**Checklist Syllabus**

**for**

**Surgery course**

**(451)**

**THE CONTENTS**

**A . PRINCIPLES OF SURGERY**

**( Lectures )**

1. **The metabolic response to injury**

Dr. Thamer Nouh

1. **Fluid and electrolyte balance in surgical patient**

Dr. Fahad Bamehriz

1. **Shock**

Dr. Hamad Al-Qahtani

1. **Transfusion of blood and blood products**

Prof. Dawlatly

1. **Nutritional support in surgical patients**

Prof. Alam

1. **Surgical infections and antibiotics**

Dr.Mohamed Al-Akeely

1. **Burns**

Dr. Adnan gelidan

1. **Trauma ( Two lectures )**

Dr. Thamer Nouh

* Primary and secondary survey
* Head injury
* Neck injury
* Chest injury
* Abdomen and pelvis injury
* Limbs injury

**10. Pre-operative assessment and anesthesia**

Dr. Mansour Akeel

**11.Post-operative care and complications**

Prof. Alsalamah

**12.Obesity and principles of laparoscopic surgery**

Prof. Aldhohyan

**13. Transplantation**

Dr. AlSharabi

**FIRST CONT. EXAM**

**\**

**B . GENERAL SURGERY**

**( Clinical sessions )**

|  |  |  |
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| 1 )  2 ) | The abdominal wall and hernias  Gastroduodenal disorders | Teaching staff  Upper GIT unit |
| 3 )  4 )  5 **)** | The liver  Gallbladder and bile ducts  The pancreas and spleen | Teaching staff  Hepatobiliary unit |
| **6** )  **7** ) | Intestine , appendix and  Ano-rectal conditions | Teaching staff  Colorectal unit |
| **8** )  **9** ) | The Breast  Endocrine surgery | Teaching staff  Breast and Endocrine  unit |
| **10**) | Emergency surgery  a) Acute abdomen  b) Intestinal obstruction  c)Acute gastrointestinal hemorrhage | Teaching staff  Unit-- C - KSMC |

**C . SURGICAL SPECIALITIES**

**( Clinical sessions )**

1. Plastic and reconstructive surgery
2. Vascular surgery
3. Cardiothoracic surgery
4. Urology
5. Neurosurgery
6. Pediatric surgery

**D. Practical procedures and patient investigations**

**( skills )**

|  |  |
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| 1. General precautions |  |
| 2. Aseptic technique |  |
| 3. Local anesthesia |  |
| 4. Wound suture |  |
| 5. Airway procedures |  |
| 6. Thoracic procedures |  |
| 7. Abdominal procedures |  |
| 8. Vascular procedures |  |
| 9. Urinary procedures |  |
| 10. Central nervous system  procedures |  |
| 11. Drug administration |  |
| 12. Imaging |  |

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| **SECOND CONT. EXAM** |
| **OSCE** |

**A . PRINCIPLES OF SURGERY**

**The metabolic response to injury**

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|  | **Features of the response when**  **not modified by medical**  **intervention** |
| •The acute inflammatory response.  •The endothelium and sympathetic  nervous system activation.  •The endocrine response to surgery. | **Factors mediating the metabolic**  **response to injury** |
| • Hypovolaemia  • Increased energy metabolism and  substrate cycling.  • Catabolism and starvation.  • Changes in red blood cell synthesis  and blood coagulation. | **Consequences of the metabolic**  **response to injury** |
| • Control of blood glucose.  • Manipulation of inflammation and  coagulation in severe infection. | **Factors modifying the metabolic**  **response to injury** |
|  | **Anabolism** |

**Principles of fluid and electrolyte balance in surgical patients**

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| • Fluids and Electrolytes distribution in the body compartments | **Normal water and electrolyte**  **balance** |
| • Insensible fluid losses.  • Effect of surgery. | **Assessing losses in the surgical**  **patient** |
| • Types of intravenous fluid.  • Maintenance fluid requirements  • Treating hypovolaemia and or/  hypotension. | **Intravenous fluid administration** |
| • Water and sodium imbalance.  • Potassium imbalance.  • Other electrolyte disturbances. | **Specific water and electrolyte**  **Abnormalities** |
| • Metabolic acidosis.  • Metabolic alkalosis  • Respiratory acidosis  • Respiratory alkalosis  • Mixed patterns of acid-base imbalance | **Acid-base balance** |

**Shock and Hemorrhage**

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| **Definition of shock** |  |
| **Causes of shock** |  |
| **Pathophysiology of shock** | • Microcirculation  • Microcirculation  • Cellular function |
| **Effects on individual organ systems** | • Nervous system  • Kidneys  • Respiratory system  • Heart  • Gut  • Liver  • Neurohumoral response |
| **Principles of management** | • Hypovolemic shock  • Septic shock  • Cardiogenic shock  • Anaphylaxis |
| **Advanced monitoring organ support** | • Cardiovascular support  • Respiratory support  • Renal support  • Nutrition |
| **Hemorrhage** | • Pathophysiology  • Revealed and concealed hemorrhage  • Primary , Reactionary , Secondary hemorrhage  • Surgical and non-surgical hemorrhage  • Classification of hemorrhage  • Management |

**Transfusion of blood and blood products**

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| **Blood donation** |  |
| **Blood components** | • Fresh blood components  • Plasma fractions |
| **Red cell serology** | • ABO antigens  • Rhesus antigens  • Other red cell antigens |
| **Indications for transfusion** |  |
| **Pre-transfusion testing** |  |
| **Blood administration** |  |
| **Adverse effects of transfusion** |  |
| **Autologous transfusion** | • Pre-operative donation  • Isovolaemic haemodilution  • Cell salvage |
| **Transfusion requirements in**  **special surgical settings** | • Massive transfusion  • Cardiopulmonary bypass |
| **Methods to reduce the need for blood transfusion** | • Acute volume replacement  • Mechanism for reducing blood use in  Surgery |
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**Nutritional support in surgical patients**

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| **Assessment of nutritional status** |  |
| **Assessment of nutritional**  **requirements** |  |
| **Causes of inadequate intake** |  |
| **Methods of providing nutritional**  **support** | • Enteral nutrition  • Parenteral nutrition |
| **Monitoring of nutritional support** |  |

**Surgical infections and antibiotics**

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| **Pathogenic potential of microbes** | • Pathogenic synergy |
| **Asepsis** | • Surgical disinfection and anti-septic precautions  • Sterilization  • Disinfection |
| **Surgical infection** | • Infection, bacteraemia and  septicaemia  • Microbiological diagnosis of infection  • Wound infection  • Sepsis, shock and the systemic  Inflammatory response syndrome  • Helicobacter pylori |
| **Anaerobic infection** | • Tetanus  • Gas gangrene and other clostridial  infections  • Progressive bacterial gangrene and  necrotizing fasciitis  • Other anaerobic infections |
| **Hospital-acquired (nosocomial) infections** | • Sites of colonization  • Hospital microbial challenges  • Control of hospital-acquired  (nosocomial) infection |
| **Antimicrobial management of wound infections** |  |
| **Principles governing the choice and use of antibiotics** | • Antibiotic policy  • Prophylactic use of antibiotics |
| **Management of**  **immunosuppressed patients,**  **including those who have had**  **splenectomy** |  |

**Principles of the surgical management of cancer**

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| **The biology of cancer** | •The adenoma-carcinoma progression  • Invasion and metastasis  • Natural history and estimate of cure |
| **The management of patients with**  **cancer** | • Screening  • The cancer patient's journey  • Symptoms that may initiate a patient's  cancer journey  • Referral to a specialist/cancer centre  • Investigations  • Management  • Follow-up  • Palliation of advanced cancer  • Prognosis and counseling  • Care of the dying |

**The Burns**

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| **Burns** | • Mechanisms  • Local effects of burn injury  • General effects of burn injury  • Classification  • Prognosis  • Management |

**Trauma**

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| **Trauma epidemiology** |  |
| **Injury biomechanics and accident**  **prevention** |  |
| **Alcohol and drugs** |  |
| **Wounds** | • Classification and production  • Gunshot wounds |
| **Falls** |  |
| **Injury severity assessment** |  |
| **Pre-hospital care and transport** |  |
| **Accident and Emergency (A&E) Department** |  |
| **Primary and secondary survey : Resuscitation in the emergency department** | • ABCDE  • Examination from head to toes |
| **Imaging and other diagnostic aids** | • FAST & U/S  • CT scan  • DPL |
| **Management of specific organ injuries** | * Head injury * Neck injury * Chest injury * Abdominal and pelvic injuries * Limbs injury |

**Pre-operative assessment , anesthesia and post-operative pain control**

**a) Pre-operative assessment and investigations**

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| **Assessment of fitness for**  **operation** | • Perioperative risk  • The importance of oxygen transport to  tissues |
| **Systematic approach to the initial**  **assessment of patients** | • Cardiovascular system  • Respiratory system  • Smoking  • Alcohol  • Obesity  • Drug therapy  • Allergies  • Previous operations and anesthetics |
| **Pre-operative investigations** | • Blood biochemistry  • Liver function tests  • Full blood count  • Coagulation screen  • Blood cross-matching |
| **The high-risk patient** |  |
| **Assessment of the patient for emergency surgery** |  |
| **The pre-operative ward round** | • Pre-medication  • Fasting |
| **Implications of chronic disease in the perioperative period** | • Cardiovascular disease  • Respiratory disease  • Jaundice  • Diabetes mellitus  • Chronic renal failure  • Hematological disease  • Abnormal coagulation  • Pregnancy  • Miscellaneous conditions |

**b) Anesthesia**

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| **General anesthesia** |  |
| **Local anesthesia** | • Topical anesthesia  • Local infiltration  • Peripheral nerve block  • Spinal anesthesia  • Epidural anesthesia |

**c) Post-operative analgesia**

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| **Pain physiology** |  |
| **Pain assessment** |  |
| **Post-operative analgesic strategies** | • Epidural analgesia  • Patient-controlled analgesia  • Parenteral and oral opioid regimes  • Paracetamol, NSAIDs and selective  COX-2 inhibitors  • Neuropathic pain  • Post-operative nausea and vomiting |

**Post-operative care and complications**

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| **Immediate post-operative care** | • Airway obstruction  • Hemorrhage |
| **Surgical ward care** | • General care  • Tubes, drains and catheters  • Fluid balance  • Blood transfusion  • Nutrition |
| **Complications of anesthesia and**  **surgery** | • General complications  • Pulmonary complications  • Cardiac complications  • Urinary complications  • Cerebral complications  • Venous thrombosis and  pulmonary embolism  • Wound complications |

**Obesity and principles of laparoscopic surgery**

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| **Magnitude of the problem** |  |
| **Pathophysiology and associated medical problems** |  |
| **Preoperative Evaluation and Selection** | • General Bariatric Preoperative Evaluation and preparation  • Evaluation for Specific Comorbid Conditions |
| **Operative procedures** |  |
| **Postoperative Care and Follow-up** |  |
| **Complications of obesity surgery** |  |
| **Principles of laparoscopic surgery** |  |

**Transplantation**

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| **Transplantation immunology** | • Phases of the recipient’s immune  response to the donor organ  • Patterns of allograft rejection  • Immunosuppression |
| **Organ donation** | • Brain-stem death  • Multi-organ retrieval  • Strategies to increase organ donation |
| **Renal transplantation** | • Indications and patient assessment  • The operative procedure  • Post-operative management and  complications  • Outcome |
| **Liver transplantation** | • Indications and patient assessment  • The operative procedure  • Post-operative management and  complications  • Outcome |
| **Pancreas transplantation** | • Indications and patient assessment  •The operative procedure  • Outcome |
| **Heart and lung transplantation** | • Indications and patient assessment  • The operative procedure  • Post-operative management and  complications  • Outcome |

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**B . GENERAL SURGERY**

**The abdominal wall and hernias**

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| **Umbilicus** | • Developmental abnormalities  • Umbilical sepsis  • Umbilical tumors |
| **Disorders of the rectus muscle** | • Hematomas  • Desmoids tumor |
| **Abdominal hernias** | • Inguinal hernias  • Ventral hernias  • Rare external hernias  • Internal hernias  • Complications of hernias  • Management of complicated hernias |

**Gastroduodenal disorders**

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| **Surgical anatomy** | • Stomach  • Duodenum  • Blood supply  • Lymphatics  • Nerve supply |
| **Surgical physiology** | • Gastric motility  • Gastric secretions |
| **Peptic ulceration** | • Special forms of ulceration  • Management of uncomplicated peptic  ulcer disease |
| **Complications of peptic ulceration**  **requiring operative intervention** | • Perforation  • Acute hemorrhage  • Pyloric stenosis |
| **Gastric neoplasia** | • Benign gastric neoplasms  • Malignant gastric neoplasms  • Other gastric tumors |
| **Miscellaneous disorders of the**  **stomach** | • Menetrier’s disease  • Gastritis  • Dieulafoy’s lesion  • Gastric volvulus  • Bezoars |
| **Miscellaneous disorders of the**  **duodenum** | • Duodenal obstruction  • Duodenal diverticula  • Duodenal trauma |
| **Surgery for obesity** | • Operations for obesity  • Complications of obesity surgery |

**The liver**

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| **Anatomy** | • Segmental anatomy  • Blood supply and function |
| **Jaundice** | • Diagnosis |
| **Congenital abnormalities** |  |
| **Liver trauma** |  |
| **Hepatic infections and infestations** | • Pyogenic liver abscess  • Amoebic liver abscess  • Hydatid disease |
| **Portal hypertension** | • Effects of portal hypertension  • Clinical features  • Acute variceal bleeding  • Ascites |
| **Tumors of the liver** | • Benign hepatic tumors  • Primary malignant tumors of the liver  • Metastatic tumors |
| **Liver resection** |  |
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| **The gallbladder and bile ducts** | |
| **Anatomy of the biliary system** |  |
| **Physiology** | • Bile salts and the enterohepatic  circulation |
| **Congenital abnormalities** | • Biliary atresia  • Choledochal cysts |
| **Gallstones** | • Pathogenesis  • Pathological effects of gallstones  • Common clinical syndromes  associated with gallstones  • Other benign conditions of the  gallbladder  • Investigation of patients with suspected  gallstones  • Surgical treatment of gallstones  • Complications of cholecystectomy  • Management of acute cholecystitis  • Atypical biliary pain  • Non-surgical treatment of gallstones  • Management of acute cholangitis |
| **Other benign biliary disorders** | • Asiatic cholangiohepatitis  • Primary sclerosing cholangitis |
| **Tumors of the biliary tract** | • Carcinoma of the gallbladder  • Carcinoma of the bile ducts |

**The pancreas and spleen**

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| **THE PANCREAS** | |
| **Surgical anatomy** |  |
| **Surgical physiology** | • Exocrine function  • Endocrine function  • Pancreatic pain |
| **Congenital disorders of the pancreas** |  |
| **Pancreatitis** | • Acute pancreatitis  • Chronic pancreatitis |
| **Neoplasms of the pancreas** | • Neoplasms of the exocrine pancreas  • Neoplasms of the endocrine pancreas |
| **THE SPLEEN** | |
| **Surgical anatomy** |  |
| **Surgical physiology** | • Hemopoiesis  • Filtration of blood cells  • Immunological function |
| **Indications for splenectomy** | • Trauma  • Hemolytic anemia  • The purpura  • Hypersplenism  • Proliferative disorders  • Miscellaneous conditions  • Other indications for splenectomy |
| **Splenectomy** | • Pre-operative preparation  • Technique  • Post-operative course and  complications |

**The intestine and appendix**

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| **Applied surgical anatomy and physiology** | • Anatomy and function of the small  intestine  • Anatomy and function of the large  intestine and appendix |
| **Disorders of the appendix** | • Appendicitis  • Tumors of the appendix |
| **Clinical assessment of the small and large intestine** | • History and clinical examination  • Investigation of the luminal  gastrointestinal tract |
| **Principles of operative intestinal surgery** |  |
| **Inflammatory bowel disease** | • Crohn’s disease  • Ulceration colitis |
| **Disorders of the small intestine** | • Paralytic ileus  • Mechanical obstruction |
| **Non-neoplastic disorders of the colon and rectum** | • Colonic diverticular disease  • Ischemia of the large intestine  • Other benign conditions of large  bowel |
| **Intestinal stoma and fistula** | • Stoma  • Intestinal fistula |
| **Polyps and polyposis syndromes of the large intestine** | • Colorectal adenoma  • Familial adenomatous polyposis |
| **Malignant tumors of the large intestine** | • Colorectal adenocarcinoma  • Management of colorectal  adenocarcinoma |

**Anorectal conditions**

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| **Applied surgical anatomy** | • Anal musculature and  innervations  •The lining of the anal canal  • The anal (hemorrhoid)  cushions  • Lymphatic drainage of the anal  canal |
| **Anorectal disorders** | • Hemorrhoids  • Fissure-in-ano  • Perianal abscess  • Fistula-in-ano |
| **Pilonidal disease** |  |
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**The breast**

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| **Anatomy and physiology** | • Anatomy  • Congenital abnormities  • Hormonal control of breast  development and function |
| **Evaluation of the patient with breast disease** | • Clinical features  • Clinical examination  • Assessment of regional nodes  • Imaging  • Cytology and biopsy  • One-stop clinics  • Accuracy of investigations |
| **Disorders of development** | • Juvenile hypertrophy  • Fibroadenoma |
| **Disorders of cyclical change** | • Cyclical mastalgia  • Nodularity  • Non-cyclical breast pain |
| **Disorders of involution** | • Palpable breast cysts  • Sclerosis  • Ducts ectasia  • Epithelial hyperplasia |
| **Benign neoplasms** | • Duct papillomas  • Lipomas  • Phyllodes tumors |
| **Breast infection** | • Lactating infection  • Non-lactating infection  • Skin-associated infection |
| **Breast cancer** | • Epidemiology  • Types of breast cancer  • Screening for breast cancer  • Mammographic features of breast  cancer  • Staging  • The curability of breast cancer  • Presentation of breast cancer  • Management of operable breast  cancer  • Complications of treatment  • Psychological aspects  • Follow-up  • Management of locally advanced  breast cancer  • Breast cancer in pregnancy  • Management of metastatic or  advanced cancer  • Miscellaneous tumors of the breast |
| **Male breast** | • Gynaecomastia  • Male breast cancer |

**Endocrine surgery**

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| **THYROID GLAND** | • Surgical anatomy and development  • Thyroid function  • Assessment of thyroid gland |
| **Enlargement of the thyroid gland (goitre)** | • Non-toxic nodular goitre  • Thyrotoxic goitre  • Thyroiditis  • Solitary thyroid nodules  • Other forms of neoplasia |
| **Hyperthyroidism** | • Primary thyrotoxicosis (Grave’s  disease)  •Toxic multinodular goitre and toxic  adenoma |
| **Malignant tumors of the thyroid** | • Papillary carcinoma  • Follicular carcinoma  • Anaplastic carcinoma  • Medullary carcinoma  • Lymphoma |
| **Thyroidectomy** |  |
| **PARATHYROID GLAND** | • Surgical anatomy  • Calcium metabolism  • Primary hyperparathyroidism  • Secondary and tertiary hyperparathyroidism  • Hypoparathyroidism  • Parathyroidectomy |
| **ADRENAL GLAND** | • Surgical anatomy and development |
| **Adrenal cortex** | • Cushing’s syndrome  • Hyperaldosteronism  • Adrenogenital syndrome (adrenal  virilism)  • Adrenal feminization |
| **Adrenal medulla** | • Phaeochromocytoma  • Non-endocrine adrenal Medullary  tumors  • Adrenal ‘incidentaloma |
| **Adrenalectomy** |  |
| **OTHER SURGICAL ENDOCRINE SYNDROME** | • Apuldomas and multiple endocrine  neoplasia  • Carcinoid tumors and the carcinoid  syndrome |

**Surgical emergency**

**a) The acute abdomen**

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| **Pathophysiology of abdominal pain** | • Somatic pain  • Visceral pain |
| **Pathogenesis** | • Inflammation  • Obstruction |
| **Clinical assessment** | • History  • Examination  • Investigations |
| **Etiology** |  |
| **Management** |  |
| **Peritonitis** | • Primary peritonitis  • Post-operative peritonitis |
| **Intra-abdominal abscesses** |  |
| **Medical causes of acute abdomen** |  |
| **Non-specific abdominal pain (NSAP)** |  |
| **Gynecological causes of the**  **acute abdomen** | • Mittelschmerz and ruptured corpus  luteum  • Ruptured ectopic pregnancy  • Torsion or rupture of the ovarian cyst  • Pelvic inflammatory disease |

**b) Intestinal obstruction**

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| **Small bowel obstruction** | • Clinical features  • Pathophysiology  • Investigation and diagnosis  • Etiology  • Treatment |
| **Large bowel obstruction** | • Clinical features  • Pathophysiology  • Investigation and diagnosis  • Etiology  • Treatment |
| **Non-mechanical ( Adynamic , paralytic ) obstruction** | • Clinical features  • Pathophysiology  • Investigation and diagnosis  • Etiology  • Treatment |
| **Pseudo-obstruction of small and large bowel** | • Clinical features  • Pathophysiology  • Investigation and diagnosis  • Etiology  • Treatment |
| **Bowel strangulation** | • Clinical features  • Pathophysiology  • Investigation and diagnosis  • Etiology  • Treatment |
| **Post-operative mechanical obstruction** | • Clinical features  • Pathophysiology  • Investigation and diagnosis  • Etiology  • Treatment |
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**c) Acute gastrointestinal hemorrhage**

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| **Approach to the Patient with Acute Gastrointestinal Hemorrhage** | • Initial Assessment  • Risk Stratification  • Resuscitation  • History and physical examination  • Localization  • Therapy |
| **Acute upper gastrointestinal Hemorrhage** | • Clinical presentation  • Diagnosis  • Specific causes  • Treatment ( Medical , Endoscopic and surgical ) |
| **Acute lower gastrointestinal Hemorrhage** | • Clinical presentation  • Diagnosis ( colonoscopy , Radionuclide scanning and Mesenteric Angiography )  • Specific causes  • Treatment ( Medical , Endoscopic and surgical ) |
| **Acute lower gastrointestinal Hemorrhage from an obscure source** | • Diagnosis ( Endoscopy , Angiography , small bowel endoscopy , Video capsule endoscopy )  • Treatment |

**C . SURGICAL SPECIALITIES**

**Plastic and reconstructive surgery**

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| **Structure and functions of skin** |  |
| **Wound** | •Types of wound  • Principles of wound healing  • Factors influencing wound healing  • Wound infection  • Involvement of other structures  • Devitalized skin flaps  • Wound with skin loss  • Crushing/degloving injuries and  gunshot wounds |
| **Burns** | • Mechanisms  • Local effects of burn injury  • General effects of burn injury  • Classification  • Prognosis  • Management |
| **Skin and soft tissue lesions** | • Diagnosis of skin swelling  • Cysts  • Tumors of the skin  • Epidermal neoplasms arising from  basal germinal cells  • Epidermal neoplasms arising from  melanocytes  • Vascular neoplasms  (hemangoimas)  • Tumors of nerves  • Tumors of muscles and connective  tissue  • Disorders of the nails |

**Vascular and endovascular surgery**

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| **Pathophysiology of arterial disease** | • Pathology  • Clinical features |
| **Chronic lower limb arterial disease** | • Anatomy  • Clinical features  • Intermittent claudication  • Critical limb ischemia  • Management of lower limb ischemia |
| **Amputation** | • Indication  • Level of amputation  • Surgical principles  • Rehabilitation and limb fitting  • Phantom pain |
| **Arterial disease of the upper limb** | • Overview  • Management |
| **Cerebrovascular disease** | • Definitions  • Carotid artery disease  • Vertebrobasilar disease |
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| **Acute limb ischemia** | • Aetiology  • Classification  • Clinical features  • Management  • Post-ischemic syndromes |
| **Aneurysmal disease** | • Classification  • Abdominal aortic aneurysm (AAA)  • Peripheral aneurysms |
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| **Pathophysiology of venous disease** | • Anatomy  • Physiology |
| **Varicose veins** | • Classification  • Epidemiology  • Clinical features  • Aetiology  • Examination  • Investigations  • Management  • Superficial thrombophlebitis |
| **Chronic venous insufficiency** | • Pathophysiology  • Assessment  • Management |
| **Venous thromboembolism (VTE)** | • Epidemiology  • Pathophysiology  • Aetiology-Diagnosis  • Venous gangrene  • Prevention  • Management  • Other forms of venous thrombosis |
| **Lymphoedema** | • Pathophysiology  • Primary lymphoedema  • Secondary lymphoedema  • Clinical features  • Investigations  • Management |

**Cardiothoracic surgery**

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| **Basic considerations** | • Pathophysiological assessment  • Assessment of risk |
| **ACQUIRED CARDIAC DISEASE** | |
| **Ischemic heart disease** | • Coronary artery disease  • Surgery for the complications of  coronary artery disease |
| **Cardiac valvular disease** | • Assessment  • Surgical management  • Endocarditis  • Aortic valve disease  • Mitral valve disease  • Tricuspid valve disease |
| **Pericardial pathology** | • Pericardial effusion  • Pericardial constriction |
| **CONGENITAL CARDIAC DISEASE** | • Atrial septal defect  • Ventricular septal defect  • Patent ductus arteriosus  • Coarctation of the aorta  • Tetralogy of Fallot |
| **THORACIC SURGERY** | • Assessment  • Bronchogenic carcinoma  • Assessment for pulmonary resection  • Metastatic disease  • Other lung tumors  • Mesothelioma  • Mediastinum  • Pneumothorax  • Emphysema  • Interstitial lung disease  • Pleuropulmonary infection  • Chest wall deformities  • Post-operative care  • Cardiac and pulmonary  transplantation |

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| **THE ESOPHAGUS** | |
| **Surgical anatomy** |  |
| **Symptoms of esophageal**  **Disorders** | • Dysphagia  • Pain  • Regurgitation |
| **Examination** |  |
| **Investigation** | • Blood tests  • Radiology  • Endoscopy  • Computed tomography  • Ultrasonography  • Laparoscopy  • Manometry and pH studies |
| **Impacted foreign bodies** |  |
| **Corrosive oesophagitis** |  |
| **Perforation** |  |
| **Motility disorders** | • Achalasia  • Diffuse esophageal spasm  • Nutcracker esophagus |
| **Plummer-Vinson syndrome** |  |
| **Pouches** |  |
| **Gastro-esophageal reflux** | • Hiatus hernia  • Barrett's esophagus |
| **Tumors of the esophagus** | • Benign tumors  • Carcinoma of the esophagus |

**Urological surgery**

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| **Assessment** | • General points  • Urinary tract symptoms & Hematuria  • Examination  • Investigation |
| **Upper urinary tract (kidney and ureter)** | • Anatomy  • Physiology  • Trauma  • Renal tumors  • Renal and ureteric calculi  • Upper tract obstruction  • Pelviureteric junction obstruction  (idiopathic hydronephrosis)  • Miscellaneous causes of obstruction |
| **Lower urinary tract (bladder, prostate and urethra)** | • Anatomy  • Physiology  • Trauma  • Bladder tumors  • Carcinoma of the prostate  • Benign prostatic hyperplasia  • Urethra stricture |
| **Disorders of micturation-**  **incontinence** | • Structural disorders  • Neurogenic disorders  • Principles of management |
| **External genitalia** | • Anatomy  • Physiology  • Circumcision  • Congenital abnormalities of the penis  • Undescended testis (cryptorchidism)  • Torsion of the testis  • Epididymo-orchitis  • Hydrocoele  • Varicocoele |

**Neurosurgery**

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| **Surgical anatomy and physiology** | • The skull  • The spine  • The brain  • The meanings and cerebrospinal fluid  • The cranial nerves  • The spinal cord |
| **Blood supply** | • Anterior circulation  • Posterior circulation |
| **Intracranial pressure** | • Brain herniation syndromes |
| **Investigations** | • Plain X-ray  • Computed tomography  • Magnetic resonance imaging  • CT and MR angiography |
| **Cerebrovascular disease** | • Subarachnoid hemorrhage  • Primary intracerebral hemorrhage  • Arteriovenous malformations  • Cavernomas |
| **Neurotrauma** | • Assessment  • Management  • Skull fracture  • Extradural hematoma and  contusions  • Diffuse axonal injury  • Trauma spinal injury |
| **Intracranial infections** | • Bacterial infections |
| **Intracranial tumors** | • Tumors of the skull  • Pediatric neuro-oncology |
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| **Vertebral column** | • Spinal degenerative disease |
| **Peripheral nerve lesions** | • Carpal tunnel syndrome  • Ulnar nerve compression at the  elbow  • Meralgia paraesthetica |

**Pediatric surgery**

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| **Neonatal intestinal obstruction** | • Hirschsprung disease  • Esophageal atresia  • Imperforated anus  • Intestinal atresia |
| **Common pediatric surgical emergencies** | • Acute appendicitis and its deferential diagnosis  • Intussusceptions and its associated problems  • Meckle's diverticulum  • Foreign bodies associated problem  • Perianal sepsis in children |
| **Other common pediatric surgical problems** | • Abdominal wall defects  • Umbilical , inguinal hernias and other hernias  • Vascular malformation  • Undescended testis |
| **Current national pediatric surgical problems** | • Children Motor Vehicle Trauma  • Childhood obesity |
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**D . Practical procedures and patient investigations**

**( skills )**

**Practical procedures and patient investigation**

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| **General precautions** |  |
| **Aseptic technique** |  |
| **Local anesthesia** |  |
| **Wound suture** | • Suturing the skin  • Suture materials |
| **Airway procedures** | • Maintaining the airway  • Ventilation by mask  • The laryngeal mask airway  • Endotracheal intubation  • Surgical airway  • Changing a tracheostomy tube |
| **Thoracic procedures** | • Intercostal tube drainage  • Removal of an intercostals drainage  tube  • Pleural aspiration |
| **Abdominal procedures** | • Nasogastric tube insertion  • Fine-bore nasogastric tubes  • Gastric lavage  • Esophageal tamponade  • Abdominal paracentesis  • Diagnostic peritoneal lavage |
| **Vascular procedures** | • Venepuncture  • Safety measures  • Venepuncture for blood culture  • Peripheral venous cannulation  • Venous cutdown  • Central venous catheter insertion  • Arterial blood sampling  • Needle pericardiocentesis |
| **Urinary procedures** | • Urethral catheterization  • Suprapubic catheterization |
| **Central nervous system**  **procedures** | • Lumbar puncture |
| **Drug administration** |  |
| **Imaging** | • Plain radiography  • Contrast studies  • Computed tomography (CT)  • Ultrasonography  • Magnetic resonance imaging (MRI)  • Radioisotope imaging  • Position emission tomography (PET) |