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

Upon completion of this clinical experience, the student will be expected to competently recognize and apply knowledge to compare, differentiate and evaluate the:

- etiology, epidemiology, risk factors and pathophysiology (if appropriate)
- clinical manifestations
- differential diagnosis
- assessment (including recommendation and interpretation of laboratory, diagnostic and radiological studies/findings)
- Understand the surgical, nonsurgical, pharmacological and non-pharmacological management
- prognosis, complications, prevention and patient education

of the following diseases/disorders/symptoms/post-operative complications:

Skin
- Lipoma
- Neoplasm
- Pilonidal cyst
- Chronic non-healing ulcers/wounds

Endocrine
- Adrenal cancer
- Thyroid (mass, cancer)
- Parathyroid disorders
- Pheochromocytoma
- Pituitary adenoma, cancer
- Identify and recognize the most common type of thyroid malignant tumor

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

Lung
- Lung (mass, cancer)
- Pleural effusion

Gastrointestinal
- Malignancies (oral, esophageal, stomach, intestinal, rectal, pancreatic)
- appendicitis
- perforated hollow viscus
- cholecystitis/cholelithiasis
- biliary colic

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liver (mass, cancer) diverticulitis acute pancreatitis
collective aortic aneurysm nephrolithiasis
intestinal obstruction inflammatory bowel disease
esophageal reflux, strictures & varices intussusception
ischemic bowel pyloric stenosis
hemorrhoids Meckel’s diverticulum
ulcers- gastric, duodenal, peptic colonic polyps
ileus volvulus
peritonitis bariatric surgery
hernias (hiatal, femoral, inguinal, incisional, umbilical)-incarcerated & strangulated hernia
Identify and discern the indications for a colostomy and ileostomy

Genitourinary and Prostate
Malignancies – bladder, testicular, uterine, prostate
Scrotal masses (hydrocele, varicule)
Wilm’s tumor
Identify and discern the indications for a Urostomy

Vascular
Deep vein thrombosis (DVT)
Acute arterial occlusion
Abdominal aortic aneurysm/dissection
Peripheral arterial/venous insufficiency/embolism/thrombosis
Gangrene
Mesenteric artery occlusion/Mesenteric ischemia

Pre-operative Care
Perform an appropriate pre-operative evaluation, including risk factor identification, a diagnostic workup, initiate management and prevention (if appropriate) for the following types of patients:

a. Healthy adult
b. Pediatric
c. Geriatric
d. Morbidly obese
e. Pregnant woman
f. Malnutrition
g. Patients with the following pre-existing conditions/diseases:
   • Cardiac (HTN, MI, CHF, Angina, Valvular dx)
   • Respiratory (Asthma, COPD, URI)
   • Renal (ARI, CKD, ESRF)
   • Liver (Hepatitis, Cirrhosis)
   • Endocrine (Diabetes, Thyroid disease, adrenal insufficiency)
   • Hematologic (Anemia, bleeding and clotting disorders)
   • Immunocompromised (HIV, AIDS, chemotherapy, etc.)
1. Identify the parameters used to determine whether antibiotic prophylaxis is needed for a surgical patient and be able to apply in a case scenario.

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

3. Identify appropriate components of and appropriately document a pre-operative note.

**Post-operative Care**

Perform an appropriate post-operative evaluation, including a diagnostic workup, initiate management and complication prevention (if appropriate) for the following types of patients:

- Healthy adult
- Pediatric
- Geriatric
- Morbidly obese
- Pregnant woman
- Malnutrition
- Patients with the following pre-existing conditions/diseases:
  - Cardiac (HTN, MI, CHF, Angina, Valvular dx)
  - 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.)

1. Apply the following components of routine post-operative care
   - pain management (medication choice, appropriate dosing, routes)
   - advancing diet
   - fluid
   - input/output
   - activity
   - wound management
   - routine labs

2. Post-operative complications:
   - Acid/base disorders
   - atelectasis
   - deep vein thrombosis (DVT)
   - electrolyte disorders
   - fever
   - internal hemorrhage
   - pleural effusion
   - pneumonia
   - pressure ulcer
   - pulmonary embolus (PE)
   - sepsis
   - urinary tract infection (UTI)
   - wound infection/dehiscence

a. In addition to the Learning objectives noted at the beginning of the objective, determine the likely complication using time of occurrence during the recovery process as a component
Additional Objectives:
1. Differentiate the advantages, disadvantages, indications, contraindications and complications of laparoscopic surgery as compared to the traditional open technique.

2. Differentiate the four classifications of wounds and recommend the appropriate use and choice of antibiotics for each.

3. Identify technique; 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

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

+++++++++++++++++++++++++++++++ LEARNING OBJECTIVES FOR PHARMACOTHERAPEUTICS++++++++++++++++++++++++++++++++

Students will also be expected to discern the properties of the following drug or drug classes including mechanism of action, interactions, contraindications, and major and common side effects and appropriate dosing and routes of administration in the surgical patient. Students will also be expected to discern the appropriate patient education and necessary follow up required for the following drugs or drug classes.

Analgesics (opioid, ASA, APAP, NSAIDs)  Anticoagulants
Anesthetics  Antiemetics

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Beta blockers
Fluids (IV, PO)
Indications and appropriate dosing of an opioid for a PCA pump

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LEARNING OBJECTIVES FOR DIAGNOSTICS

Students will be expected to appropriately **recommend**, **interpret** the findings, **identify** causes for false positive/negative, and **recognize the indications/clinical significance** of the following diagnostic studies. In addition students will be expected to discern appropriate **management** (including counseling and informed consent) when **abnormalities** are found in the following routine tests, and recognize the **potential complications** for each:

Abdominal flat plate x-ray
Abdominal obstruction series
Bone scan
Chest x-ray (CXR)
Ct of abdomen, pelvis and chest
Duplex ultrasound
Mammography
MRI
Ultrasound of abdomen
Ultrasound of breast
Ultrasound of the gallbladder
Upper/lower gastrointestinal series
Arteriography
Biopsy with needle localization
Bronchoscopy
Cholangiopancreatography (ERCP)
Colonoscopy/sigmoidoscopy
Culdocentesis
Endoscopy
Gastroduodenoscopy
Hepatobiliary iminodiacetic acid scan
Intraoperative cholangiogram
Intravenous urogram (ivp)

Needle aspiration biopsy
Paracentesis
Percutaneous transhepatic cholangiography (PTHC)
Pulmonary arteriogram
Radioiodine scan
Radionucleotide scans
V/Q scan
Vascular doppler
Venography
Arterial blood gases (ABG)
Blood type and cross
Carcinoembryonic antigen (CEA)
Complete blood count w/ differential
Complete metabolic panel (CMP)
Culture & sensitivity
Fecal occult blood
Liver function tests (LFT) & enzymes
Partial thromboplastin time (PTT)
Prostatic specific antigen (PSA)
Prothrombin time (PT)
Serum amylase & lipase

END OF SURGICAL MEDICINE LEARNING OBJECTIVES