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ROTATION: VETERANS AFFAIRS GENERAL SURGERY ROTATION

PROGRAM SITE DIRECTOR: Mark Sawicki, M.D.

SITES: West LA Veterans Administration Hospital

GOALS: To provide trainees an opportunity to participate in the perioperative and operative aspects of gastrointestinal surgery.

LEVEL OF TRAINEE: R5

ASSESSMENT:

Monitoring of the accomplishment of the stated objectives will be performed using the following methods:

1. Global Rating: end of rotation evaluation of resident performance to assess the resident’s demonstration of Core Competencies with respect to the stated objectives by faculty, other team resident members, students, and nursing staff.
2. Case Logs: auditing of operative cases pertinent to the specialty in the Surgical Operative Log.
3. Written Examination: performance on the annual ABSITE examination, Cardiovascular and Respiratory systems section.
4. Patient Survey: performance will be assessed by patient surveys administered though the rotation.

DESCRIPTION OF THE ROTATION:

1. All rotating will be part of the GI Surgery team and responsible for the care of the general surgery patients.
2. The surgery residents will provide in-patient care including routine admissions and critical care of patients.
4. Residents will further participate in surgical operations needed on these patients under direct supervision by the surgical faculty.
5. The rotating residents will participate in all Department of Surgery educational conferences and didactic presentations.
6. Residents are expected to actively participate and present at the weekly Surgery Conference.
COMPETENCY BASED LEARNING OBJECTIVES

Patient Care:

1. Perform a complete and thorough history and physical examination, with emphasis in elements unique to GI surgery patients.
2. Initiate the laboratory evaluation and any other initial diagnostic studies with an understanding of the tests to be ordered.
3. Make informed decisions about diagnostic and therapeutic interventions on general surgery patients with the guidance of senior residents and faculty.
4. Be proficient in the preoperative preparation of the patients for general surgery and routine postoperative care.
5. Understand basic pathophysiology of gastrointestinal disease and begin to master the skills necessary to care for the ICU patient under the guidance of the senior residents and faculty members.
6. Understand the basic indications for common radiological and interventional studies used in the care of general surgery patients such as plain films, CT scans, and contrast studies.
7. Demonstrate the ability to effectively set priorities and coordinate the care of general surgery patients.

Medical Knowledge:

ABDOMINAL SURGERY

1. Describe the embryological development of the peritoneal cavity and the positioning of the abdominal viscera.
2. Diagram the anatomy of the abdomen including its viscera and anatomic spaces:
   a. Musculoskeletal envelope
   b. Lesser sac
   c. Subphrenic spaces
   d. Morrison's pouch
   e. Foramen of Winslow
   f. Pouch of Douglas
   g. True pelvis
   h. Lateral gutters
   i. Contents of the retroperitoneum
   j. Major lymph node groups and their drainage
3. Surgical outcome is dependent on coexistent disease. Describe changes in the following organ systems that result from the aging process:
   a. Heart
   b. Brain
   c. Lung
   d. Hematopoietic system
   e. Kidney
   f. Gastrointestinal tract
4. Explain absorption and secretory functions of the peritoneal surfaces and the diaphragm.

5. Describe the anatomy of the omentum and its role in responding to inflammatory processes.

6. Assess the following signs associated with the acute abdomen and describe their pathophysiology:
   a. Referred pain
   b. Rebound tenderness
   c. Guarding
   d. Rigidity

7. Specify characteristics of the history, physical examination findings, and mechanism of visceral and somatic pain for the following processes:
   a. Acute appendicitis
   b. Bowel obstruction
   c. Perforated ulcer
   d. Ureteral colic
   e. Diffuse peritonitis
   f. Biliary colic

8. List possible distinctions in the presentation and examination of the elderly patient with the following causes of acute abdomen:
   a. Perforated viscus
   b. Cholecystitis

9. Discuss the differences in the physiologic response to stress in the geriatric patient.

10. Explain the mechanism of referred pain in:
    a. Ruptured spleen
    b. Renal colic
    c. Biliary colic
    d. Pancreatitis
    e. Basilar pneumonia
    f. Inguinal hernia

11. Discuss the following causes of paralytic ileus:
    a. Postoperative electrolyte imbalance
    b. Retroperitoneal pathology
    c. Trauma
    d. Extraperitoneal disease (central nervous system, lung)

12. Illustrate use of the following diagnostic studies in the work-up of each process in #7 and #10 above:
    a. Laboratory evaluation
    b. Urinalysis
    c. Plain x-rays
    d. Contrast gastrointestinal (GI) studies
    e. Ultrasound
    f. Computed axial tomography (CAT)
    g. Biliary studies
    h. Renal studies

13. When considering the possibility of wound complications:
    a. What are the risk factors for abdominal wound infection?
    b. What are the contributing factors for abdominal wound dehiscence and evisceration?
d. What are the usual clinical presentations and timing?
e. What is the incidence of wound infection in surgeries involving the biliary tree, upper GI tract, and colon?
g. List wound complications that are more problematic in the elderly patient.

14. Identify the anatomic locations for the following intra-abdominal abscesses; name disease process(es) associated with each:
   a. Left subphrenic space
   b. Right subphrenic space
   c. Subhepatic space
   d. Lesser sac
   e. Interloop
   f. Pelvis
   g. Left paracolic gutter
   h. Right paracolic gutter
   i. Psoas muscle

15. Differentiate between the conditions favoring Percutaneous drainage versus operative drainage for each of the abscesses in #14. Describe the safest and most effective approach using each technique.

16. Differentiate between the following intestinal fistulas and the organs to which they most often communicate:
   a. Esophageal
   b. Gastric
   c. Enteric (including duodenal)
   d. Colonic

17. Explain the formation of fistulas in each of the following disease processes or factors:
   a. Operative complications (bowel injury with abscess formation)
   b. Inflammatory bowel disease
   c. Acute pancreatitis
   d. Foreign body or prosthetic material
   e. Malignancy

18. Explain the role of a fistulogram in the diagnosis of intra-abdominal fistulas and abscesses.

19. List the factors that prevent healing of a fistula.

20. Summarize the conditions favoring operative versus non-operative treatment for fistulas listed in #16.

21. Describe the anatomy, clinical presentation, and complications of non-operative management for these hernias:
   a. Direct and indirect inguinal, femoral, and obturator
   b. Sliding hiatal
   c. Paraesophageal
   d. Ventral
   e. Umbilical
   f. Spigelian
   g. Paraduodenal
h. Richter’s
i. Lumbar and Petit
j. Parastomal
k. Diaphragmatic
   I. Posterolateral (Bochdalek)
   II. Anterior (Morgagni)
   III. Traumatic
   I. Internal

22. Name the hernia types that are most common in elderly patients, and explain how they may become problematic.
23. Define a Richter’s hernia and describe its clinical presentation.
24. Define a sliding hernia and describe its repair.
25. Differentiate between incarceration and strangulation.
26. Outline the uses of prosthetic material and management of infection for incisional or recurrent hernias involving prosthetic material.
27. Explain the operative approaches for each of the following, including laparoscopic:
   a. Abdominal cavity: liver/ biliary tract, spleen, small bowel, large bowel, and pelvis
   b. Retroperitoneal organs: kidneys, pancreas, adrenal glands, abdominal aorta
   c. Thoracoabdominal aorta
   d. Pericardial sac

28. Outline the techniques for wound closure (including type of suture material) for each of the incisions named in #6 immediately above.
29. Describe the use and method of placement of retention sutures.
30. Explain the rationale for and mechanics of techniques of peritoneal dialysis in:
   a. Renal failure
   b. Management of peritoneal infections or pancreatitis

31. Assess the treatment of secondary peritoneal infections due to peritoneal dialysis catheters.
32. Describe the pathophysiology and treatment of ascites in:
   a. Malignancy
   b. Hepatic disease: cirrhosis, Budd Chiari Syndrome
   c. Chylous leak
   d. Pancreatic leak
   e. Cardiac disease
   f. Renal disease
   g. Bile leak

33. Explain the indications for use and complications of peritoneo- venous shunts.
34. Describe the etiology, manifestations, and treatment of:
   a. Desmoid tumors
   b. Rectus sheath hematoma
   c. Retroperitoneal fibrosis
ALIMENTARY TRACT

1. Review the anatomy, embryology, and biochemistry of the gastrointestinal (GI) tract with emphasis on systemic blood supply, portal venous drainage, neural-endocrine axis, and lymphatic drainage.

2. Discuss the abdominal anatomy, explaining its relationship to lower thorax, retroperitoneum, and pelvic floor.

3. Review the physiology of the GI tract with attention to the following aspects:
   a. Mucosal transport, including mechanism of absorption of nutrients and water
   b. Sites of electrolyte and acid-base regulation
   c. Physiology of deglutition and phases of digestion
   d. Neuroendocrine control of GI secretion and motility
   e. Regional controls of mucosal secretion and absorption (neural and hormonal)
   f. Enterohepatic circulation
   g. Neuromuscular control of defecation
   h. Digestion of sugars, fats, proteins, vitamins, and cofactors
   i. Rates of mucosal turnover
   j. Normal secretory rates for the stomach, small bowel, biliary tree, and pancreas
   k. Normal bacterial flora and their concentrations in the upper and lower GI tract
   l. Immunologic properties of the GI tract and how this barrier is affected by: trauma, sepsis, burns, malnutrition, and chronic disease

4. Review the nutritional needs of surgical patients

5. Discuss the principles of intestinal healing
   a. Normal GI tissue integrity and strength and how this relates to healing of anastomoses
   b. Effects of suturing and stapling techniques of the gut

6. Review the various embryologic abnormalities of the GI tract, including:
   a. Strictures
   b. Stenoses
   c. Webs
   d. Atresias
   e. Duplications
   f. Malrotations

7. Review the common causes of the following conditions:
   a. Ulceration of the proximal and distal GI tract
   b. Causes of GI obstruction
   c. Causes of paralytic ileus
   d. Causes of GI hemorrhage
   e. Causes of GI perforation
   f. Causes of abdominal abscess formation or secondary peritonitis
   g. Short gut and malabsorptive conditions
   h. Acute and chronic mesenteric ischemia
   i. Portal hypertension and venous thrombosis
   j. Inflammatory bowel diseases
   k. An acute abdomen
   l. Ischemic bowel
8. Discuss diseases of the esophagus to include:
   a. Motility disorders
   b. Inflammatory disease
   c. Esophageal injuries
   d. Gastroesophageal reflux
   e. Diverticular disease
   f. Tumors (benign and malignant)

9. Outline the essential characteristics specialized diagnostic evaluation of the alimentary tract, including:
   a. Barium swallow
   b. Upper GI Series with small bowel follow-through
   c. Enteroclysis
   d. Ultrasound
   e. Transesophageal echo
   f. Computerized Tomography
   g. Magnetic Resonance Imaging
   h. Barium enema
   i. Angiograms
   j. Nuclear scans for bleeding or to evaluate for Meckel's diverticulum
   k. Fiberoptic endoscopy (upper and lower)
   l. Endoscopic ultrasonography
   m. Rigid anoscopy and sigmoidoscopy
   n. Tests of GI function including:
      p. Manometry
      q. pH measurement
      r. Gastric analysis (basal and stimulated)
      s. Radioisotope clearance studies
      t. Technetium 99m
      u. Technetium HIDA (hepatic 2,6-dimethyliminodiacetic acid) dynamic biliary imaging
      v. Gastric emptying studies
      x. Transit times
      y. Hormonal determinations
      z. Absorption

10. Summarize current medical management and its potential limitations; explain the role of surgical intervention when management fails in the following:
    a. Gastroesophageal reflux
    b. Peptic ulcer disease
    c. Gastroparesis
    d. Esophageal varices
    e. Inflammatory bowel disease
    f. Upper and lower GI bleeding
    g. Diverticulitis
LIVER, BILIARY TRACT AND PANCREAS

Demonstrate knowledge of the anatomy, physiology, and pathophysiology of the liver, biliary tract, and pancreas.

Demonstrate the ability to manage disease and injury of the liver, biliary tract, and pancreas amenable to surgical intervention.

1. Outline the work-up and differential diagnosis of the jaundiced patient.
2. Discuss the principal characteristics of and the treatment for the following:
   a. Gallstone pancreatitis
   b. Alcoholic pancreatitis
   c. Acute cholecystitis
   d. Symptomatic gallstones
   e. Acalculous cholecystitis
   f. Cholangitis
   g. Gallstone ileus
   h. Biliary dyskinesia
3. Explain the pathophysiology of pancreatitis to include common etiologies.
4. Discuss the diagnosis, evaluation, and management of acute pancreatitis including the role of peritoneal lavage, exploration, and complications such as adult respiratory distress syndrome, hypovolemia, abscess, sterile pancreatic necrosis and infected pancreatic necrosis.
5. Discuss presentation, evaluation, and management of pancreatic pseudocysts with attention to:
   a. Complications of pseudocysts (hemorrhage, infection, rupture)
   b. Timing of drainage
   c. Percutaneous versus surgical drainage
   d. Indications for external versus internal drainage
   e. Choice of internal drainage procedure
6. Explain the diagnosis and management of pancreatic ascites.
7. Analyze alternatives to surgery in the management of gallstones, such as:
   a. Oral dissolution with ursodeoxycholic acid
   b. Extracorporeal shock wave lithotripsy
   c. Endoscopic sphincterotomy
8. Compare laparoscopic versus open cholecystectomy.
9. Analyze the potential significance of finding a filling defect on ultrasonography or liver scan in an elderly patient. Discuss the following issues:
   a. Frequency of metastatic cancer vs. primary tumors in liver
   b. Correlation between incidence of gastrointestinal malignancy and increasing age
10. Assess management alternatives for common bile duct stones including open versus laparoscopic common bile duct exploration and ERCP.
11. Discuss the principal characteristics of and the treatment for the following:
    a) Metastatic lesions to the liver
    b) Primary malignancies of liver and biliary tree
    c) Benign tumors of the liver
d) Choledochal cyst
e) Caroli’s disease
f) Benign biliary strictures
12. Describe the anatomy of the pancreas, including regional vascular anatomy.
13. Discuss the physiology of the pancreas, including endocrine and exocrine function and hormonal regulation.
14. Discuss the evaluation and management of carcinoma of the pancreas to include diagnostic evaluation using:
   a. Computed axial tomography
   b. Ultrasound
   c. ERCP
d. Percutaneous transhepatic cholangiography (PTC)
e. Arteriography
f. Laparoscopy/laparotomy
g. Operative versus nonoperative biliary drainage
h. Percutaneous versus endoscopic stenting
i. Resection
j. Concomitant gastrojejunostomy with operative biliary bypass
15. Discuss diagnosis, evaluation, and surgical management of cystic neoplasms of the pancreas (mucinous and serous cystadenomas; cystadenocarcinoma).
16. Describe the etiology, pathophysiology, and management of chronic pancreatitis to include:
   a. Indications for operative management
   b. Selection of appropriate operative procedure
c. Longitudinal pancreaticojejunostomy (Puestow- Gillesby Procedure)
d. Caudal pancreaticojejunostomy (Duval Procedure)
e. Subtotal pancreatectomy
f. Pancreatoduodenectomy
g. Role of celiac ganglion ablation (chemical splanchnicectomy) in pain control
17. Summarize the common sequelae of chronic pancreatitis to include pain, fat malabsorption, and diabetes.
18. Describe the diagnosis, evaluation, and surgical management of the following islet cell tumors of the pancreas:
   a. Gastrinoma (Zollinger- Ellison Syndrome)
   b. Glucagonoma
c. Somatostatinoma
d. Insulinoma
e. VIPoma (Verner- Morrison Syndrome, WDHA Syndrome)
19. Describe the diagnosis and management of pancreas divisum.
20. Detail the appropriate surgical management of any selected disorder of the liver or biliary tract.
22. Analyze the technical details of each surgical procedure and options that may be available with pros and cons of each.
23. Summarize the common complications associated with surgical management of liver and biliary tract disease.
24. Summarize the principles of perioperative management of liver and biliary tract disease.
25. Describe the common complications associated with surgical management of diseases of the pancreas.
26. Summarize the principles of perioperative management of diseases of the pancreas.

**MINIMAL ACCESS SURGERY**

Demonstrate an understanding of the applications and risks of minimal access surgery (MAS).

Demonstrate an understanding of the technical and physiologic principles of minimal access surgical techniques.

Develop specific technical skills and demonstrate proficiency in performance of basic laparoscopy, laparoscopic cholecystectomy, and other minimal access procedures.

1. Differentiate between conventional open and scope-assisted surgery, including:
   a. Anesthetic considerations
   b. Effects of pneumoperitoneum
   c. Cardiovascular stability
   d. Need for team participation
   e. Differences in patient outcome
2. Discuss the physical limitations imposed on the user participating in minimal access surgery, including:
   a. Surgeon fatigue and diminished proficiency over time
   b. Two-dimensional perspective
   c. Visual limitations of scope and monitoring equipment
   d. Crucial importance of patient position and cannula position for optimum exposure
3. Understand strategies to offset the difficulties suggested in #2 above, including:
   a. Proper alignment of eye-camera-instrument axes
   b. Efficient biomechanics
   c. Effective use of assistants
   d. Appropriate use of other advanced technologies such as endoscopic ultrasound
4. Analyze the factors affecting the decision to select a minimal access approach (as opposed to an open surgical approach) for a particular clinical problem.
5. Explain the concept of the learning curve, and discuss the need for quality control in the education and evaluation of surgical housestaff in developing proficiency in minimal access surgery.
6. Explain the mechanics and principles for safe and effective use of the following equipment/procedures:
   a. Cautery (monopolar and bipolar)
   b. Ultrasonic shears
   c. Laser
   d. Telescopic direction (straight and angled laparoscope)
   e. Insulation technique and hazards
f. Maintaining visualization of operative field
g. Dissecting and knot tying
7. Discuss appropriate anesthetic management for minimal access (MA) techniques for surgery involving the abdomen and thorax.
8. Discuss techniques for gaining access to the abdomen, including Veress needle, open (Hassan cannula), direct visualization trocars.
9. Describe the sequence of steps involved in establishing a pneumoperitoneum, including:
   a. Selection of first puncture site
   b. Initial entry via Veress needle or Hassan cannula
   c. Tests to confirm entry into peritoneum
   d. Initial insufflation
   e. Initial exploration of abdomen
   f. Placement of additional trocars
10. Discuss indications for and limitations of diagnostic laparoscopy, as well as pros and cons of this diagnostic technique compared with other diagnostic modalities such as CT scan or ultrasound.
11. Discuss recognition and management of complications, including major vascular injury, massive carbon dioxide embolus, or visceral injury.
12. List contraindications for laparoscopic surgery, and be able to explain why these conditions are considered relative or absolute contraindications.
13. Discuss the indications and contraindications for laparoscopic cholecystectomy.
14. Describe the technical aspects of preparing for and operating on a patient undergoing LC.
15. Identify major considerations for the decisions involved in converting from laparoscopic to open cholecystectomy, including:
   a. Difficulty identifying anatomy (i.e., common duct)
   b. Poor visibility
   c. Hemorrhage control
16. Select management options for handling bile duct injuries, including immediate and delayed diagnosis and treatment.
17. Specify the indications and technique for Percutaneous cholangiography, endoscopic ultrasound, and common bile duct exploration (CBDE), including use of choledochoscopy.
18. Discuss management of the patient with common duct stones, including:
   a. Choice of approach (open common duct exploration, versus laparoscopic CBDE, versus LC followed by/ preceded by endoscopic stone extraction)
   b. Timing of surgery
   c. Safety and cost-effectiveness of each approach

Practice Based Learning:
Rotational Educational Policy

Goals and Objectives

1. Develop a personal program of self-study and professional growth with guidance from the teaching staff and senior residents. An understanding of the etiology, pathogenesis, pathophysiology, diagnosis and management of gastrointestinal disorders will allow for sound surgical judgment, which relies on knowledge, rational thinking and the surgical literature.

2. Utilize current literature resources to obtain up-to-date information in the GI patients and practice evidence-based medicine.

3. Participate in teaching and organization of the educational weekly Multidisciplinary Surgery Conference.

4. Participate in activities of the Department of Surgery (including all teaching conferences) and assume responsibility for teaching and supervision of subordinate surgical house staff, and medical students.

5. Participate in the Department Morbidity & Mortality conference and utilize information to further improve patient care.

6. Participate in daily teaching rounds and be able to present patients in an organized and complete fashion

Professionalism:

1. Practice compassionate patient care maintaining the highest moral and ethical values with a professional attitude.

2. Demonstrate understanding of the needs and feelings of others, including the patient's family members, allied health care personnel (nurses, clerical staff, etc.), fellow residents, and medical students.

3. Communicate and collaborate effectively in a team of health care providers

4. Demonstrate respect, compassion and integrity in the care of GI surgery patients on a daily basis

5. Demonstrate mature and educated approach to Ethical issues commonly encountered in a cardiac surgery setting.

6. Show sensitivity to patients culture, age, gender and disabilities

7. Recognize and appropriately handle sensitive cases of abuse

8. Be self-aware and have knowledge of professional limits by practicing on-going medical education and self-improvement.

9. Be accountable to profession in their actions and decisions

Interpersonal Relationships And Communication:

1. Create and sustain a therapeutic and ethically sound relationship with patients and patient families

2. Work effectively with other members of the medical team including allied health care personnel (nurses, clerical staff, etc.), fellow residents, and medical students.

3. Maintain professional interactions with other health care providers and hospital staff

Systems Based Practice:
UCLA General Surgery Residency Program
Rotation Educational Policy
Goals and Objectives

1. Understand how the health care organization affects surgical practice of GI surgery
2. Demonstrate cost effective health care
3. Be able to coordinate multi-specialty and multidisciplinary GI surgery practice including discharge planning, social service, rehabilitation, and long term care
4. Follow established practices, procedures, and policies of the Department of Surgery and integrated and affiliated hospitals.
5. Maintain complete of medical records operative notes staff sheets and notes, patient database cards and other patient care related documentation in a timely, accurate and succinct manner.

REFERENCES:

TYPICAL WEEK: