patients, nurses, and colleagues. Be punctual and arrive in the ERCP room well-read about the patient's disease, planned strategy and the expected outcome of the procedure.

ii. Respond to the needs of patients and society and demonstrate accountability to patients, society, and the profession of medicine.

iii. Demonstrate commitment to excellence and on-going professional development.

iv. Demonstrate commitment to ethical principles pertaining to the provision of or withholding of clinical care and maintaining confidentiality of patient information.

v. Respond sensitively to patients in a non-discriminatory manner.

vi. Maintain ethical interaction with members of the ERCP equipment and related supply industry

Bibliography:

1) ERCP core curriculum prepared by the ASGE Training Committee Gastrointest Endosc 2006; 63(3): 361-376

Recommended reference text:

1) Cotton PB, Leung JWC. Advance Endoscopy: ERCP. Malden (Mass): Blackwell Scientific Publications 2005 available www.amazon.ca – latest edition

Reference Videotapes:

The following videotapes are available as part of the ASGE Endoscopic Learning Library. A portion of each videotape may be viewed online, and purchase information is available at www.asge.org/library or by calling ASGE at 1-866-353-ASGE (2743)

i. Car-Lock DL. An Introduction to Therapeutic ERCP [48.37]
ii. Noar M, Soehendra N, Grimm H et al. Endoscopic Therapy of Biliary and Pancreatic disorders [34:00]
iii. Monroe P. Pre-Cut Sphincterotomy [16:38]
iv. Greenen J, Baillie J. Endoscopic Sphincterotomy, Stone Extraction, and Biliary Stent Placement [40:00]
v. Tarnasky PR, Cotton PB, Hawes RH. Diagnostic ERCP [23:50]
vi. Vennes J, Silves S. Anatomic Anomalies, Variants and Curiosities in ERCP Interpretation [38:39]
vii. Carr-Locke DL. The Difficult Common Bile Duct Stone
viii. Baillie J, Branch M, Jowell P, et al. Wallsent Placement: Techniques and Problems [10:46]
ix. Howell D, Qaseem T. Successful ERCP in Billroth II Patients [10:48]

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