SURGICAL MEDICINE ROTATION LEARNING OBJECTIVES

The following pages outline the learning objectives for this clinical experience. They are designed to guide students in their clinical activities and supplemental reading. It is not the Program’s intention that students will be exposed to this complete list of objectives during the clinical experience. This section is designed to assist students in their preparation for the surgical medicine end-of-rotation exam.

LEARNING OBJECTIVES FOR MEDICAL KNOWLEDGE

For the following listed diseases/disorders/symptoms, upon completion of this clinical experience, the student will be expected to

- Understand the etiology, epidemiology, risk factors and pathophysiology (if appropriate)
- Recognize the clinical manifestations through the appropriate history and physical exam
- Develop a differential diagnosis
- Order and interpret the results of the appropriate diagnostics (including laboratory, diagnostic and radiological studies/findings)
- Understand the surgical and nonsurgical management
- Describe the prognosis, complications and prevention
- Provide appropriate patient education

Skin
Lipoma

Thyroid
Thyroid cancer
Identify and recognize the most common type of thyroid malignant tumor

Breast
Breast mass (palpable, non palpable, benign, malignant)

Lung
Lung mass/cancer

Gastrointestinal
appendicitis
perforated hollow viscus
diverticulitis
abdominal aortic aneurysm
intestinal obstruction
esophageal reflux & varices
femoral hernia
incarcerated & strangulated hernia
ischemic bowel
perforated gastric, duodenal, peptic ulcers
ileus
peritonitis

cholecystitis/cholelithiasis
biliary colic
acute pancreatitis
nephrolithiasis
inflammatory bowel disease
inguinal hernia
incisional hernia
intussusception
hemorrhoids
colonic polyps
Meckel’s diverticulum

volvulus

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Genitourinary and Prostate
Prostate cancer
Scrotal masses (hydrocele, variccele, testicular cancer)
Identify and discern the indications for a urostomy

Vascula
Deep vein thrombosis (DVT)
Acute arterial occlusion
Abdominal aortic aneurysm.
Peripheral arterial insufficiency
Gangrene

Pre-operative Care
1. Appropriately screen and evaluate a patient for preoperative risk factors and recommend preventive measures where appropriate.

2. Perform an appropriate preoperative evaluation, including a diagnostic workup for the following types of patients:
   a. Healthy adult
   b. Pediatric
   c. Geriatric
   d. Pregnant woman
   e. Patients with the following pre-existing conditions/diseases:
      • Cardiac (MI, CHF, Angina, Valvular dx)
      • HTN
      • Respiratory (Asthma, COPD, URI)
      • Renal (ARI, CKD, ESRF)
      • Liver (Hepatitis, Cirrhosis)
      • Endocrine (Diabetes, Thyroid disease)
      • Hematologic (Anemia, bleeding and clotting disorders)
      • Immunocompromised (HIV, AIDS, chemotherapy, etc.)

3. Based on the nutritional status, age and body weight of the surgical patient
   a. Discuss the potential risks and complications which may arise
   b. Recommend and/or initiate management of these risks

4. Identify the parameters used to determine whether antibiotic prophylaxis is needed for a surgical patient and be able to apply in a case scenario.

5. Identify the common pathogens and recommend the appropriate antibiotic for GI, orthopedic and vascular surgeries.

6. Appropriately document a pre-operative note.
Post-operative Care
1. Appropriately screen and evaluate a patient for post-operative risk factors and recommend preventive measures where appropriate.

2. Perform an appropriate post-operative evaluation, including a diagnostic workup, management and prevention (if appropriate) for the following types of patients:
   a. Healthy adult
   b. Pediatric
   c. Geriatric
   d. Pregnant woman
   e. Patients with the following pre-existing conditions/diseases:
      • Cardiac (MI, CHF, Angina, Valvular dx)
      • HTN
      • Respiratory (Asthma, COPD, URI)
      • Renal (ARI, CKD, ESRF)
      • Liver (Hepatitis, Cirrhosis)
      • Endocrine (Diabetes, Thyroid disease)
      • Hematologic (Anemia, bleeding and clotting disorders)
      • Immunocompromised (HIV, AIDS, chemotherapy, etc.)

3. Compare and contrast the four classifications of wounds and recommend the appropriate use and choice of antibiotics for each.

4. Discuss the following components of routine post-operative care
   • pain management
   • advancing diet
   • fluid
   • input/output
   • activity
   • advancements
   • wound management
   • routine labs

5. For the following post-operative complications:
   • atelectasis
   • deep vein thrombosis (DVT)
   • fever
   • internal hemorrhage
   • pneumonia
   • pressure ulcer
   • pulmonary embolus (PE)
   • sepsis
   • urinary tract infection (UTI)
   • wound infection/dehiscence
   a. Understand the predisposing factors
   b. Recognize the clinical manifestations through the appropriate history and physical exam
   c. Develop a differential diagnosis
   d. Order and interpret the results of the appropriate diagnostics (including laboratory, diagnostic and radiological studies/findings)
   e. Recommend and/or initiate appropriate management
f. Identify strategies for prevention when applicable

Additional Objectives:
Describe the advantages, disadvantages, indications, contraindications and complications of laparoscopic surgery.

1. Discuss the rationale for performing the following physical exam tests and the clinical significance of positive/negative findings:
   a. Psoas sign test
   b. Obturator sign
   c. Rovsing's sign
   d. Murphy's sign
   e. Rebound tenderness and guarding

2. Differentiate between upper and lower gastrointestinal bleeding by history and physical exam findings and develop a differential diagnosis for each.

3. Describe the indications for a colostomy and ileostomy.

LEARNING OBJECTIVES FOR SURGICAL SKILLS

Recognize, perform and/or assist in the following procedures and identify the indications and potential complications (when applicable) for each:

- placement and positioning of patient on operating table
- surgical scrub, gowning and gloving using sterile technique
- surgical prep and draping of patient
- maintenance of sterile field
- suctioning and retraction
- clamp, suture tie or ligature of hemorrhage
- electrocautery
- cryotherapy
- one and two handed knot tying
- instrument knot tying
- suture and staple placement and removal
- wound dressing and bandaging
- surgical drain/tube placement and removal
- nasogastric tube placement

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LEARNING OBJECTIVES FOR PHARMACOTHERAPEUTICS

For the listed drug or drug classes, compare and contrast the following in their use with surgical patients:
- mechanism of action
- drug/drug interactions

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• contraindications
• common as well as potentially lethal side effects
• appropriate patient education

Analgesics (opioid, ASA, APAP, NSAIDs) Betta blockers
Anesthetics Fluids (IV, PO)
Anticoagulants Oral and IV antibiotics
Antiemetics Thrombolytics

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LEARNING OBJECTIVES FOR DIAGNOSTICS

For the following diagnostic studies, students are expected to be able to
• appropriately order
• interpret the findings
• manage abnormalities (including counseling)
• recognize potential complications
• discuss false positives/negatives

Abdominal flat plate x-ray Needle aspiration biopsy
Abdominal obstruction series Paracentesis
Bone scan Percutaneous transhepatic cholangiography
(PTHC)
Chest x-ray (CXR) Pulmonary arteriogram
Ct of abdomen, pelvis and chest Radioiodine scan
Duplex ultrasound Radionucleotide scans
Mammography V/Q scan
MRI Vascular doppler
Ultrasound of abdomen Venography
Ultrasound of breast Arterial blood gases (ABG)
Ultrasound of the gallbladder Blood type and cross
Upper/lower gastrointestinal series Carcinoembryonic antigen (CEA)
Arteriography Complete blood count w/ differential
Biopsy with needle localization Complete metabolic panel (CMP)
Bronchoscopy Culture & sensitivity
Cholangiopancreatography (ERCP) Fecal occult blood
Colonoscopy/sigmoidoscopy Liver function tests (LFT) & enzymes
Culdocentesis Partial thromboplastin time (PTT)
Endoscopy Prostatic specific antigen (PSA)
Gastroduodenoscopy Prothrombin time (PT)
Hepatobiliary iminodiacetic acid scan Serum amylase & lipase
Intraoperative cholangiogram
Intravenous urogram (ivp)

END OF SURGICAL MEDICINE LEARNING OBJECTIVES

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