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**Monday 25 November 2019**

AN-NAJAH NATIONAL UNIVERSITY

DEPARTMENT OF MEDICINE

General Surgery - Junior ILOs

(7222401)

# Course Outline

* **Course Details**

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| Course Title | General Surgery - Junior |
| Course Number | 7222401 |
| Prerequisite(s) | Biomedical Sciences Degree GPA > 2.5, TOFEL ITP > 500, IELTS > 6.5 |
| Course Type: | Compulsory |
| Credit Hours | 12 |

* **Class Details**

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| Weeks | 12 weeks |
| Time | 5 days/ week 8:00 am- 2:00 pm and 6 (24 hours) on-calls in addition to 4 (2-hour) Lectures/ week. |
| Location | An-Najah National University Hospital and Ministry of Health Hospitals affiliated to An-Najah National University in the northern of West Bank |

* **Course Description and Objectives**

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| This 12-week rotation introduces students to the basic principles of surgery. Students rotate with the surgical teams at various hospitals that are affiliated to our medical school. During the rotations, students are exposed to medical encounters with patients with common surgical problems. The course allows students to practice history taking relevant to surgical disorders as well as performing focused relevant physical examination needed to assess patients with surgical problems. The pre-operative and postoperative evaluation and management of surgical diseases are covered. In addition, students, during this rotation, attend many operations that held in surgical theaters in order to evaluate and develop the basic surgical skills for them which comes in parallel with doing night shifts during this rotation. |

# Textbooks and References

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| Textbook(s) |
| 1. **Bailey & Love's Short Practice of Surgery,** 27th Edition  Norman Williams, P Ronan O'Connell, Andrew McCaskie  2. **Browse's Introduction to the Symptoms & Signs of Surgical Disease 4th Edition**  by Norman L. Browse, John Black, Kevin G. Burnand, William E. G. Thomas.  3. **Surgery: A Case Based Clinical Review 2015th Edition**  by Christian de Virgilio , Paul N. Frank , Areg Grigorian  4. **First Aid for the Surgery Clerkship (First Aid Series) 2nd Edition**  by Matthew S. Kaufman , Latha Ganti , S. Matthew Stead , Nitin Mishra |
| References |
| * **Schwartz's Principles of Surgery,** 11th edition. F. Charles Brunicardi, Dana K. Andersen, Timothy R. Billiar, David L. Dunn, Lillian S. Kao, John G. Hunter, Jeffrey B. Matthews, Raphael E. Pollock * [**Sabiston Textbook of Surgery**: The Biological Basis of Modern Practicsurgical Practice](http://www.amazon.com/Sabiston-Textbook-Surgery-Biological-Practicsurgical/dp/141605233X/ref=sr_1_1?ie=UTF8&s=books&qid=1258983836&sr=1-1), by Courtney M. Townsend Jr. MD, R. Daniel Beauchamp MD, B. Mark Evers MD, and Kenneth L. Mattox MD * **Published Scientific papers.** |

# Textbook Cover

# תוצאת תמונה עבור ‪bailey and love surgery‬‏

# Topics and Teaching Methods:

**Specific Objectives of the Course:**

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| **No.** | Subject | **Specific Objectives** |
| 1 | Fluids and electrolytes | * Describe the extracellular, intracellular and intravascular volume in a 70-kg man * List at least four endogenous factors that affect renal control of sodium and water excretion. * Describe the 24-hr sensible and insensible fluid and electrolyte losses in the routine postoperative patient * Identify the signs and symptoms of dehydration * List and describe the objective ways of measuring fluid balance * Know the normal electrolyte values in the normal body secretions * Describe the possible causes (differential diagnosis), appropriate laboratory studies needed, and the treatment of common electrolyte and fluid disorders |

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| 2 | Bleeding disorders and blood transfusion | * Discuss medical history and physical findings that might identify the presence and etiology of a bleeding disorder. * List the minimum preoperative screening tests necessary when the patient is asymptomatic * Name the etiologic factors contributing to bleeding disorders * Name the common surgical conditions leading to disseminated intravascular coagulation (DIC). * Outline the importance of major and minor blood groups * Describe how to obtain and store blood * List the indications for blood transfusion in surgical practice * Recognize hazards of blood transfusion and how to avoid those (Infections, reactions). * Identify the different components of blood and how to order each of them. |
| 3 | Shock | * Define shock. * List four categories of shock (hypovolemic, cardiogenic, septicemic, neurogenic). * List at least three causes for each type of shock. * Contrast the effects of each category of shock on heart, kidney and brain. * Recognize the hemodynamic features, diagnostic tests, and physical findings that differentiate each type of shock. * Name and briefly describe the monitoring techniques that help in diagnosis and management of shock. * Outline the general principles of fluid, pharmacologic, and surgical intervention for each category of shock. |
| 4 | Burns | * Obtain relevant history for burns (flame, scold, closed space, exposure time, possible associated injuries) * Describe burn depth and size in a patient with a major burn * Determine percentage and degree of burns * List the indications for admission * Discuss pain management. * Outline fluid replacement. * Discuss wound management (open, closed, principles of antiseptic solutions). * Know the value of skin grafting. |
| 5 | Surgical site infections and surgical infections | * List the factors that contribute to infection after a surgical procedure * Identify the types of surgical infections * Describe the principles of prophylactic antibiotic use * Describe the diagnostic features and indicated treatment for common skin infection * Describe the clinical features and treatment of anaerobic and synergistic gangrene * Describe the diagnostic evaluation for an intra-abdominal abscess. * List the causes of postoperative fever and discuss the diagnostic steps for evaluation. |
| 6 | Wound healing and its disorders | * Define a wound and describe the sequence and approximate time frame of the phases of wound healing. * Describe the essential elements and significance of granulation tissue. * Describe the three types of wound healing and the elements of each. * Describe the phases of wound healing distinct to each type of wound. * Describe clinical factors that decrease collagen synthesis and retard wound healing. * Describe the rationale for the uses of absorbable and nonabsorbable sutures. * Discuss the functions of a dressing. * Define a clean a contaminated and an infected wound and describe the management of each. |
| 7 | Multiple injuries: first aid and triage.  Management of specific traumas | * Describe the conditions, signs, and symptoms commonly associated with upper airway obstruction. * Describe the risks associated with the management of an airway in the traumatized patient. * Outline the options available and the sequence of steps required to control an airway in the traumatized patient, including protection of the cervical spine. * List the identifying characteristics of patients who are likely to have upper airway obstruction. * Define shock, including the pathophysiology. * 6. List four types of shock and outline the management of a patient in hemorrhagic shock. * List the indications and contraindications for use of a pneumatic antishock garment in patients with hemorrhagic shock. * List six thoracic injuries that are immediately life threatening and should be identified in the primary survey and six that potentially life threatening and should be identified in the secondary survey. Outline a treatment plan for each injury. * List the indications for chest tube insertion, pericardiocentesis, and needle thoracentises. Outline the technique for each. * List three common thoracic injuries that, although not life threatening, need skilled care. * Define the limits of the abdominal cavity, demonstrate the abdominal examination for trauma and outline the tests that are of use in abdominal trauma. * Differentiate between blunt and penetrating trauma. * List the indications, contraindications, and limitations of peritoneal lavage. Describe a positive peritoneal lavage. * Outline the pathophysiologic events leading to decreased levels of consciousness, including the unique anatomic and physiologic features of head and spinal injuries. * List the three functions assessed by the Glasgow Coma Scale and outline the point scale. * Outline the initial management of the unconscious patient and the patieny with suspected spinal cord injury. * List the test results and assessment results that should be passed to neurologic consultants. * Outline the differences between non-life-threatening and life threatening extremity injuries and the management of each. * Describe a thorough examination of the extremities in a traumatized patient. |
| 8 | Benign breast disorders | * Identify and describe the major types of breast lumps. * List common risk factors for benign breast disease * List diagnostic modalities and their sequence in the workup of a patient with a breast mass and a patient with nipple discharge. * Describe the natural history of benign breast disorders * Describe the treatment for a fibroadenoma and fibrocystic diseases |
| 9 | Malignant breast disorders | * List risk factors for breast cancer. * Describe the natural history of malignant breast neoplasms. * List and discuss the types of breast cancer and their clinical staging. * Define the anatomic limits of surgical treatments of breast cancer. * List and discuss the treatment options for regional and systemic breast cancer (surgical, nonsurgical, and combined). * Describe the rationale for adjuvant chemotherapy, radiation, and hormonal therapy in the treatment of breast cancer. * List the current survival and recurrence rates of treated breast cancer, according to clinical stage. * Define a treatment plan for local recurrence and metastatic breast |
| 10 | Esophageal disorders | * Describe esophageal hiatal hernia with regard to anatomic type (sliding and paraesophageal) and need for treatment. * Describe the anatomic and physiologic factors predisposing to reflux esophagitis. * Describe the symptoms of reflux esophagitis and discuss the diagnostic procedures used for confirmation. * List the indications for operative management of esophageal reflux and discuss the physiologic basis for the antireflux procedure used. * Describe the pathophysiology and clinical symp-toms associated with achalasia of the esophagus. * List the common esophageal diverticula, their location, symptomatology, and pathogenesis. * With particular reference to etiologic factors, differentiate pulsion and traction diverticula of the esophagus. * Describe and recognize the radiologic findings that characterize motility disorders of the esoph-agus, including achalasia and manometric eval-uation of the lower esophageal sphincter. * List the symptoms suggestive of an esophageal malignancy. * Outline a plan for diagnostic evaluation of a patient with a suspected esophageal tumor. * Describe the natural history of a malignant lesion of the esophagus and list treatment options, indicating the order of preference. * List the common types of benign esophageal neoplasms and briefly describe how they are differentiated from malignant lesions. * Describe the etiology and presentation of traumatic perforation of the esophagus and the physical findings that occur early and late after such an injury. |
| 11 | 1. Complication of Peptic ulcer disease. 2. Gastric malignancies | * Compare and contrast the common symptoms and pathogenesis of gastric and duodenal ulcer disease, including patterns of acid secretion. * Discuss the significance of the anatomic location of either a gastric or duodenal ulcer. * Discuss the diagnostic value of upper gastrointestinal roentgenograms, endoscopy with biopsy, gastric analysis, serum gastrin levels, and the secretin stimulation test in patients with suspected peptic ulcer disease. * Describe in detail the nonoperative management of patients with peptic ulcer disease. * Discuss the complications of peptic ulcer disease, including clinical presentation, diagnostic workup, and appropriate surgical treatment. * List the clinical and laboratory features that differentiate the Zollinger-Ellison syndrome (gastrinoma) from duodenal ulcer disease. * Compare the risk of carcinoma in patient with gastric ulcer disease with the risk in those with duodenal ulcer disease. * Describe and discuss the common operations performed for duodenal and gastric ulcer disease as well as the morbidity associated with each procedure. * Discuss the commenly recognized side effects associated with duodenal and gastric ulcer disease surgery, including treatment plans for each. * Identify premaligmant conditions, epidemiologic factors, and clinical features in patients with gastric adenocarcinoma. * Describe the common types of neoplasm that occur in the stomach, and discuss appropriate diagnostic procedures, therapeutic modalities, and prognosis for each. * List the general principles of curative and palliative surgical procedures for patients with gastric neoplasm |
| 12 | Vermiform appendix | * List the signs and symptoms of acute appendicitis * Formulate a differential diagnosis * Outline a diagnostic work up in patients with suspected acute appendicitis * List common complications of a ruptured appendix * Describe the incidence and management of appendiceal carcinoid * Describe the clinical presentation of Meckel’s diverticulum * Discuss the treatment |
| 13 | Colonic and rectal tumors | * Identify the common symptoms and signs of the carcinoma of the colon and rectum. * Discuss the appropriate laboratory, endoscopic, and x-ray studies for the diagnosis of carcinoma of the colon and rectum * Outline the treatment options including radiochemotherapy * Describe the postoperative follow up including discussion of the role of the carcinoembryonic antigen CEA in detecting recurrence * Using TNM and Dukes classification, discuss the staging and 5-year survival rate |
| 14 | Diverticulosis and mesenteric ischemia | * Describe the clinical findings of diverticular disease, differentiating the symptoms and signs of diverticulitis and diverticulosis. * Discuss complications of diverticular disease and their appropriate treatment * Describe clinical findings and presentation as well as treatment of mesenteric ischemia. * Discuss massive lower GI bleeding including differential diagnosis, initial management, appropriate diagnostic tests and treatment. |
| 15 | Inflammatory bowel disease | * Differentiate ulcerative colitis UC and Crohn’s disease CD of the colon in terms of history, pathology, x-ray findings, treatment and risk of cancer * Discuss the role of surgery in the treatment of UC and CD complications. * Discuss the nonoperative therapy of CD and UC |
| 16 | Intestinal obstruction | * List signs, symptoms, and diagnostic aids for evaluating presumed large bowel obstruction. * Discuss at least four causes of colonic obstruction in the adult patient, including a discussion of frequency of each cause. * Outline a plan for diagnostic studies, preoperative management, and treatment of volvulus, of intussusception, of impaction, and of obstructing colon cancer. * Given a patient with mechanical large- or small- bowel obstruction, discuss the potential complications if the treatment is inadequate. |
| 17 | Acute perianal conditions | * Discuss the anatomy of hemorrhoids, including the four grades encountered clinically; differentiate internal and external homorrhoids. * Discuss the etiologic factors and predisposing conditions in the development of hemorrhoidal disease. * Describe the symptoms and signs of patients with external homorrhoids; with internal hemorrhoids. * Outline the principles of management of patients with symptomatic external and internal homorrhoids, including the roles of nonoperative and operative management. * Discuss the role of anal crypts in perianal infection, and describe the various types of perianal infections. * Outline the symptoms and physical findings of patients with perianal infaction. * Outline the principles of management of patients with perianal infections, including the role of antibiotics, incision and drainage, and primary fistulectomy. * Define fissure-in-ano. * Describe the symptoms and physical findings of patients with fissure- in-ano. * Outline the principles of management of patients with fissure-in-ano. |
| 18 | Complications of gallstones and jaundice | * List the common types of gallstones and describe the pathophysiology leading to their formation. * List several diseases that predispose to gallstones. * Describe the signs and symptoms in a patient with biliary colic. Contrast these symptoms with those of acute cholecystitis. * List the tests commonly used in the diagnosis of calculus biliary tract disease and describe the indications for, limitations, and potential compli-cations of each. * Describe the likely natural history of a young patient with asymptomatic gallstones. * List the possible complications of biliary calculi and describe the history, physical examination, and and laboratory findings for each. * Outline the medical and surgical management of a patient with acute cholecystitis. * Describe the signs, symptoms, and management of choledocholithiasis. * Outline a diagnostic and management plan for a patient with acute right upper quadrant pain. * Describe the diagnostic evaluation and management of a patient with fever , chills, and jaundice. * Define the following: Murphy's sign, Courvoisier's sign, T tube, including purpose and circumstances of use, gallstone ileus. * Contrast carcinomas of the gallbladder, bile duct, and ampulla of vater with regard to survival and presenting symptoms. |
| 19 | 1. Acute and chronic pancreatitis 2. Pancreatic tumors | * Classify pancreatitis on the basis of the severity of injury to the organ. * List four etiologies of pancreatitis. * Describe the clinical presentation of a patient with acute pancreatitis, including indications for surgical intervention. * Discuss at least five potential early complications of acute pancreatitis. * Discuss four potential adverse outcomes of choronic pancreatitis as well as surgical diagnostic approach, treatment options, and management. * Discuss the criteria used to predict the prognosis for acute pancreatitis. * Discuss the mechanism of pseudocyst formation with respect to the role of the duct and list five symptoms and physical signs of prognosis. * Describe the diagnostic approach to a patient with a suspected pseudocyst, including indications for and sequence of tests. * Discuss the natural history of an untreated pancreatic pseudocyst as well as the medical and surgical treatment. * List four pancreatic neoplasms and describe the pathology of each with reference to cell type and function. * Describe the symptoms, physical signs, laboratory findings, and diagnostic workup of a pancreatic mass on the basis of the location of the tumor in the pancreas. * Describe the surgical treatment of pancreatic neoplasms. * Discuss the long-term prognosis for pancreatic cancers on the basis of pathology and cell type. |
| 20 | Hydatid cysts | * Discuss the lifecycle of hydatid cyst (hepatic and pulmonary) * List the relevant tests to diagnose hydatid cyst (plain X-Ray, U/S, CT, and serology). * Outline the methods of treatment |
| 21 | Aneurysms and vascular anomalies | * Describe the common sites and relative incidence of arterial aneurysms. * List the symptoms, signs, and differential diagnosis, and diagnostic and management plans for a patient with a rupturing abdominal aortic aneurysm. * Discuss the indications, contraindications, and risk factors for surgery in chronic asymptomatic abdominal aneurysms. * Define and discuss the prevention of the common complications following aneurysm surgery. * Compare thoracic, abdominal, femoral and popliteal aneurysms with respect to presentation, com- placations (i.e., frequency of dissection, rupture, thrombosis, and embolization), and treatment. |
| 22 | Peripheral vascular occlusive disease | * Describe the pathophysiology of intermittent claudication; differentiate this symptom from leg pain due to other causes. * Describe the diagnostic approach and medical management of arterial occlusive disease; include a discussion of the roles of the commonly used noninvasive procedures. * List criteria to help differentiate venous, arterial, diabetic, and infectious leg ulcers. * Describe the operative treatment choices available for chronic occlusive disease of the distal aorta and iliac arteries, superficial femoral / popliteal arteries, and tibial and peroneal arteries. * List four indications for amputation and discuss clinical and laboratory methods for selection of the amputation site. * Describe the clinical manifestations, diagnostic workup, and surgical indications for chronic renal artery occlusion. * Describe the natural history and causes of acute arterial occlusion, and differentiate embolic occlusion and thrombotic occlusion. * List six signs and symptoms of acute arterial occlusion and outline its management (e.g., indications for medical versus surgical treatment). |
| 23 | Venous and lymphatic disorders | * Identify the usual initial anatomic location of deep vein thrombosis and discuss the clinical factors that lead to an increased incidence of venous thrombosis. * Identify noninvasive and invasive testing procedures for diagnosing venous valvular incompetence and deep vein thrombosis. * Outline the differential diagnosis of acute edema associated with leg pain. * Describe five modalities for preventing the development of venous thrombosis in surgical patients. * Describe the methods of anticoagulant and thrombolytic administration, evaluation of adequacy of therapy, and contraindication to therapy. * Describe the clinical syndrome of pulmonary embolus, and identify the order of priorities in diagnosing and caring for an acutely ill patient with life-threatening pulmonary embolus. * List the indications for surgical intervention in venous thrombosis and pulmonary embolus. * Outline the diagnostic, operative, and nonoperative management of venous ulcers and varicose veins. * Define lymphedema praecox, lymphedema tarda, primary lymphedema, and secondary lymphedema. * Explain the pathophysiology of lymphedema and discuss its treatment. |
| 24 | Thyroid gland and thyroglossal disorders | * Describe the symptoms of a patient with hyperthyroidism; discuss the differential diagnosis and treatment options. * Understand the major risk factors for carcinoma of the thyroid gland and the prognostic variables that dictate therapy. * List the different types of carcinoma of the thyroid gland and their cell type of origin; discuss the appropriate therapeutic strategy for each. * Discuss the evaluation and differential diagnosis of a patient with a thyroid nodule. |
| 25 | Adrenal and parathyroid surgical disorders | * Discuss the evaluation and differential diagnosis of a patient with hypercalcemia. * Discuss the surgical therapy of primary hypepara thyroidism. * Discuss the presentation and appropriate therapy for patients with parathyroid carcinoma, and contrast this with other causes of primary hyperparathyroidism. * Review the pathophysiology of secondary and tertiary hyperparathyroidism, and discuss the surgical therapies. * Describe the multiple endocrine neoplasia syndromes and their surgical treatment. * List and discuss three major adrenal dysfunctions, their clinical presentation, etiology, diagnostic procedures, and treatment options. * Describe the clinical features of Cushing's syndrome and tell how causal lesions in the pituitary, adrenal cortex, and extraadrenal sites may be distinguished from a diagnostic standpoint. * Discuss medical and surgical and surgical management of Cushing's syndrome in patients with adrenal adenoma and with pituitary adenoma causing adrenal hyperplasia, with an ACTH-producing neoplasm. * Describe the likely pathology, clinical feaures, and laboratory findings of a patient with hyperaldosteronism. * Discuss the diagnostic workup of a patient with suspected hyperaldosteronism and the preferred operative treatment. * Discuss pheochromocytoma, including its associated signs and symptoms, an appropriate diagnostic workup, and its treatment. * Describe the features of the multiple endocrine adenopathy syndrome associated with pheochromocytoma. * Discuss the possible causes of virilization in a patient, including the clinical presentation and diagnostic workup. |
| 26 | Diseases of the salivary glands | * Review the anatomy of major salivary glands. * Discuss patterns of presentation, investigations, and treatment of sialectasis. * Describe common infections affecting the major salivary glands (including postoperative parotitis). * Understand the clinical presentation of benign and malignant salivary gland tumours. * Classify malignant salivary gland tumors. |
| 27 | Congenital anomalies of the genitourinary system | * Identify the different anomalies (Agenesis, horseshoe Kidney, PUJ, Reflux, hypospedias) * Appreciate that such anomalies may be related to other anomalies. * Formulate a list of relevant investigations * Suggest the treatment modalities |
| 28 | Urinary caliculi | * Discuss epidemiology & etiology of renal stones. * List complications of renal stones * Discuss metabolic incidents associated with stones * Outline principles of management Factors that influence treatment |
| 29 | Diseases of the prostate | * Outline the main embryological, anatomical, and physiological and histopatholigical features of prostate gland. * Discuss in brief the natural history and etiology of both inflammatory and neoplastic prostate diseases * Analyze the main clinical points related to prostatitis (acute and chronic) with reference to chronic pelvic pain syndrome * Provide a general overview of prostate tumors with reference to benign hyperplasia and adenocarcinoma. * Discuss of the role of screening methods. |
| 30 | Renal and bladder tumors | * Appreciate the clinical presentation and the indirect signs of each tumor. * Understand the methods and importance of staging * Identify the relevant investigations and confirmative measures * Appreciate the role of surgery in the treatment * Appreciate the role of other treatment modalities. |
| 31 | Testicular tumors | * Discuss acute scrotum versus painless swelling of scrotum.   + - * Staging and its clinical implication.       * List the management methods |
| 32 | Ischemic heart disease | * Recognize the clinical presentation * List the predisposing factors * Identify relevant diagnostic investigation * Cardiac angiogram review * Discuss modalities of treatment |
| 33 | Primary and secondary lung neoplasms | * Understand the major trends in lung cancer epidemiology in the past 50 years * Know the role of smoking in lung cancer and other less common environmental exposures * Describe the pathogenesis of lung cancer based on several current models of oncogenesis * Know the essential differences between the two major classifications of broncogenic carcinoma * Develop an algorithm for management of the symptomatic versus asymptomatic thoracic patient * Know the features of the TNM staging for non-small cell lung cancer * Develop an outline for management of non-small cell lung cancer and small cell lung cancer * Describe the presentation, evaluation, and management of secondary lung neoplasms * Be familiar with the spectrum of benign lung tumors |
| 34 | Mediastinal disorders | * Describe the key organs in each mediastinal compartment and the potential pathology that can arise * Know the general incidence of the most common mediastinal masses. * Develop an understanding of the options to evaluate mediastinal masses and the advantages and disadvantages of both * Know the differential for lesions that can be confused for primary mediastinal masses * Name the three most common tumors in each compartment * Know the differential diagnosis for a germ cell tumor * Know the potential diagnostic markers for paraneoplastic, endocrine and germ cell tumors |
| 35 | Surgical pleural disorders | * Understand the pathophysiology of pneumothorax and its management. * Know the differential diagnosis for fluid in the pleural space * Understand how patients develop a hemothorax and chylothorax and the appropriate treatment options * Outline the stages of development of an empyema * Describe the typical characteristics of pleural tumors |
| 36 | CNS Tumors | * Understand the differentiate types of primary CNS tumors & metastatic tumors. * Be able to know the basic pathological factors of CNS tumors. * To understand the clinical presentation (general & specific) * To know & apply the diagnostic tools with specific features of each type. * To be able to apply the management protocol & apply the different treatment modalities, surgery, radiotherapy & chemotherapy. * The prognosis of brain tumor in front & with specific types. |
| 37 | Pediatric surgery | * Determine maintenance fluid requirements and normal urinary output for infants and children. * Determine the blood volume and describe methods of replacement of blood loss in infants and children. * Describe the typical presentation and findings on physical examination of hypertrophic pyloric stenosis. * Define gastroesophogeal reflux disease and describe its typical presentation and methods of evaluation. * Describe the typical presentation of neonatal bowel obstruction and methods of evaluation. Be able to describe the differential diagnosis of neonatal bowel obstruction. * Explain the typical clinical presentation of intussusception, including the principles of resuscitation, use of barium enema, and indications for and principles of operative treatment. * Explain the anatomical defect in Hirschprung's disease, and relate this to the functional bowel obstruction. * Describe the differential diagnosis for constipation and methods of treatment. * Describe the medical management of vomiting in infants and children. * Describe the differential diagnosis of vomiting and the importance of bilious vomiting in children. * Describe congenital diaphragmatic hernia and eventration of the diaphragm including diagnosis and treatment. * Define the most common types of esophageal atresia and describe the typical clinical presentation of an infant with esophageal atresia, the radiologic method of determining presence or absence of a distal tracheoesophageal fistula. * Describe the embryologic problem resulting in malrotation, the mechanism of duodenal obstruction, and small bowel volvulus. * State the principle of medical management of necrotizing enterocolitis and explain the indications for surgical intervention. * Describe a Meckel's diverticulum and list the four most common complications. * Define and distinguish gastroschisis and omphalocele and how the appearance of the herniated bowel differs from that of the omphalocele. |
| 38 | Skills of physical examination head & neck | * Cervical lymph nodes * Thyroid examination * Cystic hygroma * Examination of other neck masses * Carotid artery pulsations and carotid body tumor * Position of trachea |
| 39 | Physical examination of the chest | * Chest deformity desertion * Chest expansion * Signs of phenol thorax * Signs of pleural effusion * Heart sounds and position of apex beat |
| 40 | Physical examination abdomen and genitalia | * Inspection for hernia orifices and cough impulse * Inspection of diversion of the recti * Palpate for hepatomegaly and how to measure liver span * Palpate for splenomegaly * Palpate for kidneys * How to differentiate between spleen and left kidney masses * Examine for ascites * Palpate for abdominal aorta * Signs of hernia * Inguinal masses * Examination of gentile for haematocele/ testicular masses, epidermal cyst |
| 41 | Physical examination lower limbs | * Describe shape and deformity * Signs of chronic ischemia * Peripheral pulsations * Examination for foot ulcers * Examination for super facial and deep sensations * Examination for muscle power muscle tone, and reflexes * Examination for amputations (level, stump, joint deformity) * Signs of DVT * Signs of varicose veins |
| 42 | Physical examination general | * Pulse examination * Blood pressure examination * Signs of anemia * Signs of dehydration * Signs of cyanosis * Signs of jaundice * Level of consciousness |
| 43 | Physical examination for post operation patient | * Types of skin incisions * Describe colostomy * Describe drains * Describe I.V lines and canulae |

# List of lectures and discussed Subjects and their Objectives

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| **No.** | **Topic** | **Objectives** |
| 1 | Abdominal X-ray | 1. Principals of abdominal imaging 2. Normal abdominal anatomy on the x-radiographs 3. Abnormal findings in abdominal radiographs 4. Systematic reading of x-rays |
| 2 | Approach to Upper GI Bleeding | 1. Defining upper GI bleeding 2. Diagnostic approach to GI bleeding 3. Localizing the source of bleeding 4. Differential diagnosis when considering GI bleeding 5. Management of GI bleeding |
| 3 | Approach to Parathyroid & Adrenal Disorders | 1. Defining the anatomy of the parathyroid and adrenal glands. 2. Approach to hypercalcemia and hypocalcemia 3. Explaining the pathophysiology, signs and symptoms of these glands’ disorders. 4. Explaining the tests required for the diagnosis of these disorders. 5. The modes of management of each pathological condition affecting the parathyroids and the adrenals. |
| 4 | Approach to Lower GI Bleeding & Diverticular Disease | 1. Defining lower GI bleeding 2. Diagnostic approach to GI bleeding 3. Localizing the source of bleeding 4. Differential diagnosis when considering GI bleeding 5. Management of GI bleeding |
| 5 | Systemic Response to Injury & Metabolic Support | 1. Factors responsible for neurohormonal response to injury and trauma 2. Introduction to SIRS 3. CNS regulation of trauma 4. Hormonal response to stress |
| 6 | Approach to Shock | 1. Defining shock 2. Pathophysiology of shock 3. Neurohormonal response to shock 4. Types of shock 5. Characteristics of each type of shock 6. How to manage patients with shock |
| 7 | Fluid and Electrolyte Abnormalities with Acid-Base Balance | 1. Demonstrating body fluid anatomy, compartments, and fluid balance 2. Explaining the osmotic pressure 3. How to choose the type of fluid in medical practice |
| 8 | Approach to Spleen & Lymphatic Disorders | 1. Function of the spleen 2. Congenital anomalies of the spleen 3. Trauma of the spleen 4. Local signs of splenic injury 5. Grades of spleen injury 6. Management |
| 9 | Preoperative Assessment of Surgical Patients | 1. General evaluation of the surgical patient 2. Indications for routine investigations 3. Specific considerations for preoperative management 4. Principles of postoperative care |
| 10 | Hemeostasis, Surgical Bleeding & Transfusion Therapy | 1. Definition 2. Haemostasis component:   -Vascular phase  -Platelet phase  -Coagulation cascade   1. Clot inhibition/Fibrynolysis 2. Coagulation disorder 3. Platelet disorder 4. Pharmacology |
| 11 | Approach to Dysphagia with Esophageal Disorders | 1. Defining dysphagia 2. Explaining the different presentations of dysphagia depending on the esophageal disorder 3. Diagnosis of esophageal disorders 4. Esophageal cancer clinical presentation, grading and staging 5. Management and follow up of esophageal cancer |
| 12 | Approach to Breast Disorders | 1. Anatomy of the breast 2. Benign breast conditions 3. Malignant breast condition 4. Approach to the breast lump |
| 13 | Approach to Surgical Liver Disorders | 1. Liver Anatomy 2. Portal Hypertension 3. Infection of liver Pyogenic Liver Abscesses Amebic Abscesses Hydatid Disease Ascariasis 4. Evaluation of an Incidental Liver Mass 5. Hepatic Cysts 6. Benign Liver Lesions 7. Malignant Liver Tumors |
| 14 | Trauma Patient: Initial Assessment & Neck Trauma | 1. Types of trauma 2. Initial evaluation of the trauma patient 3. Primary survey 4. Secondary survey |
| 15 | Surgical Drains | 1. Explaining the types of surgical drains based on the system they belong to (open vs closed) 2. Knowing the indications for each type of drain and the indications for its removal |
| 16 | Approach to Hernia | 1. Definition 2. Types 3. Causes 4. Clinical Picture 5. D. D 6. Assessment 7. Treatment 8. Challenging Decisions 9. Complication(s) |
| 17 | Approach to Chest Trauma | 1. Types of injury to the chest 2. Approach to the trauma patient 3. Management of patients with chest trauma |
| 18 | Approach to Abdominopelvic Trauma | 1. Mechanism of injury 2. Assessment 3. Investigation 4. Introduction to FAST 5. Special organs injury 6. Management |
| 19 | Approach to Colocrectal Tumors | 1. Anatomy of the colon and rectum 2. Benign colorectal tumors 3. Mesenchymal lesions 4. Expanded view of Colo-rectal cancer (grading, staging, diagnosis and management) |
| 20 | Approach to Painful Jaundice & Gallbladder Disease | 1. Anatomy of the gallbladder 2. Defining jaundice 3. Approach to patients with painful jaundice 4. Gallbladder stones (pathophysiology, clinical presentation, diagnosis and management) |
| 21 | Surgical Skin Disorders | Discussion of the common surgical skin disorders |
| 22 | Wound Healing & Surgical Infection | 1. definition and types of wounds 2. introduction to wound healing 3. physiology of wound healing 4. wound healing types and strength 5. Factors complicating wound healing 6. Treatment of scars |
| 23 | Approach to Urinary Retention & UTI | 1. Definition of urinary retention 2. Types of urinary retention 3. Possible causes 4. Approach to UR 5. Management of UR |
| 24 | Approach to Neck swellings & Salivary Glands Disorders | 1. Anatomy of the salivary glands 2. Salivary glands disorders 3. Anatomy of the neck triangles 4. Approach to any swelling in the neck region with differential diagnosis |
| 25 | Approach to Thyroid Nodules & Disorders | 1. Anatomy and embryology of the thyroid gland 2. Approach to the thyroid nodule 3. Hyper and hypothyroidism 4. Malignant thyroid nodules |
| 26 | Approach to Anal & Perianal Conditions | 1. Anatomy of the anal canal and anal sphincters 2. Discussion of hemorrhoids, anal fissures and piles in terms of clinical presentation and treatment option for these patients 3. Anal cancer types and clinical presentation and management |
| 27 | Approach to Intestinal Obstruction | 1. Types of intestinal obstruction 2. Pathophysiology of IO 3. Clinical presentation of IO 4. Diagnostic approach 5. Management of IO |
| 28 | Approach to Painless Jaundice & Pancreatic tumors | 1. Pancreatic Anatomy 2. Defining Pancreatitis 3. Explaining the Three phases of Pancreatitis 4. Diagnosis of Acute Pancreatitis 5. Manifestations of complications 6. Diagnosis 7. Mnagement |
| 29 | Approach to Acute & Chronic Pancreatitis | 1. Pancreatic anatomy 2. Defining chronic pancreatitis 3. Diagnostic approach 4. Diiferential diagnosis 5. Management |
| 30 | Head Trauma | 1. Mechanisms of head injury 2. Approach to head injury 3. Complications of head trauma 4. Management and diagnostic approach of such cases |
| 31 | Approach to Acute Abdomen & Acute Appendicitis | 1. Approach to acute abdomen 2. Signs and symptoms of acute abdomen 3. Clinical presentation of acute appendicitis 4. Diagnostic approach of appendicitis 5. Management of acute appendicitis |
| 32 | Approach to GI Malformation | 1. Anatomy and embryology of the GI system 2. Malrotation, hiatal hernia and diaphragmatic hernia. |
| 33 | Approach to Abdominal Wall Congenital Malformation | 1. Anatomy and embryology of the GI system and the abdominal wall 2. Umbilical hernia, gastroschisis, omphalocele 3. Approach to these conditions and their management |
| 34 | Approach to Flank Pain | 1. clinical symptoms associated with renal colic 2. Renal Colic Clinical Symptoms 3. What Is The Burden Of Kidney Stones 4. Differential Diagnosis 5. Common Types of Kidney Stones 6. Diagnosis of a Kidney Stone 7. Situations where Stones Require Urgent Intervention |
| 35 | Approach to Hematuria | 1. Clinical definition of hematuria 2. Classification of hematuria 3. Approach to the patient with hematuria and their management |
| 36 | Approach to Scrotal Disorders | 1. Identify scrotal anatomy and physiology and embryology 2. Identify the most common benign and malignant conditions 3. Review the proper physical examination of the scrotum 4. Approach to scrotal emergencies |
| 37 | Approach to Venous Disorders | 1. Defining varicose veins 2. Clinical presentation and management of varicose veins 3. Pathophysiology of VV |
| 38 | Approach to Chronic Arterial Disorders (Including Carotid AA) | 1. Anatomy of the major arterial system 2. Pathophysiology of the major arterial pathologies 3. Diagnostic approach to each pathological condition 4. Management of these conditions |
| 39 | Approach to Vascular Emergency | 1. Identify the anatomy of important peripheral vessels 2. Identify the signs and symptoms of acute limb ischemia 3. Approach to Variceal hemorrhage 4. Diagnosis and management of these conditions |
| 40 | Cardiac Emergency | 1. Anatomy of thorax 2. Common cardiothoracic accidents and emergencies 3. Investigations in cardiothoracic emergencies 4. Management of the most common cardiothoracic emergencies |

# Updates and Advances in General Surgery:

Students are involved in all of the hospital’s teaching activities including attending morning reports, Journal Clubs, lectures, seminars and Rounds. Updates on guidelines, Case study discussions and other advances in Surgery and its subspecialties are usually a part of the Morning report, Journal Clubs and Mid-day activities. Students are involved in carrying out presentations in selected topics and cases nominated by their teaching physicians.

* **Topics Covered in Clerkships:**

|  |  |
| --- | --- |
| WEEK 1 | Good History taking |
| General Examination |
| Informed Consent |
| Communication skills |
| WEEK 2 | Abdominal examination |
| Approach to the management of patients with Acute abdominal pain |
| Approach to the management of patients with Jaundice |
| WEEK 3 | Abdominal examination with digital rectal examination |
| Approach to the management of patients with perianal conditions |
| Approach to the management of patients with gastrointestinal bleeding/ melena/ hematemesis |
| WEEK 4 | Lumps examination |
| Approach to the management of patients with abdominal mass |
| Approach to the management of patients with GIT tumors |
| WEEK 5 | Ulcer examination |
| Approach to the preoperative preparation for an elective major abdominal surgery |
| Surgical complications |
| WEEK 6 | Neck examination including thyroid |
| Approach to the management of Neck mass |
|  | Approach to solitary thyroid nodule |
| WEEK 7 | Breast, Chest and axilla examination |
| Approach to the management of patients with breast lump/ pain/ nipple discharge |
| Breast cancer |
| WEEK 8 | HERNIA EXAMINATION |
|  | Approach to groin lump  Approach to dysphagia |
| WEEK 9 | Approach to the management of patients with Poly trauma (to focus on abdominal and thoracic injuries) |
| IV fluids |
| Approach to the management of patients with sepsis |
| UROLOGY | Scrotum and genitalia examination |
| Approach to the management of patients with scrotal swelling |
| Approach to the management of patients with Hematuria |
| Urology trauma |
| VASCULAR | Vascular examination and limbs |
| Approach to the management of patients with Limb pain /swelling (Focus on limb ischemia, DVT, edema and cellulitis) |
| Vascular surgery principles and aneurysms |

# Assessment

|  |  |  |
| --- | --- | --- |
| **Exam Format** | **Note** | **Weight (%)** |
| OSCE-exam | Practical exams done after the end of the clerkship on real patients to evaluate the medical knowledge of students, ability to take medical history, clinical skills and to communicate with patients. It includes 5-6 stations each of 7 minutes duration. 1-2 of these stations are dry in which students answer cases-questions based on their knowledge in X-Ray, ECG, ABGs and other related basic imaging and tests. | 25% |
| Written exam | An exam done at the end of the academic year to evaluate the medical knowledge. Moreover, these exams were provided from the National Board of Medical Examiners (NBME) in USA which is an independent, not-for-profit organization that serves the public through its high- quality assessments of healthcare professionals. | 60% |
| Evaluation | Evaluation during rotation which depends on: daily attendance of morning report, educational rounds, clinical skills, basic medical procedures, group discussions, seminars, lectures attendance, student attitude and respect for patients and team. | 15% |
| Written cases and Log book | Students are required to write 10 full cases that includes History, Vital sings, Physical examination, Labs, Imaging and Differential diagnosis. A Log book which is provided to students at the beginning of their clerkship which contains the basic and required skills and procedures for their level should be filled and handed by the end of the clerkship. |
| Total |  | 100% |

# Student Evaluation Form During Clerkships

# General Surgery Log book

**General surgery logbook**

**Procedures performed by the medical student & observed by a doctor or a nurse**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| The procedure | Full Name & Signature | | | | | |
| Blood sampling |  |  |  |  |  |  |
| Peripheral IV line |  |  |  |  |  |  |
| IM SC injection |  |  |  |  |  |  |
| Wound dressing |  |  |  |  |  |  |

**Procedures to be performed by the student & observed by the attending physician**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| The procedure | Full Name & Signature | | | |
| Folley’s catheterization |  |  |  |  |
| NGT insertion |  |  |  |  |
| PR exam |  |  |  |  |
| Rectal enema |  |  |  |  |

**Procedures attended by the student**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| The procedure | Full Name & Signature | | | |
| Chest tube insertion |  |  |  |  |
| Endotracheal Intubation |  |  |  |  |
| I &D of skin abscess |  |  |  |  |
| FNA Biopsy |  |  |  |  |
| Anoscopy |  |  |  |  |
| Central line insertion |  |  |  |  |

# Important Dates

|  |
| --- |
| * **At the end of the Clerkship: OSCE Exam** * **At the end of the Academic year: Written Exam** |

# Teaching and Learning Methods

|  |
| --- |
| **Tools** |
| 1. Lectures. 2. Small-group teaching. 3. Problem-based or case-based learning. 4. Peer assisted learning. 5. Bed-side teaching. 6. Clinical demonstrations. 7. Clinical skills laboratory training. 8. Field exercises in the community. |

# Course **Policies**

* Students should attend all the activities mentioned above during this clerkship every day, and do the required on-calls.
* The maximum allowed absence is 10% of the clerkship’s duration and this only in case of an accepted situation evaluated by the Department of Medicine.
* Students are not allowed to have even a single day off without an accepted reason evaluated by the department of medicine. In that case, 2 points of the clerkship total will be subtracted and this will be added to the student file record.
* Students are required to fill the Log book in by the end of their Clerkship.