STUDY GUIDE

AZIZ FATIMAH MEDICAL & DENTAL COLLEGE

AZIZ FATIMAH HOSPITAL

DEPARTMENT OF GENERAL SURGERY

FAISALABAD

2021-2022

PREPARED BY:

- **Prof. Dr. Tahir Bashir**
  FCPS, FACS
- **Assoc. Prof. Dr. Zakariya Rasheed**
  FCPS, MRCS
- **Dr. Rabbiya Abdul Ghani (SR)**
  FCPS
- **Dr. Muhammad Masood Iqbal**
  MBBS (REGISTRAR)

FOREWORD

The drafting of Surgery guide has been undertaken under the kind supervision of **Prof. Dr. Tahir Bashir**. It is an endeavor to provide an objective and comprehensive format of functioning to all the health professionals at the Department of General Surgery here at AFM&DC/AFH. The aim is to inculcate uniformity in patient care as well to guide the team of doctors at the department so that a methodical approach can be adopted at every level, thus maximizing the efficiency and the level of organization. The theoretical knowledge presented in this Guide is up to date and has been organized in very practical terms, keeping in mind the facilities available and the difficulties encountered. Lastly, I would like to thank **Associate Professor Dr. Zakariya Rasheed** for giving me the opportunity of drafting this Guide & SOPs.

Dr. Muhammad Masood Iqbal
2021-2022.

VISION & MISSION

The man, ever since his creation, has been aspiring and struggling to measure the limits of this universe, on the one hand, and calculate and utilize the ultimate faculties of his own mind on the other.

The wonders done so far, in all fields of life, by this super creature of the Almighty are the outcome of healthy human mind dwelling in healthy bodies. Maladies, since the first day, have been a continuous and disastrous threat to human health which not only hamper the routine growth and working of an individual but also prohibit the advancement and progression of a nation on the whole. Undoubtedly, the most researched and explored field of study, in human history, remains the study of human health, and centuries ago it had assumed the shape of a defined science. In the modern era, the fruits of the health researchers are being passed on to the ailing by the healthy administrators, physicians and surgeons. Aziz Fatimah Medical & Dental College welcomes MBBS students.

It is heartening to note that this institution has established its name and fame by imparting quality education not only in terms of formal professional education but also has endeavored in character building of the future doctors. We do hope that with the arrival of the vision, aims and objectives as perceived at the time of foundation would be fulfilled. We do hope that you will make all efforts to gain knowledge with its full application and prove to be a worthy citizen of this country. May Allah guide you and us in future nation building. Ameen

SR: NO	CONTENTS	PAGE

INTRODUCTION TO THE
DEPARTMENT OF GENERAL SURGERY
AZIZ FATIMAH MEDICAL & DENTAL COLLEGE

AZIZ FATIMAH HOSPITAL, FAISALABAD

INTRODUCTION TO DEPARTMENT OF GENERAL SURGERY, AZIZ FATIMAH MEDICAL & DENTAL COLLEGE FAISALABAD.

General Surgery is a medical discipline that involves performing various types of surgical procedures to treat a broad range of health problems & diseases. General surgeon can diagnose several types of diseases i.e., related to abdomen and the organs connected to it which may include bile ducts, liver, pancreas, spleen, appendix, small & large intestine, rectum, stomach, and may operate the thoracic region, glands, hernias diabetic complications like diabetic foot & etc.

The department of general surgery at Aziz Fatimah Hospital provides general and specialized surgical services to patients suffering from a wide range of congenital and acquired conditions requiring surgical intervention. The department specializes in providing minimally invasive laparoscopic surgeries with expert & personalized care to improve the quality, safety, and very good outcomes of surgery. Internationally experienced and board-certified consultants evaluate and manage patients by maintain close coordination with different specialties physicians in the pre-operative evaluation and post-operative management of patients by providing integrated & quality care.

The department is divided into two units. Unit-1 is headed by **Professor Dr. Tahir Bashir** who is also the head of the faculty of the department. Unit-2 is headed by **Professor Dr. Fakhar Hameed** who is the only supervisor for post-graduate training in surgery department. Here immense emphasis is laid not only on enhancement of patient care but also on the quality of academic activities & training program.

OPD, Emergency & OT days are divided amongst the two units. Indoor facilities are available at surgical Unit-1 and surgical unit-2 with a sum total of 75 beds which are extended with the addition of extra beds to accommodate the load from On-Call days. Out patients' services are provided at surgical clinic, which run 6 days a week with approximately 50-100 patients seen each day. The department has been allocated 2 operation theaters, where an estimated 200-300 elective and emergency cases are dealt with each month.

Everyday morning at 8:15 AM sharp, a surgical Grand Round is conducted, which has been our tradition for last 10 years. At Weekly meeting which are held almost every Monday where presentations are given and cases are discussed amongst participants from all the PG's/MO's & house officers of surgery department. Regular workshops and courses such as on the topics of basic surgical skills, primary trauma, laparoscopic surgeries & Anastomosis are conducted frequently.

INTRODUCTION TO SURGICAL UNIT-1



Unit In charge: Prof Dr. Tahir Bashir (Head of department)

Associate Professors: Dr. Zakariya Rasheed

Senior Registrar: Dr. Rabbiya Abdul Ghani

Senior Medical officer: Dr. Afzal-Ur-Rehman

Admin Registrar: Dr. Muhammad Masood Iqbal

INTRODUCTION TO SURGICAL UNIT-2




Unit In charge: Prof Dr. Fakhar Hameed

Associate Professors: Dr. Sarwat Saqib

Assistant professor: Dr. Sultan Mehmood Khan

Senior Registrar: Dr. Adnan Ahmed

Senior Medical officer: Dr. Masood Zia

Post Graduate Residents: Dr. Sarim, Dr. Hooriya

Outcomes of the MBBS Program By the end of five years MBBS

The AZIZ FATIMAH MEICAL & DENTAL COLLEGE graduate will be able to:

- Write and report focused history, perform physical examination, formulate a diagnosis and management plan for common health problems.
- Utilize knowledge of basic and clinical sciences for patient care.
- Apply evidence-based practices for protecting, maintaining and promoting the health of individuals, families and community.
- Identify problems, critically review literature, conduct research and disseminate knowledge
- Lead other team members as per situational needs for quality health service.
- Acquire professional behaviors that embodies lifelong learning, altruism, empathy and cultural sensitivity in provision health care service

CURRICULUM OUTCOMES OF THE COURSE

Outcomes of Surgery Course:

- Acquisition of sound knowledge of general principles in surgery.
- Description of the symptoms and signs of surgical cases &their radiological appearances, laboratory studies &general plan of treatment.
- Development of problem-solving approach to common surgical problems and disorders.
- Explanation of the pathogenesis of various surgical problems, diseases and their presentations.

Competency:

By The End Of Surgery Course, The Student Should:

- Show responsible and compassionate behavior with the patient and family, considering the cultural, social and economic background, and in dealing with all levels of education and abilities.
- Use the required communication skills for taking appropriate clinical history and conducting clinical examination.
- Appreciate the role of perfect understanding of basic science (anatomy, physiology, pathology, etc. And the pathophysiological process relevant to surgical practice, in diagnosis and management of common illness in patient and community.
- Be acquainted with the epidemiological profile of the population and society, their heritage, cultural, social, geographic and economic characteristics, and relationship of all these to surgical disease etiology and management.
- Have the knowledge and skills necessary to identify the health problems of a patient in emergency situations, common endemic or epidemic diseases and disabilities, including health promotion, disease prevention, treatment, rehabilitation and follow up. opt for the wise selection of the most appropriate and cost-effective investigations to reach the proper diagnosis, considering the patient rights and abilities, and the available health system resources, weighing the pros and cons of surgical intervention.
- Interact effectively with the surgical and other health teams, and appreciate the role of others Be able to work within and leading a team, in clinical practice and continuous learning in a problem-based style

Cognitive: **Knowledge and skills to be acquired:**

By the end of this course the students should be able to:

- Reflect, through good attitudes, responsible and serious concern to the patient's problems and his family taking into consideration the moral and cultural characteristics of the society.

- Explain to the patient, honestly and in simple terms, the surgical concepts of disease and surgical interventions, and show concern for their economic and social abilities in management choice.
- Comply with the hospital system regarding uniform attendance, team work and ethical responsible behavior.
- Describe pattern of surgical disease, in various age groups, and recognize urgent surgical problems emergency and critical conditions presented to him.
- Take full medical history, with appropriate sequence and comprehensiveness in surgical ward, write it in a clear presentable way for others to read and understand.
- Asked to examine a patient; prepare the appropriate setup for physical examination, carry out the examination in appropriate manner, sequence and comprehensiveness of all systems, relevant to surgical problems, write his notes in a clear way for others.
- Select the relevant investigations regarding the available resources and cost effectiveness.
- Integrate and interpret the results obtained from skills 5, 6 & 7 to reach probable diagnosis or suggest differential diagnoses of the problem presented.
- Write an informative referral letter asking help on particular patient problem.
- Show ability and enthusiasm to promote health through health education and provision of primary health programs.
- Deal effectively and efficiently with patients at various age groups who are presenting with chronic, malignant or emergency surgical problems.
- Draw detailed plan of onsite management, transfer, resuscitation and list criteria of observing and monitoring a critically ill patient.
- Describe causes, types and management protocols of burns, including fluid therapy, pain relief, short and late consequences and their management.
- Prescribe fluid and electrolyte therapy, considering the acid-base balance of the body.
- Describe the components of blood, origin, count and functions of blood cells, techniques and risks of blood transfusion.
- Presented with any of the following real, verbal or written emergency problems; perform or suggest urgent lifesaving procedures, diagnose, manage or suggest steps of effective management of these conditions: multiple injured patients, shock, bleeding patient, coma, chest pain, cardiac arrest, convulsions, respiratory distress, acute abdominal pain, septicemia, intestinal obstruction, and diabetic ketoacidosis.

Psychomotor: **By the end of this course the student should be able to:**

- Take a detailed history from a surgical patient, relatives and others.
- Perform a complete physical examination of a surgical patient.
- Present a summary of the assigned case to a faculty member during a ward round.

Exposure to surgery is essential for all medical students for several reasons:

1. Surgical conditions are responsible for a significant proportion of elective and emergency referrals. All graduating doctors require knowledge of surgical principles and an understanding of the management of common surgical conditions for the rest of their career. A minimum level of

competency is required to ensure good care for future patients seen within any branch of medicine.

2. Surgical wards and clinics provide an excellent environment to develop those clinical skills that are required of all medical students. They provide training in general medical skills such as history taking, physical examination, diagnostic formulation and management. They also provide an environment that allows development of non-clinical skills such as communication and team-working. There are often very rapid changes in a patient's condition, allowing for immediate reinforcement of learning and reflection on intervention
3. It is more important that undergraduates have an adequate exposure to surgery during their training. The skills and knowledge gained are transferable to other interventional specialties and also are crucial to the care of patients provided by general practitioners and those in other specialties.

The final outcomes in surgical rotations include the following:

- To recognize and understand common surgical conditions.
- To recognize and understand emergency surgical presentations
- To be aware of what treatment possibilities are available, including non-operative
- To understand the principles of preoperative optimization
- To understand postoperative complications.
- To understand the types and risks of anesthetic procedures
- To be able to explain in general terms to a patient the implications of a common surgical diagnosis.
- To have sufficient basic understanding of surgery to help with future career choice

TIME TABLE

Aziz Fatima Medical & Dental Collage/Aziz Fatima Hospital
Department of Surgery
Final Year Session 2021

Sr. No	Days	Department	Time	Lecturer
1	Mon	Radiology	Lec: 14:00 to 14:45	Dr. Fatima (17th May to 16th Aug)
		Urology	Lec: 14:00 to 14:45	Dr. Sohail (23rd Aug to 25th Oct)
		Anesthesia	Lec: 14:00 to 14:45	Dr. Asif (1st Nov to 31st Nov)
2	Tues	Surg. unit 2	08:45 to 09:30	Dr. Sarwat
3	Wed	Surg. unit 1	08:45 to 09:30	Prof. Dr. Tahir
4	Thurs	Surg. unit 2	08:45 to 09:30	Prof. Dr. Fakhar
5	Fri	Orthopedic Surg.	08:00 to 08:45	Prof. Dr. Zulfiqar (5th Apr to 5th June)
		Surg. unit 1	08:00 to 08:45	Dr. Zakariya (5th June onward)

TIME TABLE FINAL YEAR

AZIZ FATIMAH MEDICAL & DENTAL COLLEGE FAISALABAD

TIME TABLE Final YEAR MBBS
CLASS SESSION 2020-21
(Physical Classes)

DATE	1	2	3	4	5	6	7
	08 00 - 08 45	08 45 - 09 30	09 30 – 10 30	10 30 – 11 30	11 45 – 13 30	13 30 - 14 00	14 00- 14 45
Monday, October 4, 2021	CLASS TEST - Obstetrics & Gynaecology		Paediatrics Topic: Hematology Teacher: Dr Shakil Ahmad	Ward-Surgery Ward-Gynae & Obs. Case Presentation Topic: APH.PPH Teacher: Dr Shazia Ward-Pedriatics Ward-Medicine	Ward-Surgery Ward-Gynae & Obs. Case Presentation Topic: malignant ovarian disease Dr Aalia Ward-Pedriatics Ward-Medicine	Break	Surgery Topic: Teacher: Dr. Zikria
Tuesday, October 5, 2021	Medicine Topic: Headache, Lesion localization Teacher: Dr Rizwan Rasul Khan	Surgery Topic: Teacher: Prof. Fakhar	Ward-Surgery Ward-Gynae & Obs. Case Presentation Topic: Dummy practice Teacher: Dr Nadia Ward-Pedriatics Ward-Medicine	Ward-Surgery Ward-Gynae & Obs. Case Presentation Topic: postmenopausal bleeding Teacher: Dr nazia Ward-Pedriatics Ward-Medicine	Ward-Surgery Ward-Gynae & Obs. Case Presentation Topic: management of normal labour and complications Teacher: Dr Nazia Yasmin Ward-Pedriatics Ward-Medicine		Paediatrics Topic: Hematology Teacher: Dr Shakil Ahmad
Wednesday, October 6, 2021	Medicine Topic: Hemiplagia Teacher: Dr Rizwan Rasul Khan	Urology Topic: Teacher: Dr. Sohail	Ward-Surgery Ward-Gynae & Obs. Case Presentation Topic: analgesia in labor Teacher: Dr Aalia Ward-Pedriatics Ward-Medicine	Ward-Surgery Ward-Gynae & Obs. Case Presentation Topic: operative vaginal delivery Teacher: Dr raheela Ward-Pedriatics Ward-Medicine	Ward-Surgery Ward-Gynae & Obs. Case Presentation Topic: instruments and surgical procedures Teacher: Dr Shazia Ward-Pedriatics Ward-Medicine		Gyne and obs Topic: malignant disease of vulva and vagina Teacher: DrRaheela
Thursday, October 7, 2021	Gyne and obs Topic: maternal and perinatal mortality Teacher: Dr nazia mussarat	Paediatrics Topic: Hematology Teacher: Dr Shakil Ahmad	Ward-Surgery Ward-Gynae & Obs. Case Presentation Topic: hysteroscopy. colposcopy Teacher: Dr nazia Yasmeen Ward-Pedriatics Ward-Medicine	Ward-Surgery Ward-Gynae & Obs. Case Presentation Topic: workup of pt with subfertility Teacher: Dr Nadia Ward-Pedriatics Ward-Medicine	Ward-Surgery Ward-Gynae & Obs. Case Presentation Topic: major gynaecological surgeries Teacher: Dr nazia mussarat Ward-Pedriatics Ward-Medicine		Medicine Topic: Psychiatry Teacher: Dr Subhan Ansari
Friday, October 8, 2021	Surgery Topic: Teacher:	Medicine Topic: Hemiplagia Teacher: Dr Rizwan Rasul Khan	Ward-Surgery Ward-Gynae & Obs. Case Presentation Topic: Ward test Teacher: Dr Nazia mussarat Ward-Pedriatics Ward-Medicine	Ward-Surgery Ward-Gynae & Obs. Case Presentation Topic: Teacher: Dr Ward-Pedriatics Ward-Medicine	Ward-Surgery Ward-Gynae & Obs. Case Presentation Topic: Teacher: Dr Ward-Pedriatics Ward-Medicine		

Dr. Mohi Ud Din

Assistant Professor CM

Prof. Dr. Noor Akbar Sial
Principal AFMDC

CC: Concerned HODS/Teachers, SAD, Exam. Dept, All Notice Board

TIME TABLE 4TH YEAR

AZIZ FATIMAH MEDICAL & DENTAL COLLEGE FAISALABAD
TIME TABLE 4th YEAR CLASS SESSION 2020-21 (Physical Classes)

DAY	1 08 00 – 08 45	2 08 45– 09 30	3 09 30–10 15	4 45	5 12 45	6 13 00 – 13 30	7 13 30 – 14 15	8 14 15 – 15 00
**********	CLASS TEST–Eye Topic: Teacher:		Community Medicine Topic: Cholera Teacher: Dr. Mansab Ali	Topic: Disinfection Dr. Nudma			Topic:Viral Hepatitis Teacher: Dr Kashif	Community Medicine Topic: MCH Teacher: Dr. Mohiuddin
**********	ENT Topic:Acute and chronic tonsillitis, Tonsillectomy	Peads Topic: Nephrotic Syndrome Teacher: Dr	Pathology Topic: Types of Breast Carcinoma Teacher: Dr. Iram	Topic: Environmental Health 2 Dr. Somayya			Community Medicine Topic: MCH Teacher: Dr. Mohiuddin	Pathology Topic: Breast carcinoma staging and stromal tumors
**********	ENT Topic:Bengin lesions of oral cavity Teacher:Dr.Muhammad Saleem	Community Medicine Topic: Cholera Teacher: Dr. Mansab Ali	Pathology Topic: Viral Hepatitis Teacher: Dr. Kashif	Topic: Epidemiological Tools Prof. Dr. Humayun		Zohar Prayer	Pathology Practical Topic: Fibrocystic diseases Teacher: Dr Madeeha	
**********	Surgery Topic: Trauma Teacher: Dr Sultan	EYE Topic: Chemical Injuries Teacher: Dr.Nasir Yasin	Pathology Topic: Auto immune hepatitis Teacher: Dr Kashif	Topic: School Health Services Prof. Dr. Humayn			Pathology Tutorial Teacher: Dr Iqra Topic: portal hypertension, cirrhosis,Acute liver failure Benign epithelial lesions breast,CA breast risk factors and pathogenesis (assigned	
**********	EYE Topic: Ocular Trauma Teacher: Dr. Nasir Yasin	Community Medicine Topic: MCH Teacher: Dr. Mohiuddin	Medicine and Allied Topic: Inflamatory Bowel Disease	Topic: Family Planning Dr. Mohi-Ud-din			Jumma Prayers	Self-Study / Mentoring

Dr. Noor-i-Kiran

Prof. Dr. Noor Akbar Sial

TIME TABLE 3RD YEAR

[**AZIZ FATIMAH MEDICAL & DENTAL COLLEGE FAISALABAD**
TIME TABLE 3rd Year CLASS SESSION 2020-21

DATE	1	2	3	4	5	6	7	8
	08 00 - 08 45	08 45- 09 30	09 30-10 15	10 15-11 00	11 15- 12 45	13 00- 13 30	13 30- 14:15	14:15-15:00
##########	CLASS TEST-Forensic Medicine		Pharmacology Topic: Intro to SNS Teacher: Dr. Farida	Pathology Topic: N. gonorrhoeae Teacher: Dr. Iram	Practical A: Pharma Topic: Dosage calculations Teacher: Dr. Ramsha B: Pathology Topic: Pathological Calcification Teacher: Dr Madeeha C: F. Med Topic: Corrosives Dr Asma	Zohar Break	Practical B: Pharma Topic: Dosage calculations Teacher: Dr. Sarwat C: Pathology Topic: Pathological Calcification teacher: Dr Madeeha A: F. Med Topic: Corrosives Teacher Dr Asma	
##########	EYE/Behavioural Sciences Topic: Roberts model of crisis intervention Dr. Subhan	Behavioral Sciences Topic: conflict resolution Dr. Subhan	Tutorial A: Pharma Topic: Muscarinic agonists/blockers Dr. Maria/Dr. Zaib B: Pathology Topic: Streptococci, Neisseria meningitidis, mediators and outcome of inflammation Dr amna C: F. Med Topic: PBL Dr Khurram, Dr Asma		Practical C: Pharma Topic: Dosage calculations Teacher: Dr. Ramsha A: Pathology Topic: Pathological calcification Teacher: Dr Madeeha B: F. Med Topic: Corrosives TeacherDr Asma		Pathology Topic: Chronic inflammation Teacher: Dr. Usman	Forensic Medicine Topic: Autopsy and Exhumation Teacher: Dr Khurram
##########	Medicine and Allied Topic: diarrhea Teacher: Dr. Mubarak Ali	Pharmacology Topic: Adrenergic agonists Teacher: Dr. Sarwat	Tutorial B: Pharma Topic: Muscarinic agonists/blockers Teacher: Dr. Maria/Dr. Zaib C: Pathology Topic: Streptococci, Neisseria meningitidis, mediators and outcome of inflammation Teacher: Dr amna A: F. Med Topic: PBL Teacher: Dr Khurram, Dr Asma		Ward Clinical Methods		Pathology Topic: Bacillus, Clostridium Teacher: Dr. Iram	Forensic Medicine Topic: Autopsy and Exhumation Teacher: Dr Khurram
##########	Surgery and Allied Topic: Teacher:	Forensic Medicine Topic: Autopsy and Exhumation Dr Khurram	Tutorial C: Pharma Topic: Muscarinic agonists/blockers Dr. Maria/Dr. Zaib A: Pathology Topic: Streptococci, Neisseria meningitidis, mediators and outcome of inflammation Dr amna B: F. Med Topic PBL Dr Khurram, Dr Asma		Ward Clinical Methods		Pathology Topic: Chronic inflammation Teacher: Dr. Usman	Pharmacology Topic: Adrenergic agonists Teacher: Dr. Sarwat
##########	ENT/Behavioral Sciences Topic: Breaking bad news Teacher	Pathology Topic: Chronic inflammation Teacher: Dr. Usman	Forensic Medicine Topic: Autopsy and Exhumation Teacher: Dr Khurram	Pharmacology Topic: Adrenergic agonists Teacher: Dr. Sarwat	Ward Clinical Methods		Jumma Prayer	SDL/mentor meeting

Dr. Noor-i-Kiran
Asst. Professor
DME

Prof. Dr. Noor Akbar Sial
Principal-AFMDC

SYLLABUS OUTLINE

Department of Surgery

Aziz Fatimah Medical & Dental Collage

Aziz Fatimah Hospital

Lecture Schedule Surgical Specialties:

Sr.	Department	Lecture Schedule Date & Time	Lecturer
1	Radiology	17th May to 16th August Every Monday Lecture: 14:00 am to 14:45	Dr. Fatima Imran
2	Urology	23rd August to 25th October Every Monday Lecture: 14:00 am to 14:45	Dr. M. Sohail
3	Anesthesia	1st November to 31st November Every Monday Lecture: 14:00 am to 14:45	Dr. Asif Alamgir

Aziz Fatima Medical & Dental Collage/Aziz Fatima Hospital
Teaching Schedule of Department of Surgery
M.B.B.S (3rd, 4th, 5th Year)

Sr.#	Lecture Topics	Lecturer	Class
1	Basics and Principles of Surgery	Dr. Rabbiya Ghani Dr. Adnan Ahmad	3rd Year
		Dr. Sultan Mehmood	4th + 5th Year
2	Alimentary System	Dr. Sarwat Saqib (Lower GIT) Dr. Zakariya Rasheed (Upper GIT)	5th Year
3	Genito-Urinary System	Dr. Muhammad Sohail	5th Year
4	Hepatobiliary & Pancreas	Prof. Dr. Tahir Bashir	5th Year
5	Endocrine & Breast	Prof. Dr. Fakhar Hameed	5th Year
6	Chest	Dr. Sarwat Saqib	5th Year
7	Cardio-vascular System	Dr. Sarwat Saqib	5th Year
8	Plastic & Reconstructions	Prof. Dr. Tahir Bashir	5th Year
9	Neuro Surgery	Prof. Dr. Tahir Bashir	5th Year
10	Operative Surgery	Prof. Dr. Tahir Bashir Prof. Dr. Fakhar Hameed	5th Year
11	Orthopedic Surgery	Prof. Dr. Zulifqar Ahmad	5th Year
12	Anesthesiology	Dr. Asif Alamgeer	5th Year
13	Radio Diagnosis & Imaging	Prof. Dr. Fatima	5th Year
14	Radiotherapy	Prof. Dr. Fatima	5th Year
15	Paediatric Surgery	Prof. Dr. Fakhar Hameed	5th Year
16	Spleen	Prof. Dr. Tahir Bashir	5th Year
17	Abdominal wall, Hernia, Umbilicus	Dr. Zakariya Rasheed	5th Year

SYLLABUS SURGERY

Distribution of Subjects:

Paper I: General Surgery, Surgical Anatomy, Principles of Anesthesia,

Principles of Radiology, Principles of Radiotherapy and Chemotherapy.

Paper II: Systematic and Operative Surgery: Musculoskeletal system, GIT,

Renal system, Male and female reproductive system, Head and Neck, Thorax,

Breast, Nervous system, Cardiovascular System, Orthopedics and

Traumatology.

The course outline is as follows:

Systems and the Diseases:

Head, Face and Neck

1. Developmental abnormalities of face, palate, lips.
2. Principles of management of head injuries and its complications.
3. Oral cavity including tongue.
4. Diseases of salivary glands (Inflammation, Calculus, Tumors)
5. Neck lumps including lymph nodes, thyroid and parathyroid

Breast

1. Diseases of the breast, nipple and areola
2. Benign and malignant tumors.

Chest Wall & Thorax

1. Blunt & penetrating injuries and their complications.

2. Lung abscess and empyema thoracis.

3. Tumors and cysts in the lungs.

Gastro Intestinal Tract

1. Diseases causing esophageal obstruction.

2. Peptic ulcer disease & its complications.

3. Tumors of stomach.

5. Conditions causing chronic abdomen including malignant lesions of small and large bowel

6. Ano-rectal and peri-anal conditions requiring surgery.

Abdominal, Pelvic and Genital Trauma and Hernia.

1. Principles in management of abdominal pelvic and urogenital trauma.

2. Inguinal/ Inguinoscrotal and femoral hernia.

3. Epigastric hernia/umbilical/ para-umbilical hernia.

4. Incisional hernia.

Liver

1. Trauma.

2. Obstructive jaundice.

3. Liver abscess.

4. Hydatid cyst.

5. Malignancy (Hepatoma & secondaries).

Gall Bladder

1. Acute and chronic cholecystitis.

2. Cholelithiasis and its complications.

3. Tumors

Pancreas

1. Acute, relapsing and chronic pancreatitis.

2. Pancreatic masses including cysts

3. Benign and malignant neoplasia.

Spleen

1. Trauma

2. Surgical aspects of spleen

Urinary Tract

1. Common congenital anomalies.

2. Infection & its sequelae.

3. Calculus disease and its sequelae.

4. Bladder lesions.

5. Enlarged prostate.

6. Urogenital trauma.

7. Neoplasms of kidney and urinary tract.

External Genitalia, Male and Female

1. Developmental abnormalities.

2. Common pelvic conditions

Scrotal and testicular lesions

1. Scrotal swelling.

2. Testicular swelling.

Skin & Soft Tissues

1. Common benign and malignant skin lesions.
2. Wounds/ulcers/abscesses/sinuses/fistulae.
3. Soft tissue lumps.

Orthopedics and Trauma

1. Common congenital malformations of locomotive system.
2. Bone fractures & their complications.
3. Sports injuries and afflictions of tendons and bursae.
4. Bone and joint infections.
5. Arthritis.
6. Bone and cartilage tumors.
7. Spinal trauma.
8. Spinal tumors.
9. Common spinal deformities and other surgically correctable lesions.

Vascular and Nerve Disorders

1. Vascular afflictions and limb ischemia.
2. Varicosities
3. Deep venous thrombosis.
4. Peripheral nerve injuries

Essential Skills to be acquired

1. Provide First Aid: Resuscitation (ABC) of polytrauma, CPR.
2. Collect samples of blood, urine, stool, sputum, pus swab etc.
3. Insert Naso-gastric tube, have observed chest intubation and paracentesis.
4. Do IV cannulation, have observed CV-line insertion and cut- down of veins.

5. Catheterize male and female patients.

6. Prepare the patient for and know the procedure of doing X-Ray chest, abdomen, KUB, bones, IVU, barium studies, ultrasound and other imaging investigations.

7. Principles of pre-operative preparations, sterilization/disinfection techniques.

8. Principles of wound care, skin suturing and suture removal, incision tissue lumps, needle biopsies, aspiration of localized fluids, etc.

9. Have observed common surgical procedures, treatment of fracture/ dislocation and methods of general / local anesthesia.

10. Apply bandage and splint/pop cast to the patient's limbs.

11. Have observed instillation of chemotherapy and principles of radiotherapy.

(I) ORTHOPAEDIC SURGERY & TRAUMATOLOGY

The course outline is as follows:

a. Necessary Applied Basic Sciences with Reference to Orthopedics:

• Pathophysiology of trauma and shock.

• Mechanical properties of bone & soft tissue.

• Biomechanics of fracture.

• Healing & repair (bone & soft tissues).

• Healing principles of fracture.

• Principles of physiotherapy

• Orthotics – orthopedic appliances to support and correct deformities

• Prosthesis – artificial substitute for missing body parts.

b. Systems and Diseases

1: Congenital & Development Diseases; Congenital talipes equino varus (CTEV) and talipes valgus; congenital dislocation of hip (CDH); flat foot; Perth's disease; Slipped Capital Femoral Epiphysis.

Specific required skills:

• Clinical examination and x-ray interpretation of above-mentioned diseases

• Observe the manipulation/application of POP cast for CTEV, pelvic harness, Von Rosen splint, hip spica.

2: Bone dysplasia (defect intrinsic to bone)

• Dwarf- Achondroplasia

3: Bone and joint infections

• Acute osteomyelitis and septic arthritis.

• Chronic osteomyelitis.

• Tuberculous arthritis/Caries spine.

• Osteolysis/bone cyst, sequestrum, periosteal reaction Specific required skills

• Clinical examination for above mentioned diseases

• Interpretation of related x-ray and laboratory reports

• Observe or assist in joint aspiration, curettage and sequestrectomy, drainage of abscess etc.

4: Metabolic Bone diseases

• Rickets; osteomalacia; osteoporosis; hyperparathyroidism; diabetes.

Specific required skills

• Interpretation of related X-rays

• Interpretation of laboratory reports of serum Ca, PO4, Alk. phosphatase, parathormone.

• Management of diabetes with relation to injury /surgical procedure and infections.

5: Neuromuscular disorders

• Muscular dystrophies e.g., Duchenne type and Becker's type; spina bifida; cerebral palsy.

• Post-polio paralysis (PPP); neurofibromatosis

Specific required skills

• Clinical examination of sensations, deep tendon jerks, muscle power and tone clonus.

• Management suggesting and explaining of orthosis, walking aids (walking stick, crutches, walkers), wheel chairs.

6: Bone Tumors

a. Benign

Exostosis/multiple hereditary exostosis/enchondroma, fibroma,

lipoma, neuroma, osteoid osteoma, giant cell tumor.

B. Malignant

Osteogenic sarcoma, Ewing's sarcoma, chondrosarcoma, multiple myeloma, metastatic bone tumors from thyroid, lungs, kidney, breast and prostate.

c. Principles, indications, techniques and orthotics related to amputation.

Specific Required Skills

• Observe biopsy – needle and open.

• Observe amputation/limb salvage surgery –

7: Neck Pain, Low Back Pain and Sciatica

• Deformities of scoliosis, kyphosis.

• Spinal injury, soft tissue injuries (sprains, strains etc.)

• Fractures (stable, unstable), neurological damage Specific Required Skills

• Examination and basic management.

• Application of cervical collar, cervical traction, lumbosacral corset.

• Observe internal fixation of spinal fracture

• Log rolling, prevention of bed sores, bladder care/catheter care and rehabilitation.

8: Arthritis and Musculoskeletal Painful Disorders

• Rheumatoid arthritis, ankylosing spondylitis, osteoarthritis.

• Gout; frozen shoulder; tennis elbow, plantar fasciitis, trigger finger, de Quervains disease.

Specific Required Skills

• Clinical examination of patients with arthritis (differentiate on x-ray)

• Interpretation of related investigations; x-rays and laboratory.

• Management; prescription writing for arthritis and painful muscle disorders.

9: Soft Tissue Injuries

• Sprains/ruptures of muscles, ligaments, tendons; nerve injuries.

• Arterial injuries clean/contaminated wounds.

10: Fractures

• Basic and advanced trauma life support

• Triage of injured patients in emergency room,

• Principles of fracture classification

• Principals of fracture treatment in children.

• Principals of fracture fixation

• Management of common orthopedic emergencies.

• Mal-united fractures; non-unions.

Specific Required Skills

• Examination; clinical examination of injured patient; record BP, pulse rate, respiratory rate peripheral pulses and capillary filling; recognition of associated injuries/complications

e.g., Vascular, neurological, vascular compartment syndrome etc.

• Investigations; request and interpret urine and blood examination in trauma patient (CBC, ESR, blood urea and

sugar etc.; interpret x-ray of limbs with fractures and dislocations;

• Catheterize male and female patients.

• Shifting of patient from bed to trolley

• Serving patients with bed pan and urine bottle.

• Prepare patients for surgeries and post operative care.

• Dressing of surgical wounds post operatively.

• Pass nasogastric tube.

• Injections I/V and I/M.

• Interpret and explain the urine, stool and blood findings with relevance to orthopaedical diseases.

• Request and interpret x-rays, ultrasound, CT, MRI scans

• Management; provide first aid to a person with bone injury like common sprains, fractures and dislocations (immobilization of body part, resuscitation of injured patient.

• Apply dressings, splints, plasters and other immobilization techniques in fracture patients in emergency; maintain clear airway of patient; reductions and observation of surgical fixations; internal and external fixation of fractures (plates, nails others); manipulation and application of plaster of Paris cast/back slab; use of external fixators in treatment of open fractures; application of traction skin/skeletal.

RECOMMENDED BOOKS:

- Short Practice of Surgery by Bailey and Love's
- Text Book Of Surgery by Ijaz Ahsan
- General Surgery (Lecture Notes Series) by Harold Ellis, Roy Calne, Chris Watson
- An Introduction to the Symptoms and Signs of Surgical Disease by Norman Browse
- Current Surgical Practice: by Norman L. Browse, Alan G. Johnson
- Schwartz's Principles of Surgery by F. Charles Brunicardi, Dana K. Andersen, Timothy R. Billiar, and David L. Dunn
- Online Journals and Reading Materials through HEC Digital Library Facility.

(II) ANAESTHESIOLOGY

The course outline is as follows:

• Pre-operative assessment of patients and pre-medication

• Local anesthesia

o Local anesthetic agents (pharmacology)

o regional anesthesia (spinal and epidural)

• Intravenous anesthetic agents

• Muscle relaxants

• Inhalational anesthetic agents

• Anesthesia and associated diseases.

• Complications of anesthesia.

• Perioperative management.

• Cardiopulmonary Resuscitation. CPR.

• Recovery from anesthesia. Pain management and postoperative care.

LOG BOOK

The submission of a complete logbook duly signed by Head of Department should be compulsory to appear in final professional examination.

PROCEDURES

1. pre-operative assessment of the patient.

2. I/V cannulation and Intra-operative fluid management.

3. Demonstration of induction of general anesthesia and tracheal intubation.

4. Demonstration of spinal block.

5. Demonstration of epidural block.

6. Demonstration of local blocks in Eye, ENT and General Surgery.

7. Demonstration of CPR.

8. post-operative care/pain management.

9. Introduction to the ICU.

10. Demonstration of anesthesia machine and other instruments

11. Demonstration of sterilization procedures in O.T and ICU.

12. Demonstration of vital sign monitors and their application

RECOMMENDED BOOKS:

1. Textbook of Anesthesia by G. Smith and A.R. Aitken head

2. Short Practice of Anesthesia by M. Morgan, G. Hall. Latest edition

3. A Synopsis of Anesthesia by J. Alfred Lee

4. Online Journals and Reading Materials through HEC Digital Library Facility.

(III) RADIOLOGY

The student will be able to:

• Select/advice the required radiological examination correctly

• Identify gross abnormalities in the films

• List indications and advantages of modern techniques

• Recognize major abdominal viscera and their imaging characters Required Radiological Examinations and Abnormalities

• Plain Radiography

Chest

• Normal anatomy and projections

• Pneumothorax

• Pneumonia

• Effusion

• Cardiomegaly

• Pulmonary oedema

• Fractures

• Surgical emphysema

• Neoplastic Diseases

• Chronic inflammatory disease

Skull

• Normal anatomy and projections

• Fracture

• Lytic and sclerotic lesion

• Calcifications

• Pituitary fossa

• Paranasal sinuses

Abdomen

• Normal anatomy and projections

• Renal & urinary tract stones, gall stones and other calcifications

• Free gas under diaphragm, (perforation)

• Enlarged liver and spleen

Spine

• Normal anatomy and projections.

• Disc space reduction

• Vertebral collapsearium Meal and with double contrast (where applicable)

• Normal anatomy and various projections

• Gastric outlet obstruction

• Stomach mass/filling defect

• Esophageal outline/varices/strictures

• Intussusception

• Colonic defects

• Malabsorption pattern

• Stricture

• Any filling defects

• Ulcerative colitis

• Intravenous Urogram

• Hydronephrosis and renal masses

• Micturating Cystourethrogram

• Reflux

• Cholecystogram

• Gall bladder diseases and stones

• Echocardiogram

• Be able to interpret the report

• CT Scanning

• Be able to interpret the report

• MRI

• Basic principle

RECOMMENDED BOOKS:

1. Aids to Radiological Differential Diagnosis by Chapman S. and

Nakielny R. 4th ed. Elsevier Science Limited; 2003.

2. Online Journals and Reading Materials through HEC Digital Library Facility.

LEARNING OBJECTIVES OF SURGERY

FINAL YEAR M.B.B.S

TOPIC	LEARNING OBJECTIVES
ESOPHEGUS	The student should understand the Anatomy and Physiology of Esophagus
	Should know the Investigations of Esophagus
	Should know about GERD
	Should know about Achalasia Cardia
	Should know regarding Carcinoma of Esophagus
STOMACH AND DUODENUM	Anatomy of Stomach and Duodenum
	Respective Investigation
	Discuss Peptic Ulcer Disease
	Should know about Gastric Carcinoma
	Should know about Duodenal Obstruction
SMALL AND LARGE INTESTINE	The student should understand the Anatomy and Physiology of Small and Large Intestine.
	Should be able to appreciate the Etiology and Pathology of Common Intestinal Conditions.
	Should know regarding the principles of investigations
	Should know the Non-Surgical Management of Intestinal Problems
	Should understand the principles of intestinal Surgery
	Should know regarding Multi-Disciplinary Management
	Should know the Management of Acute Surgical Problems of the Intestines
INTESTINAL OBSTRUCTION	The student should understand the Pathophysiology of Dynamic and Adynamic Intestinal Obstruction
	Should know regarding its Clinical Presentation
	Should know the causes of Intestinal Obstruction
	Should very well know the Indications for Surgery and Other Treatment options in Bowel obstruction.

BARIATRIC SURGERY	The student should understand the Morbid Obesity.
	Should know regarding the eligibility for bariatric surgery.
	Should know the currently Available Surgical Procedures.
	Should know the Outcomes and Complications
	Should know regarding the future of Bariatric Surgery
THE SPLEEN	The student should be able to understand the function of spleen
	Should know the common pathologies involved in spleen
	Should be able to appreciate the Principles and Complications of Splenectomy
	Should know regarding the Advantages of Laparoscopic Splenectomy
	Should know the Importance of prophylaxis against infection after splenectomy.
THE GALLBLADDER AND BILE DUCTS	The student should be able to understand the Anatomy and Physiology of Gall Bladder and Bile Ducts.
	Should understand the Pathophysiology and Management of Gallstones.
	Should know regarding the unusual disorders of the biliary tree
	Should know the Malignant Disease of Gall Bladder and Bile Ducts
THE PANCREAS	The student should be able to understand the anatomy and physiology of bile ducts.
	Should know regarding the Investigations of the pancreas
	Should be able to identify Congenital abnormalities of the pancreas.
	Should know the Assessment and Management of Pancreatitis.
THE VERMIFORM APPENDIX	The student should be able to understand its Anatomy
	Should know the Etiology of Acute Appendicitis
	Should be able to identify and diagnose the Clinical Presentation of Acute Appendicitis
	Should know the Investigations
	Should know regarding the evolving Concepts in Management
	Should know the Basic Surgical Techniques (Open/Laparoscopic)
	Should know the management of Post Operative Problems

	Should also know regarding the less common conditions of Appendix.
THE RECTUM	The student should be able to understand anatomy of the rectum and its relationship to surgical disease.
	Should know regarding the pathology of Diseases of Rectum
	Should be able to identify the Clinical Presentation of Diseases of Rectum
	Should know the Investigations of Diseases of Rectum
	Should know the Differential Diagnosis and Treatment of Diseases of Rectum
THE ANUS AND ANAL CANAL	The student should be able to understand anatomy of Anus and Anal Canal.
	Should know the pathology, clinical presentation and investigation of diseases of the anal canal.
	Should know regarding the Differential Diagnosis and Treatment
THE LIVER	The student should be able to understand Anatomy of the Liver
	Should be able to apprehend the signs of Acute and Chronic Liver Disease
	Should know the Investigations of Liver Disease
	Should know the management of Liver Trauma, Infections, Cirrhosis and Tumors.
URINARY SYMPTOMS AND INVESTIGATIONS	The student should be able to appreciate the major symptoms of Urological Disease.
	Should know regarding the most common investigations.
THE KIDNEYS AND URETERS	The student should know regarding the Congenital Anomalies of the Upper Urinary tract.
	Should know about the Cystic Diseases of Kidney
	Should know the Management of Trauma of Kidney and Ureters
	Should know the etiology, presentation and surgical management of obstruction to the upper urinary tract.
	Should understand the Pathophysiology of renal stone formation.
	Should know the Management of Urinary Tract Calculi.
	Should know the Management of Sepsis in the Urinary Tract
	Discuss the Clinical Presentation of Renal Tumors
	Should know regarding the Management of Renal Tumors
	The student should be able to understand the Anatomy of Bladder

THE URINARY BLADDER	Should know the Management of Bladder Trauma, incontinence and fistulae.
	Should know the Causes of Acute and Chronic Urinary Retention and Management.
	Should be able to apprehend the Types of Bladder Cancer and Principles of Management.
THE PROSTATE AND SEMINAL VESICLES	The student should be able to understand its Anatomy
	Should be able to identify the Lower Urinary Tract Symptoms
	Should know regarding the Benign and Malignant Diseases of Prostate.
	Should know the Investigations of Diseases of Prostate
	Should know the Staging of Carcinoma Prostate
	Should know the Management of Diseases of Prostate
TESTIS AND SCROTUM	The student should be able to understand Testicular Maldescent
	Should know regarding Testicular Torsion
	Should know the Management of Common Scrotal Swellings (Varicocele, Hydrocele and Epididymal Cysts)
	Should know the Management of Testicular Tumors
	Should know the Treatment of Male Infertility
URETHRA AND PENIS	The student should be able to identify the Congenital abnormalities of the urethra
	Should know the Diagnosis and Management of Urethral Trauma
	Should know the Diagnosis and Management of Urethral Strictures
	Should know Diagnosis and Management of phimosis.
	Should be able to appreciate the Principles of Management of a man with erectile dysfunction
	Should know regarding the Diseases of Penis and their surgical Management.
ELECTIVE NEUROSURGERY	The student should be able to appreciate the Pathophysiology of raises Intracranial pressure
	Should be able to identify the Common presentation of Intracranial infection
	Should know Management of intracranial infection
	Should be able to comprehend the Common Brain Tumors (Presentation, Investigation and Treatment)

	Should know the Common Pediatric Neurosurgical Presentations.
CLEFT LIP AND PALATE	Appreciate the Etiology and Classification of Cleft lip and Palate
	Should know regarding the Principles of Reconstruction of Cleft Lip and Palate
	Should know the Perioperative Care of Child
	Should be able to identify the Complications of Cleft lip and Palate and their management.
THYROID AND PARATHYROID GLANDS	The student should be able to understand the Anatomy of Thyroid and Parathyroid Glands
	Should know the Physiology and Investigations of Thyroid and Parathyroid function.
	Should know the Investigation of thyroid swellings
	Should know the Treatment of Hyper and Hypothyroidism
	Should be able to appreciate the Indications for surgery
	Should know the Investigation and Management of Hyperparathyroidism
	Should be able to identify the Risks and Complications of Thyroid and Parathyroid Surgery
THE ADRENAL GLANDS AND OTHER ABDOMINAL ENDOCRINE DISORDERS	The student should be able to understand the anatomy and function of the adrenal and other abdominal endocrine glands.
	Should know the diagnosis and management of endocrine disorders.
	Should be able to appreciate the Indications of Surgery in Adrenal and other Abdominal Endocrine Disorders.
THE BREAST	The student should know regarding the Appropriate Investigations of Breast Disease
	Should be able to identify different Breast Anomalies
	Should know regarding Benign Breast Disorders
	Should know about Carcinoma Breast and its management
CARDIAC SURGERY	The student should be able to understand the Role of Surgery in Cardiac Disease
	Should know the Role of investigation in planning surgery
	Should know the Management of Coronary Heart Disease
	Should be able to appreciate the Role of surgery in Valvular Heart Disease.
	Should know the Role of Surgery in Congenital Heart Disease

	Should know the Management of Aortic Vascular and Pericardial disease.
THE THORAX	The student should be able to understand the Anatomy and Physiology of the thorax.
	Should know regarding the Investigation of chest pathology
	Should be able to appreciate the Role of surgery in pleural disease
	Should know the Assessment of patient during Lung Surgery
	Should know the Surgical Oncology as applied to Chest Surgery.

Departmental Learning Objectives

The aim of this course is to provide community oriented & need based education so as to produce basic doctors who will be able to:

- elicit a complete clinical history & physical finding and formulate diagnosis of common surgical problems prevalent in Pakistan
- carry out necessary investigations & interpret the results
- perform minor surgical procedures and treat minor surgical problems
- recognize the major surgical problems needing specialized care, initiate the primary treatment and refer to the appropriate centers
- diagnose and provide competent primary care in surgical emergencies.
- carry out the responsibility of management in common casualties or natural calamities to offer and arrange basic life support.
- take necessary preventive & prophylactic measures in surgical patients.
- be involved in continued care & rehabilitation of surgical patients.
- deliver health education in the community with emphasis on the preventive aspects of surgical disorders.
- Demonstrate the right attitude:
  1. Patient Care
  2. Community health care
  3. Continuing medical education & research
  4. Observing the moral & legal codes of medical ethics

List of Competencies to acquire abilities to:

Clinical:

- build rapport with patients, colleagues and supporting staffs of the hospital
- take detail relevant history
- conduct thorough clinical Examination
- decide on a provisional working diagnosis
- perform and/or order relevant investigations considering the cost effectiveness
- interpret common laboratory and imaging investigations
- calculate fluid and electrolyte requirements
- evaluate and make initial management of acute trauma patient
- adopt aseptic techniques and procedures and maintain principles of sterilization

Communication:

- obtain permission before any examination and clinical procedures

- obtain informed consent for surgical procedures including organ ablation.
- appreciate right to privacy and information about the disease and its consequence

Managerial:

- provide leadership during team work
- implement time management skills
- issue certificates (discharge, death, medical and injury).
- write notes (case notes, operation notes, referrals)
- keep detail and systematic records and
- use computer and IT facilities.

Manipulative and practical skills:

- adopt universal aseptic techniques in handling surgical patient
- start IV lines
- insert NG tubes
- introduce urethral catheter and perform supra-pubic cystostomy
- drain superficial abscess
- perform per-rectal examination
- achieve control external hemorrhage
- carry out initial management of wound
- repair minor wounds
- complete primary management of fractures and arrange transfer to appropriate centers.
- apply splints, slings, POP casts and slabs, t r a c t i o n s

Subject	Lectures (*hours)*				Tutorial/ Practical /Demonstration	Clinical/Bedside teaching (hours)				Total hours	Block posting	Formative Exam	Summative Exam	
	Yr 3	Yr 4	Yr 5	Total		2Nd Phase	Yr 3	Yr 4	Yr 5					
General Surgery	36	36	135	207		12+4	40	30	180	250			Preparatory leave -15 days	Preparatory leave -15 days Exam time –30 days
Orthopedics	5	10	30	45		-	-	30	-	30				
Radiology	-	-	5	5		1	-	-		-				
Radiotherapy	-	-	8	8		-	-	-		-				
Transfusion n medicine	-	5	-	5		1	-	-		-				
Anesthesia	-	10	-	10		1	-	-		-				
Neurosurgery	-	2	5	7	200	-		30		30				
Pediatric Surgery	-	5	10	15		-	-	-	-	-				
Urology	-	5	10	15		-	-	-	-	-				
Burn Plastic Surgery	-	-	-	-		-	-	-	-	-				
Emergency & casualty	-	-	-	-		-	-	-	-	-				
Dentistry	-	-	-	-		1	-	-		-				
Total	367 hrs				200	20 wks	40	90	180	310	Total Hours			

Grand total	567 hours	310 hours	878 hours
	(Time for exam. preparatory leave and formative & summative assessment are common for all subjects of the phase)		

Distribution of teaching - learning hours Surgery & Allied Subject

Learning Objectives	Contents	Teaching Hours

Basic and Principles of Surgery Student should be able to: state the history, evolution and scope of Surgery assess and prepare patient for surgery understand the patho-physiology of trauma diagnose, treat and manage minor wounds diagnose, treat and manage surgical infections (boil, abscess, carbuncle & gangrene). diagnose and provide basic treatment for shock & hemorrhage. recognize all external hernias & their complications & initiate primary care for complicated hernias. recognize & differentiate different types of burns and initiate primary care &take measure to prevent complications. recognize fluid & electrolytes imbalance states, investigate & initiate appropriate therapy. recognize, & investigate different types of skin ulcerations. recognize, investigate & treat superficial skin tumor & cysts take appropriate measures to prevent hospital infection. understand and comply with ethical principles in clinical practice	*CORE* History, evolution and scope of surgery Approach to a surgical patient Surgical diagnostic process and techniques Surgical Infection (Boil, Furuncle, Abscess, Carbuncle, cellulites) Septicemia (causes, complications and treatment) Sinus, Fistula and cysts Wounds (classification and management) Ulcers, pressure sores Groin hernias Hemorrhage Shock Metabolic response to injury Principles of Management of Trauma Management of a severely injured patient Fluid and electrolytes balance Enteral and Parenteral nutrition	20 hours 10 hours 10 hours

	Pre operative assessment and preparation Tumors of skin Lymphadenopathy (Causes, investigations, diagnosis, biopsy) Surgical ethics *ADDITIONAL* Organ transplantation	

Final Professional Examination: Marks distribution:

Total marks – 500 (Summative)

Written = 250(MCQ-120+ SAQ 115+marks for formative assessment -25 =200)

Oral and Clinical-(OSPE 55+Clinical 170 + INTERNAL ASSESSMENT: 25 = 250)

Learning Objectives and Course Contents in Surgery

Learning Objectives	Contents	Teaching Hours

B. Systemic Surgery *1. Alimentary System* Student should be able to: investigate and diagnose the common surgical diseases of alimentary system and suggest management diagnose the acute conditions of alimentary system and initiate primary care identify the patient requiring specialty surgical intervention & refer to appropriate center take continued care of the operated patients recognize post operative complications & take appropriate measures.	CORE Complications of Peptic ulcer (Perforation, Pyloric stenosis) Upper G.I. Tract bleeding Appendicitis Intestinal obstruction; Abdominal trauma (Diagnostic and Management principles) Ruptured Spleen Ruptured liver Ruptured intestine Tongue, Lip & other oral lesions (ulcer, cancer) Esophagus Carcinoma esophagus and stricture Carcinoma stomach Neoplasm of colon and rectum Intestinal tuberculosis Anal canal Hemorrhoids, Fistula, Sinus & Fissure, Carcinoma anus Colostomy & ileostomy (indications and management) Abdominal incisions (Tutorial) ADDITIONAL Abdominal abscess Diseases of salivary glands Hiatus hernia.	5 hours 5 hours 5 hours

Learning Objectives	Contents	Teaching Hours
2. Genito-Urinary System Student should be able to- diagnose common congenital G.U. anomalies & advise / refer to appropriate centers diagnose and manage acute GU conditions like Acute retention of urine Acute epididymis- orchitis Torsion testis Paraphimosis Phimosis Acute ureteric colic Urosepsis evaluation of scrotal swelling evaluate a case of hematuria order necessary investigations, and interpret the result of investigation & suggest principles of management recognize a case of retention of urine, find out causes perform aseptic catheterization introduce suprapubic catheter describe the steps of circumcision	CORE Urinary symptoms & definitions Urological investigations and their interpretations, Developmental genitor-urinary anomalies Scrotal swelling Hydrocele Scrotal cellulitis Acute scrotal conditions Epidedymo- orchitis Torsion testis Urolithiasis (Causes, Diagnosis, Principles and modalities of treatment) Retention of urine (acute and chronic Hydronephrosis UTI Urinary tract t injury. Renal injury Urethral injury Renal Neoplasm RCC Wilms's Tumor 11 Testicular Tumor 12 BPH 13 Stricture urethra *ADDITIONAL*	20 hours 10 hours

	Male infertility Minimal Invasive Surgery in Urology	

Learning Objectives	Contents	Teaching Hours
3 Hepatobiliary & Pancreas Student will be able to: diagnose, investigate cholecystitis, cholelithiasis & Choledocholithiasis suspect pancreatitis; initiate primary case management & suggest management investigate & interpret the results in case of obstructive jaundice & suggest appropriate treatment diagnose & investigate suspected case of liver & sub-phrenic abscess & suggest appropriate treatment.	<u>CORE</u> Cholelithiasis (causes and complications) Cholecystitis (acute & chronic) Pancreatitis (acute pancreatitis) Obstructive jaundice Pancreatic tumors Liver abscess <u>ADDITIONAL</u> Hepatic neoplasm Cysts of liver Neoplasm of Gall Bladder	5 hours 5 hours 4 hours

4 Endocrine & Breast Students will be able to: assess, investigate & diagnose thyroid swelling & thyrotoxicosis and suggest principles of management diagnose & manage a case of breast abscess assess, investigate & interpret the status and diagnose a case of breast lump & suggest principles of treatment.	<u>CORE</u> *Thyroid* Goiter and Neoplasms of thyroid *Breast* Breast pain, Mastitis and Breast Abscess Fibro-adenosis and Fibroadenoma Carcinoma of breast <u>ADDITIONAL</u> Diseases of adrenal gland Diseases of Parathyroid gland	4 hours 4 hours 2 hours

Learning Objectives	Contents	Teaching Hours
5 Chest Students will be able to: assess & diagnose traumatic haemopneumo-thorax, associated injuries & introduce water seal drain in appropriate case.	<u>CORE</u> Chest injury (Hemothorax, Pneumothorax) <u>ADDITIONAL</u> Dysphagia Empyema thoracis	3 hours

Cardio-vascular System Students will be able to: recognize chronic ischaemic conditions of limbs take appropriate preventive measures & refer to specialised centre. take appropriate measure to prevent DVT recognize early cases of DVT *Plastic & Reconstructions* Students will be able to manage Burn patient and minimize their complications take any major wound care suggest measures for con. External deformity & disfiguration	<u>CORE</u> Vaso occlusive disorders Atherosclerosis, Buerger's disease Varicose vein Deep vein thrombosis <u>ADDITIONAL</u> Pulmonary embolism Angeoplasty, CABG and cardiac surgery <u>Core</u> Burn (Causes, complications and management) Skin grafting Skin tumors, Special area burns, Inhalation and electric burn	5 hours 3 hours 2 hours

Learning Objectives	Contents	Teaching Hours
Neuro surgery Students will be able to: provide primary care of head injury & Spinal injury cases. take measures to prevent complications in neuro surgical patients. involve effectively in continued care & rehabilitation of neuro surgical cases.	CORE Head injury Spinal injury Paraplegia/hemiplegia ADDITIONAL Hydro Cephalus Tumors of brain Tumors of spinal cord	2 hours 5 hours
Operative Surgery Student should be able to perform: primary & delayed primary & Secondary suture closure of wounds Circumcision Vasectomy drainage of superficial Abscess Venesection Hydrocele operation excision of superficial cysts & tumors dressing of surgical wounds	CORE Principles of Asepsis & Antisepsis Pre-operative assessment & preparation Venesection Circumcision Operation for hydrocele Repair of D.U perforation Wound care *Tutorials* Universal precautions (Scrubbing, gloving & gowning) O.T. environment & behavior Preoperative skin preparation and draping Suturing materials, Stitches	5 hours 5 hours

Learning Objectives	Contents	Teaching hours
Student should be able to: assist in common major operations & take post operative care	Common Abdominal incision Operation for inguinal hernia Drainage of abscesses Catheterization, Supra-pubic cystostomy Anastomosis Appendicectomy Cholecystectomy Gastrojejunostomy Basic principles of Laparoscopy. Additional Thyroidectomy, Nephrectomy, Mastectomy / Prostatectomy	10 hours
Orthopedic Surgery Student should be able to: apply ATLS protocol to provide resuscitation of polytrauma patient. manage simple and undisplaced factures demonstrate skill in wound excision of open fractures. demonstrate skill in: application of splints, slings, traction. application of plaster slab and cast manipulative reduction of common fracture and dislocation. aseptic technique of joint fluid aspiration. diagnose and outline treatment for acute osteomyelitis and septic arthritis identify patient for referral to appropriate center demonstrate knowledge and understanding of the basic principle of physiotherapy and rehabilitation.	CORE a) General Orthopedics Introduction to orthopedics Hard tissue trauma:- Fracture classification Principal of management of open and closed facture Fracture healing –nonunion, malunion, delayed union. Infection of bone (Acute and chronic osteomyelitis) b) regional orthopedics Upper limb Colle's' fracture Supracondylar fracture Clavicle fracture Radius Ulna fracture (Shaft) Humerus fracture (Shaft) Lower limb Fracture of Shaft of femur Fracture of Tibia fibula	5 hours 10 hours

Learning Objectives	Contents	Teaching Hours

	Regional Orthopedics Upper Limb Hand injuries and Hand Infection Lower Limb Frac true of Neck of femur Fracture of Pelvis Ankle and foot injuries Amputations Additional Dislocation – Hip, Hemarthrosis Soft tissue trauma (muscle and tendon injuries, compartmental syndrome) . Infection of joint including osteoarticular tuberculosis Mass Causality-ATLS, Disaster management. Regional Orthopedics Additional Dislocation of shoulder and elbow Pediatric orthopedics: Congenital anomaly talipes, CDH Bone tumors: Classification of bone tumor Common benign and malignant bone tumor – osteochondroma, Giant cell tumor, Osteosarcoma, Metastatic bone tumor. Spine: Tuberculosis of spine Vertebral fracture – (primary management, transportation. Principles of definitive management) Additional Tendinitis, Tenosynovitis, bursitis.	15 hrs

Learning Objectives	Contents	Teaching Hours
11. Anesthesiology Student should be able to: be aware of the safety in Anesthesia. be aware of the possible complications & management demonstrate basic knowledge and perform Cardio-Pulmonary Resuscitation (CPR) describe the scope of Anesthesia in rural environment. Practical Skills Student should be able to perform: pre-operative assessment induction intubation I/V line artificial ventilation post-operative room care	<u>CORE</u> Anesthesia as a subject: its scope, outline- present & future Anesthesia Pharmacology: Drugs: induction, maintenance, muscle relaxants Intra-operative management Post-operative management and complication General Anesthesia (G.A) Local/Regional anesthesia Management of Pain (chronic) Intensive Care Unit (ICU) Cardio-Pulmonary Resuscitation (CPR) Exposure to practical procedures (Tutorial): Pre-operative assessment Induction Endo tracheal Intubation CV line Artificial ventilation Face mask ventilation. Recoveryroom experience	10 hours

Learning Objectives	Contents	Teaching Hours
12. Radio Diagnosis & Imaging Student should be able to: demonstrate knowledge and understanding of the principles of radiology and imaging appreciate the importance of imaging as investigation & diagnosis of clinical conditions describe the hazards of radiation describe the protection measures for personal patient and the community. write proper requisition for various x-rays & imaging. *X-RAY Chest* Student should be able to: differentiate normal anatomical images from those due to pathological states, diagnose the common conditions like tuberculous consolidation, pleural effusion, pneumothorax, lung abscess, collapse, bronchogenic carcinoma. make radiological diagnosis of mediastinal masses	<u>CORE</u> Introduction of radiology & imaging including CT & MRI Hazards of radiation and protection for personals, and patients. Principles of ultra-sonography & its clinical application Plain & contrast X-Rays Interventional imaging USG <u>CORE:</u> Normal and pathological image Pneumonic and Tuberculous consolidation Pleural effusion Pneumo Thorax <u>Additional</u> Lung abscess Mediastinal mass	6 hours 2 hours

Learning Objectives	Contents	Teaching Hours
Gastro intestinal system Student should be able to: diagnose intestinal obstruction, perforation etc. recognize indications and contra-indication for barium studies e.g., meal, swallow, follow-through & enema. make differential diagnosis of stones & calcification on plain X-Ray. diagnose gastric ulcer, duodenal ulcer, growth in the stomach, esophageal cancer on barium studies. interpret the finding of cholangiogram.	<u>Core:</u> Plain X-ray findings of Acute abdomen. Indications & contraindications for barium studies. Hepatobiliary system Cholangiogram & ERCP USG of HBS and Pancreas Additional: MRCP	
Skeletal system Student should be able to: diagnose common fractures, dislocations & bone tumors bone infections with the help of X-rays *Excretory System* Should be able to: identify renal calculi in plain X-ray understand USG & IVU findings in renal stone and other renal diseases.	<u>CORE</u> Diagnosis of common fractures of upper and lower limb skull fractures Spinal fractures and caries spine osteomyelitis common bone tumors diseases of joints dislocations <u>CORE</u> X-ray KUB & IVU USG of Kidney, Ureter, Bladder and prostate	

Learning Objectives	Contents	Teaching Hours
13. Radiotherapy Students will be able to: appreciate the role of radiotherapy in the management of cancer demonstrate knowledge of radiation identify different sources of radiation refer the patients to radiotherapy department recognize common radiation hazards after primary care Students will be able to: recognize common cytotoxic drugs. refer appropriate cases for chemotherapy. recognize common complication & offer primary care.	CORE *Introduction to Radiotherapy* Radiation oncology, basic principles and practices: Aims of radiation oncology Sources of radiation, Isotopes and their mechanism of action Curative/Palliative r a d i o t h e r a p y Radiosensitivity, radio resistance, radio curability and normal tissue tolerance. Common radiation reactions and management. Medical oncology, basic principles and practice: Cell cycle and Mechanism of action of cytotoxic drugs Clinical aspect of cancer chemotherapy Complications of chemotherapy (Infection and bleeding tendency) Chemotherapy of common cancers, Common Chemotherapeutic regimes	5 hours

Learning Objectives	Contents	Teaching Hours
Students will be able to: appreciate the role of doctors in prevention and early diagnosis of cancer & referral of cancer patients. take leadership in the community to offer rehabilitative support offer follow up & terminal care of cancer patients. recognize clinical condition as which could be diagnosed by radio-isotope & interpret the results. recognize diseases requiring isotope therapy.	Prevention of common cancer: Primary prevention, Secondary prevention Early diagnosis Referral to appropriate center Palliative support and terminal care: Follow-up of cancer patients and terminal care Nuclear Medicine, basic Principles and practice: Radio-isotope in diagnosis Radio-isotope in therapy	1 hour 1 hour 1 hour

Learning Objectives	Contents	Teaching Hours
14. Paediatric Surgery Students will be able to: identity common paediatric surgical problems including emergencies. initiate primary care refer the cases to appropriate hospital	CORE Examination of a child and neonate (Special considerations) Infantile Inguino scrotal swellings Acute abdomen in infants & children Congenital hypertrophic pyloric stenosis Neonatal/Infantile intestinal obstruction Intussusception Anorectal malformations. Undescended Testis Torsion Testis Hemangioma and other Cutaneous lesions Child-hood tumors. Rectal bleeding and prolapsed rectum Tutorials Cystic hygroma, Branchial fistula Phimosis/balanitis Paraphimosis	5 hours

	Phimosis/balanitis Paraphimosis	10 hours

PRACTICAL LIST

Mandatory Skills to be learnt by Medical Graduates Skill No.

- Blood Pressure Measurement
- Blood Sampling
- Injections
- Aseptic measures
- Venous cut down
- Foley's catheterization
- Structures and Knots
- Basic Life Support & ASLT
- Lumber Puncture
- Venous Cannulation
- POP & Bandages
- FNAC
- Episiotomy
- Normal and Instrumental delivery
- Breech delivery
- Tracheotomy
- Endotracheal intubation
- True Cut Biopsy

List of Short and Long Cases

Short Case

1. Lipoma
2. Hernia (Inguinal)
3. Carbuncle
4. Parotid
5. PUH (Para umbilical hernia)
6. Goiter
7. Varicose Vein
8. Hydrocele
9. Dysphagia
10. Hypersplenism
11. Cervical lymphadenopathy
12. Carbuncle
13. Hepatomegaly
14. Abdominal mass

Long Case

1. Diffused toxic G
2. CA Breast
3. MNG
4. Cholelithiasis
5. Acute Cholecystitis
6. CA Stomach
7. CA Esophagus
8. Appendicitis
9. Diabetic Foot
10. Thyroid
11. Varicose Vein
12. Limb Ischemia
13. Hemorrhoids
14. Fissure in ano
15. Fistula
16. CA Rectum

17. CA Colon
18. Hypersplenism
19. Cervical lymphadenopathy
20. Carbuncle
21. Hepatomegaly
22. Abdominal mass
23. Dysphagia
24. CA Pancreas
25. Diabetic foot
26. Acute Pancreatitis
27. Foot Ulcers
28. Intestinal perforation

LEARNING METHODOLOGIES

Topic Name	Lecturer
PART 1: BASIC PRINCIPLES	
1 Metabolic response to injury	Dr. Rabbia
2 Shock and blood transfusion	Dr. Rabbia
3 Wounds, healing and tissue repair	Dr. Adnan
4 Tissue engineering and regeneration	Dr. Adnan
5 Surgical infections	Dr. Adnan
6 Tropical infections and infestations	Dr. Rabbia
7 Basic surgical skills and anastomoses	Dr. Rabbia
8 Principles of laparoscopic and robotic surgery	Dr. Adnan
9 Principles of Paediatric surgery	Prof. Dr. Fakhar Hameed
10 Principles of oncology	Prof. Dr. Fakhar Hameed
11 Surgical audit and research	Dr. Adnan
12 Surgical ethics and law	Dr. Adnan
13 Human factors, patient safety and quality	Dr. Rabbia
Improvement	Dr. Rabbia
PART 2: INVESTIGATION AND	
DIAGNOSIS	
14 Diagnostic imaging	Dr. Fatima Imran
15 Gastrointestinal endoscopies	Dr. Fatima Imran
16 Tissue and molecular diagnosis	Dr. Fatima Imran
PART 3: PERIOPERATIVE CARE	
17 Preoperative cares including the high-risk	Dr. Sultan Mahmood
surgical patient	
18 Anesthesia and pain relief	Dr. Asif Rasheed
19 Nutrition and fluid therapy	Dr. Adnan / Dr. Rabbia
20 Postoperative cares	Dr. Sultan Mahmood
21 Day case surgery	Dr. Sultan Mahmood
PART 4: TRAUMA	Dr. Adnan
22 Introduction to trauma	Dr. Adnan
23 Early assessment and management of severe	
trauma	
24 Traumatic brain injury	Prof. Dr. Tahir Bashir
25 Neck and spine	Dr. Sultan Mahmood
26 Maxillofacial traumata	Dr. Sultan Mahmood
27 Torso trauma	Dr. Sultan Mahmood
28 Extremity trauma	Dr. Sultan Mahmood
29 Disaster surgery	Dr. Sultan Mahmood
30 Conflict surgery	Dr. Sultan Mahmood
PART 5: ELECTIVE ORTHOPAEDICS	
31 History taking and clinical examination in	Prof. Dr. Zulfiqar Ahmad
musculoskeletal disease	Prof. Dr. Zulfiqar Ahmad
32 Sports medicine and sports injuries	Prof. Dr. Zulfiqar Ahmad
33 The spine	Prof. Dr. Zulfiqar Ahmad
34 Upper limb	Prof. Dr. Zulfiqar Ahmad
35 Hip and knee	Prof. Dr. Zulfiqar Ahmad
36 Foot and ankle	Prof. Dr. Zulfiqar Ahmad
37 Musculoskeletal tumors	Prof. Dr. Zulfiqar Ahmad
38 Infection of the bones and joints	Prof. Dr. Zulfiqar Ahmad
39 Paediatric orthopedics	Prof. Dr. Zulfiqar Ahmad

PART 6: SKIN AND SUBCUTANEOUS	
TISSUE	
40 Skin and subcutaneous tissue	Prof. Dr. Tahir Bashir
41 Burns	Prof. Dr. Tahir Bashir
42 Plastic and reconstructive surgery	Prof. Dr. Tahir Bashir
PART 7: HEAD AND NECK	
43 Cranial neurosurgeries	Prof. Dr. Tahir Bashir
44 The eye and orbit	Prof. Dr. Tahir Bashir
45 Cleft lip and palate: developmental	Prof. Dr. Tahir Bashir
abnormalities of the face, mouth and jaws	
46 The ear, nose and sinuses	Prof. Dr. Tahir Bashir
47 Pharynx, larynx and neck	Prof. Dr. Tahir Bashir
48 Oral cavity malignancies	Prof. Dr. Tahir Bashir
49 Disorders of the salivary glands	Prof. Dr. Tahir Bashir
PART 8: BREAST AND ENDOCRINE	
50 The thyroid gland	Prof. Dr. Fakhar Hameed
51 The parathyroid glands	Prof. Dr. Fakhar Hameed
52 The adrenal glands and other abdominal	Prof. Dr. Fakhar Hameed
endocrine disorders	
53 The breast	Prof. Dr. Fakhar Hameed
PART 9: CARDIOTHORACIC	
54 Cardiac surgeries	Dr. Sarwat Saqib
55 The thorax	Dr. Sarwat Saqib
PART 10: VASCULAR	
56 Arterial disorders	Prof. Dr. Tahir Bashir
57 Venous disorders	Prof. Dr. Tahir Bashir
58 Lymphatic disorders	Prof. Dr. Tahir Bashir
PART 11: ABDOMINAL	
59 History and examination of the abdomen	Associate Prof. Dr. Zakariya Rasheed
60 Abdominal wall, hernia and umbilicus	Associate Prof. Dr. Zakariya Rasheed
61 The peritoneum, omentum, mesentery and	Associate Prof. Dr. Zakariya Rasheed
retroperitoneal space	
62 The oesophagus	Associate Prof. Dr. Zakariya Rasheed
63 Stomach and duodenum	Associate Prof. Dr. Zakariya Rasheed
64 Bariatric and metabolic surgery	Prof. Dr. Fakhar Hameed
65 The liver	Prof. Dr. Tahir Bashir
66 The spleen	Prof. Dr. Tahir Bashir
67 The gallbladder and bile ducts	Prof. Dr. Tahir Bashir
68 The pancreas	Prof. Dr. Tahir Bashir
69 The small intestine	Prof. Dr. Tahir Bashir
70 The large intestine	Prof. Dr. Tahir Bashir
71 Intestinal obstructions	Prof. Dr. Tahir Bashir
72 The vermiform appendix	Prof. Dr. Tahir Bashir
73 The rectum	Prof. Dr. Tahir Bashir
74 The anus and anal canal	Prof. Dr. Tahir Bashir
PART 12: GENITOURINARY	
75 Urinary symptoms and investigations	Associate Prof. Dr. Muhammad Sohail
76 Kidneys and ureters	Associate Prof. Dr. Muhammad Sohail
77 The urinary bladder	Associate Prof. Dr. Muhammad Sohail
78 The prostate and seminal vesicles	Associate Prof. Dr. Muhammad Sohail
79 Urethra and penis	Associate Prof. Dr. Muhammad Sohail
80 Testis and scrotum	Associate Prof. Dr. Muhammad Sohail
PART 13: TRANSPLANTATION	
82 Transplantation	Prof. Dr. Fakhar Hameed
Fundamental principles in the operating theatre	Prof. Dr. Fakhar Hameed

and the importance of global health	Prof. Dr. Fakhar Hameed
Operative Surgery	Prof. Dr. Fakhar Hameed

3rd year MBBS

General surgery from 3rd year MBBS.

Each week has one lecture every Tuesday and students come to hospital on each Tuesday and Wednesday.

Lectures

Timings: 08.00 am to 08.45 am each Thursday

Location: 3rd year lecture hall

Topics: principles of surgery

Instructor: D. Rabbiya & Dr. Adnan

Clinical skills lab

On specified Tuesday and Wednesday, there will be skills lab sessions in college skill lab will be announced in the time table.

Ward schedule

Timings: 11.40 am to 01.00 pm

Location: Aziz Fatimah hospital

Contents: lumps and bumps

Surgical cases in OPD and wards

- Focus will be on acquiring basic surgical skills in history taking and examination. Dr Masood Zia will be responsible for routine classes unless specified in the time table.
- Students will take history and present to their tutor which will be discussed in the group in class room. Regarding physical examination. students will be visited by the tutor during history and examination will be demonstrated to them on bed side.
- Students are also supposed to attend routine ward dressings done during the specified time and examine the different wounds and ulcer.

Observed patient contacts:

The students take history, physical examination and then cases are discussed with the tutor. Tutor discusses the history and examination findings for in patients and make differential diagnosis.

Role of the students with clinical supervisor

Students are expected to take the patient history. Perform relevant examination, formulate differential diagnosis, suggest relevant investigations, outline its management plan and present it to the clinical supervisor. The clinical supervisor discusses the case individually or in group and makes correction, if any. **The students should get his cases signed by the clinical supervisor in his/her Logbook.**

Formative and summative assessments:

- Regarding lectures, there will be one monthly test in the last week of each month. Topics covered in the preceding weeks of the month will be covered in the exams.
- In the ward, daily students will have formative assessment with feedback and end of rotation ward test will be summative assessment.

4th YEAR MBBS

In 4th year, weekly schedule is as follows.

Lectures:

Timings: 08.45 am to 09.30 am

Venue: lecture hall 4th year MBBS each Thursday

Instructor: Dr Sultan, assistant professor of surgery

TOPICS; principles of surgery, Trauma and ATLS protocols, chest and thorax, endocrine

Ward schedule

Timing: 10.50 am – 01.00 pm from Monday to Friday

Location: Aziz Fatimah hospital, Department of Surgery

Contents: weekly schedule as decided and surgical cases in OPD and Wards

Focus will be on acquiring basic surgical skills in history taking and examination. In 4th year, more stress will be towards diagnosing the patients and suggesting appropriate investigation. Dr Adnan Ahmed (SR) will be the focal person responsible for routine classes unless specified in the time table.

Students will take history and present to their tutor which will be discussed in the group in class room. Regarding physical examination, students will be visited by the tutor during history and examination will be demonstrated to them on bed side students are also supposed to attend routine ward dressing done during the specified time and examine the different wounds and ulcer. The student should get his cases (written history + examination + d/d + management) **signed by the clinical supervisor in his /her logbooks.**

Formative and summative assessments

- Regarding lectures, there will be one monthly rest in the last week of each month. Topics covered in the preceding weeks of the month will be covered in the exams.
- In the ward, daily student will have formative assessment with feedback and end of rotation ward test will be summative assessment.

5th YAR MBBS

In 5th year, weekly schedule is as follows.

Lectures:

Timings: each Monday from 02.00 pm to 02.45 pm

And from Tuesday to Friday from 08.45 to 09.30 am

Venue: lecture hall Aziz Fatimah hospital 1st floor

TOPICS: special surgery

Instructor: Prof. Dr. Tahir Bashir, Prof. Dr. Fakhar Hameed, Assoc. Prof. Dr. Zakariya Rasheed, Assoc. Prof. Dr. Sarwat Saqib

Ward schedule

Timing: 10 am – 01.30 pm from Monday to Friday

Location: Aziz Fatimah hospital, Department of surgery

Contents: Weekly schedule as decided & surgical cases in OPD and Wards.

Focus will be on acquiring basic surgical skills in history & examination & making differential diagnosis. In final year more stress will be towards diagnosing the Patient suggesting appropriate investigations, interpretation of clinical findings, investigations & managing the patient. Batch is further divided into in

Students will take history and Present to their tutor which will discussed in the group in class room. Regarding physical examination, students will be visited by tutor during history & examination will be demonstrated on them on bedside.

Students are also supposed to attend routine minor procedure like dressing, blood sampling, maintaining IV line & catheterizations during specified time & examine the different wounds and ulcers. The student should get his cases (written history + examination + d/d + Diagnosis + management) **signed by the clinical supervisor in his /her logbooks.**

Formative and summative assessments

- Regarding the lectures, there will be one monthly test in the last week of each month. Topics covered in preceding weeks of the month will be covered in the exams.
- In the Ward, Daily, students will have formative assessment with feedback & end of rotation named as Ward Test which will be the summative assessment.

TABLE OF SPECIFICATIONS FOR SURGERY

SURGERY PAPER-1 FINAL PROFESSIONAL

MCQ PAPER

50 MCQs of 01 marks each *Time allowed 01 hour*

Sl No.	Topic	No. of Questions
1.	Surgical anatomy	3
2.	Wounds, Tissue repair and Scars	3
3.	Accident and Emergency Surgery; Warfare Injuries	3
4.	Fluid, Electrolyte and acid base balance;	3
5.	Blood transfusion and shock	3
6.	Nutrition	3
7.	Wound infection	3
8.	Special infections; AIDS; Sterile precautions	3
9.	Tumors, Cysts, Ulcers and Sinuses	3
10.	Burns	3
11.	Skin Lesions; Skin Grafts and Flaps	3
12.	Arterial disorders	3
13.	Venous disorders	3
14.	Lymphatic disorders	3
15.	Principles of Anesthesia and Pain management	3
16.	Principles of radiology	3
17.	Principles of radiotherapy and chemotherapy	2

SURGERY PAPER-1 FINAL PROFESSIONAL

SEQ PAPER

10 SEQs of 5 marks each *Time allowed 02 hours*

Qs No.	Content
1.	Surgical anatomy
2.	Wounds, Tissue repair and Scars; Accident and Emergency Surgery; Warfare Injuries
3.	Fluid, Electrolyte and acid base balance; Blood transfusion and shock
4.	Nutrition
5.	Wound infection; Special infections; AIDS; Sterile precautions
6.	Tumors, Cysts, Ulcers and Sinuses; Burns; Skin Lesions; Skin Grafts and Flaps
7.	Arterials, Venous and Lymphatic Disorders
8.	Principles of Anesthesia and Pain management
9.	Principles of radiology
10.	Principles of radiotherapy and chemotherapy

SURGERY PAPER-2 FINAL PROFESSIONAL

MCQ PAPER

60 MCQs of 01 marks each *Time allowed 02 hours*

S. No.	SYSTEM	Contents	No. of Qs
I.	**Musculoskeletal system (6)**	Fractures & dislocations- General principals	1
		Fractures & dislocations- Upper Limb	1
		Fractures & dislocations- Lower Limb	1
		Other diseases of bone, joints and related tissues	2
		Hand & foot	1
II.	**Upper GIT (14)**	Esophagus	2
		Stomach & duodenum	2
		Liver	2
		Spleen	2
		Gall Bladder & Bile ducts	2
		Pancreas	2
		Peritoneum, omentum, mesentery and retroperitoneal space	2
III.	**Lower GIT (12)**	Small & Large intestine	2
		Intestinal Obstruction	2
		Vermiform Appendix	2
		Rectum	2
		Anus and anal Canal	2
		Hernia, Umbilicus and Abdominal Wall	2
IV.	**Urogenital system (10)**	Kidneys And Ureter	2
		Urinary bladder	2
		Prostate and Seminal Vesicles	2
		Urethra And Penis	2
		Testes and scrotum	2
V.	**Head and neck (4)**	Thyroid Gland and Thyroglossal tract	1
		Parathyroid and adrenal glands	1
		Salivary glands	1
		Others	1
VI.	**Thorax (4)**	Chest trauma	2
		Others	2
	Breast (4)	Malignant diseases	2

VII.		Benign diseases	2
III.	**Nervous System (2)**	Head, spine and nerve injuries	1
		Others	1
IX.	**Heart and Great Vessels (2)**	Heart	1
		Great Vessels	1
X.	**Oro dental (2)**	Maxillofacial injuries	1
		Others	1

Note: Atleast five questions from S. No. II to VII will be of Operative Surgery

SURGERY PAPER-2 FINAL PROFESSIONAL

SEQ PAPER

13 SEQs of 5 marks each *Time allowed 02 hours*

Sl No.	Contents	No. of Qs
1.	Musculoskeletal system	1
2.	Upper GIT	2
3.	Lower GIT	2
4.	Urogenital system	2
5.	Head and neck	1
6.	Thorax	1
7.	Breast	1
8.	Nervous System	1
9.	Heart and Great Vessels	1
10.	Oro dental	1

Aziz Fatimah Medical & Dental College Faisalabad

Clinical Teaching Evaluation-by Students

Name of Department: _____

Subject Taught: _____

Date: _____ **From:** _____ **To:** _____

Scale Rating: 1= Strongly Disagree 2= Disagree 3 = Neutral 4 = Agree 5 = Strongly Agree

In following table tick an appropriate choice for each point:

S. No:		1	2	3	4	5
1)	At the start of my clinical rotation learning objectives were clear.					
2)	Our teacher makes sure that we learn each and every clinical case within given period of clinical rotation by making proper schedule.					
3)	I have the opportunity to see and follow a variety of different patients in my clinical rotation.					
4)	Our teacher makes sure that we had complete command on history taking.					
5)	Our teacher makes sure that we learn each and every clinical method on our rotation.					
6)	The whole department faculty members were adequately involved in teaching during my clinical rotation.					
7)	My teacher provided me with sufficient feedback on my performance.					
8)	My time during my clinical rotation was productive.					
9)	At the end of rotation, our performance was assessed against the learning objectives.					
10)	Overall, I am satisfied that my clinical rotation and I feel it prepared me so that I independently take history and can make diagnosis of patients.					

Any suggestion(s):

_____

_____

To be returned to HOD DME in Hospital and in Department of Medical Education by HOD in College.

Aziz Fatimah Medical & Dental College Faisalabad

Feedback Form

(To be filled by students)

Name of Facilitator: _____ MBBS Year_____

Topic: _____ Lecture/Practical/Tutorial/Dissection *(please tick one)*

Subject: _____

Date: _____ Day: _____ Time: _____

Scale Rating: 1= Strongly Disagree 2= Disagree 3 = Neutral 4 = Agree 5 = Strongly Agree

In following table tick an appropriate choice for each point:

S. No:		1	2	3	4	5
1)	Learning objectives were clearly mentioned					
2)	Overall learning session was interactive					
3)	Audio-visual aids were appropriately used					
4)	Tutor used appropriate questioning					
5)	Tutor appeared in control					
6)	Tutor generated interest					
7)	Appropriate eye contact was used					
8)	Time was appropriately utilized					
9)	Would like more sessions from the facilitator					
10)	Overall quality of tutorial					

Any suggestion(s):

_____

_____

NOTE TO STUDENTS:

DID YOU KNOW?

- Your input is voluntary and anonymous
- Your feedback enhances teaching quality
- Course reviews will take into account your opinions
- Your input helps strengthen the learning experience

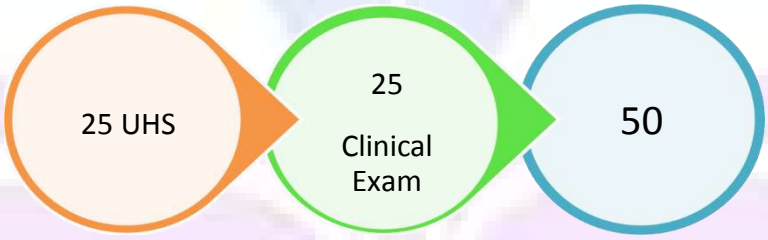
To be returned to Department of Medical Education by HOD.

ASSESSMENT METHODOLOGIES

FINAL YEAR MBBS SURGERY UHS MARKS SCHEME			
Written	**250**	**Clinical**	**250**
Paper I	100	OSPE	55
Paper II	125	Long Case	70
Internal Assessment	25	Short Cases	25×4=100
		Internal Assessment	25

Distribution of Internal Assessment Marks

- Internal assessment will include the attendance record must be 80%, class tests, Ward tests & student overall performance



Current UHS Scheme =Total 50*		
Academics 70%= 35 marks	**Ward Attendance 20%=10marks**	**Behavior 10%= 5 marks**
Ward Test 20%=10 marks	>90%=10% = 10 marks	Exemplary 10%= 5 marks
Send up 50%=25 marks	86-90%=7%= 7 marks	No mention of problems 08%= 4 marks
	81-85%=5%= 5 marks	Problems noted by teacher but not reported 06%= 3 marks
	76-80%=2%= 2 marks	Disciplinary Punishment awarded 0%= Nil marks
	75% and less=0%= Nil mark	

GENERAL STANDARD OPERATING PROCEDURES

1. CLINICAL PRACTICE GUIDELINES FOR THE EMERGENCY ROOM (ER)

- The patient comes to the ER.
- If the patient is critically ill, he/ she is shifted on a trolley or wheel chair to the SMO office by the ward boy deputed for this purpose.
- The reception clerk registers the patient and give an ER slip.
- The SMO examines the patient first. If the patient is critically ill or needs general surgery consultation, he refers the patient to General Surgery Unit on call.
- The senior resident examines the patient first.
- Obtains and records vitals before taking any history. If there is cardio-respiratory compromise, begin resuscitation as per ACLS/ ATLS protocols, following the sequence of Airway, Breathing and Circulation.
- After thorough history and examination, the resident properly documents his findings, management and diagnosis.
- The House Officer is responsible for ensuring that all the investigations are carried out, the patient receives all the prescribed medications/injections, blood is arranged and where necessary, NG tube and catheter is passed.
- All serious patients are admitted in the ER for observation and treatment. Any unstable patient is not referred to the OPD.
- The consultant on call is duly informed.
- Any unstable patient is not shifted for X-rays, Ultrasound, FAST Scan or CT scan UNLESS STABILIZED. Such patients are accompanied by a doctor when sent to the radiology department.
- Intubated patients may be shifted with an oxygen cylinder or with ambo bagging being carried out by House surgeon.
- Serious patients needing immediate surgical intervention are shifted immediately to the OT with the consultant on call being informed immediately by the senior resident.
- Bed is arranged in the Surgical ICU for all critical patients.
- If bed in not available, it is properly documented. Keep all patients with surgical emergencies NPO (nil per oral) till further decision.
- Ensure that informed written consent is taken before surgical intervention.
- Request any consultations needed for the patient on the ER slip. If necessary, pursue the consultation yourself, particularly in poly trauma cases.
- The attendants of the patient are thoroughly counseled regarding the condition, progress and prognosis of the patient.
- Senior residents and registrar undertake frequent rounds and admit patients requiring admission.
- No patient is retained in the ER longer than 4 hours.
- In case of expiry, the death certificate is prepared by a PGT.

- If the patient is being discharged, treatment is clearly mentioned on the ER slip and signed by the PGT/SR.
- House Officers are not allowed to discharge any patient.
- All local procedures, including chest tube insertion is undertaken in the minor OT under strict aseptic conditions.
- There should be no unnecessary delay in local procedures.
- All procedures including suturing is carried out by the doctors.
- Bed is arranged in the Surgical ICU for all critical patients. If bed in not available, it is properly documented.
- The ER slip of all admitted patients contains the bed number and treatment orders for the duty doctor and staff in the ward.
- The details of all patients are recorded in the ER register for audit purposes.
- Every patient has right to choose his/her consultant.

2. CLINICAL PRACTICE GUIDELINES FOR OUT-PATIENT DEPARTMENT (OPD)

- Each patient arriving at the OPD is first register himself at the Registration Counter so that he receives an OPD Slip.
- If the patient does not need any investigations or the opinion of the senior doctor, the doctor sitting in filter clinic discharges the patient after ensuring the appropriate treatment. However, if the patient is not satisfied and insists on seeing the specialist, he may then be referred with the remarks about his request.
- All patients are thoroughly seen and all history and examination findings are properly documented on the OPD slip. Any referrals are mentioned clearly.
- If consultation with another department is required, the reason for consultation is mentioned clearly.
  The patient needing routine investigations and/or special investigations about which the filter clinic doctor is confident, is sent to the concerned diagnostic department after filling in appropriate request form bearing the personal details of patient along with the brief history and the reason for the request.
- House officers and PGTs are present in the male and female Filter Clinics. Every patient is seen on his/her turn in the Filter Clinic.
- They are supervised by the SR.
- The OPD nurse and attendant identify all serious patients so that they can be seen on a priority basis and then referred to the ER.
- The OPD attendants and nurses ensure that all patients have their OPD slip and that it is stamped, before seeing the doctor. They are responsible for allocating turns to the patients to maintain proper order.
- All prescriptions are written in clear hand writing, preferably in block letters. They are properly signed so that it is obvious which doctor has seen the patient.
- The patients who need senior consultant opinion are referred after taking the history and if necessary, after preliminary investigations. Doctor accompanies the referred patient to discuss the case with the consultant.
- All cases that need admission are discussed with the consultant. All admissions are done by the consultant him/ herself or by a nominee assigned by him/her.
- All efforts are made to admit the serious patients/patients with suspected carcinoma, given the limited number of beds. The condition of the patient is explained to the relatives.
- When admitting a patient, procedure of admission is explained to the patient, bed and ward number are written on the OPD slip and the initial treatment to be administered.
- A patient who is already given an appointment for possible admission is given priority over new patients.

- All elective surgery appointments are given from the filter clinic, recorded on the Elective Surgery Register. The appointment date which is given to the patients means the date of possible admission. This is subject to the availability of beds in the wards.
- Appointments are also prioritized on medical grounds. Some operative procedures are recommended at a certain age/stage and not before that, so appointments are issued accordingly. These factors are explained to the patients and their attendants.
- For patients being called for a local procedure on the next OT day, blood CP and Hepatitis B, C HIV serology is advised
- Poor patients are referred to the Social Welfare Department for arrangement through Zakat fund/Bait-ul-Maal.
- The pharmacists provide an updated list of available drugs in each OPD clinic.
- The OPD timings are from 8 AM to 2 PM. Duty doctors report on time, in proper attire.
- Every patient has right to choose his/her consultant.

3. CLINICAL PRACTICE GUIDELINES FOR INDOOR PATIENTS

- The staff on duty is responsible for making the file of the new admission, after the bed number has been mentioned on the OPD or ER slip of the patient. After all beds got occupied, extra beds are arranged for new admissions. Once extra beds also got occupied, then patients are managed on trollies and straight chairs.
- The Resident of the respective bed takes a thorough history, performs detailed examination, makes a provisional diagnosis and plan of management. He documents these as Resident notes. He/ she also makes entries on the treatment sheet which include the generic name of the drug, the dosage regimen, route of administration and date of initiating the drug.
- The house officer of the respective bed also documents the history and carries out all baseline investigations that include Blood CP, LFTs, RFTs, Serum Electrolytes, PT/ APTT, Hepatitis B, C serology, CXR, ECG in patients over 40. After the baseline investigations are complete, he/ she ensures that anesthesia fitness of the patient is carried out and consent is taken.
- The house officers are responsible for the maintenance of the patient file and for carrying out all the investigations, consultations, dressings and other orders, as mentioned in the consultant round.
- All PGTs and house officers document their daily morning progress notes before the consultant round begins. The notes are written in the SOAP format.
- The PGT on duty enters the progress notes of all patients after the evening round. The house officer on duty helps to carry out all investigations, consultations and dressings.
- Any change in the medication during the rounds is documented appropriately in the patients file as well as the treatment book of the nurses. In case of change of dosage, previous orders are cancelled and new orders are written, instead of over-writing.
- Every patient has right to choose his/her consultant.
- The IV fluid orders include the name of fluid, volume, rate of administration (drops or ml/min), the date and time of initiation.
- Consultations from other departments are properly documented in the files with date and time.
- In case of new admission during the evening or night hours, the PGT on duty informs the concerned specialist and take advice regarding the management, especially in complicated cases.
- In case the patient's clinical condition deteriorates, senior doctor on duty is informed immediately. details of patient condition are documented.
- Clinically unstable patient is transferred to the Intensive care Unit (ICU). In case of non-availability of space in ICU, other local hospitals with the necessary facilities are contacted and patient is offered with the option to shift there if bed is available, in

collaboration of hospital administration. Non availability of space in the ICU is documented in patient's file.

- In case of any emergency procedure, a written informed consent is always taken and preserved for record. All procedure notes are up to date. Procedure notes is the responsibility of the doctor carrying out the procedure.
- Discharge planning begins with admission. The patient's attendants are informed beforehand so that they can arrange transportation.
- The discharge certificates are made carefully by the house officers. Relevant clinical features, diagnosis, investigations and treatment given in the hospital. is written. Also details of treatment advised including doses and duration of therapy and time of follow-up visit. If the patient is being discharged on request, it is mentioned clearly on discharge slip.
- The discharge certificates are clearly signed and counter checked by the registrar.
- Families requesting for short leave or premature discharge are solely responsible for the consequences. Documentation is done in the patient file.
- The patient's file is a hospital property and a confidential document. Under no circumstances should it be handed over to patients' attendants.
- Only one attendant can stay with the patient. Other people can visit the patient during the visiting hours only. Children under twelve are not allowed to visit the patients.
- The PGT or house officer of the respective bed presents the bed in the morning, apprising the consultants and the rest of the doctors, of the patient's condition, any new complaints, abnormal investigations, progress regarding previous orders and proposed further plan of action.
- The house officer and junior PGT on duty always remain in the ward with their patients.
- The OT list is decided by the consultants. The senior PGT, with the help of junior PGTs and house officers ensures that the patients are prepared, their blood is arranged and that they have the necessary surgical items checked and ready.
- The OT list is finalized by 2:00 PM on the pre-op day. Copies of the OT list are dispatched to the private wards, blood bank, operation theatre & OT head nurse.
- The PGT on duty writes the pre-op orders of all patients on OT list and counsels them regarding NPO. He performs a final check on all investigations and OT items.
- The house officer ensures that the pre-op orders are carried out by the staff, blood cross matches are sent to the blood bank and that OT dresses are provided to the patients at night.
- The house officer ensures that the first two cases have reached the OT by 7:30 AM.
- In case of an expiry, the PGT informs the senior, enter death notes on progress sheet and fill death certificate as early as possible.
- Standard barrier nursing and isolation techniques are employed in cases of patients with infectious and communicable disease.
- This includes masks, gloves and careful handling of sharp objects/ needles.
- Dressing of all doctors should be decent. No informal clothing (jeans & T. shirts for males), party wears or excessive jewelry (for females) is allowed, during duty hours.

4. CLINICAL PRACTICE GUIDELINES FOR THE OPERATION THEATRE (OT)

- Proper OT dress with mask, cap and OT shoes are worn in the operation theater area. No one is allowed to walk outside the theatre in greens and theatre shoes.
- Before the procedure, the following checks are performed by the doctors and OT nurse:
    1. The patient's identity and diagnosis are the same as documented in the accompanying file.
    2. The site and side of pathology is reassessed, reconfirmed and marked.
    3. The patient's file is in order.
    4. All OT items are present.
    5. Patient is in the correct OT dress.
    6. Pre-op orders have been carried out. The patient's blood pressure, pulse and fasting blood glucose is within.
    7. Informed consent is present.
- PGs are not allowed to perform a moderate or major surgical procedure independently. A senior resident if permitted can do the procedures under direct supervision/assistance of the consultant.
- Operation notes are written by the surgeon himself or the first assistant in a legible way with drawing of sketches.
- Post-operative orders are written clearly and in detail, mentioning the drugs with dosage, route of administration and duration of therapy.
- All operation notes conclude with correct swab, sponge and instrument count, duly signed by assisting staff nurse and operating surgeon.
- Post-operative patient is only transferred to the ward when he/she has fully recovered from anesthesia.
- Bed in the Intensive Care Unit (ICU) is arranged by surgical team, prior to operation, in case of major surgeries.

5. CLINICAL PRACTICE GUIDELINES FOR BLOOD TRANSFUSION & BLOOD BANK

- The blood requisition slip is properly filled by the duty doctor. Ward, bed number and PCN No.is entered. The name of the requesting doctor is clearly written. The blood sample is drawn by the doctor/Nurse and properly labeled.
- All patients requiring emergency blood are helped and the SMO or the treating surgical resident inform the blood bank about the patient and how much blood is required.
- The blood bank receives properly labeled blood sample and takes full written responsibility for issue of uncrossed match blood.
- Blood is always transfused by the doctor on duty. There is full identification of the patient, matching of blood bag number and blood group with that of the patient given on the receipt.
- Blood transfusion is started when it reaches room temperature.
- The vital signs of patient are recorded before initiation of transfusion. The date and time of transfusion is documented.
- If there is slightest suspicion of transfusion reaction, transfusion is immediately stopped the blood bank is informed. blood bag is returned to investigate the reason for the reaction.
- Patients/ attendants are clearly explained that blood and blood products are available on donation or exchange basis only.

6. CLINICAL PRACTICE GUIDELINES FOR LABORATORY INVESTIGATIONS

- Patients need a MR/PCN (Personal Control Number), which can be obtained from the reception.
- Appropriate files/Register are clearly labeled with the patients name and MR/PCN. Investigation slip are prepared with the patient's MR/PCN, date, patient's name, age, sex, nature of specimen, investigation required and doctor's signature & also on the IT system.
- For investigations like histopathology, history and examination findings are mentioned on investigation request form & also from ward's IT system. Without proper history and physical findings errors of interpretation may occur.
- Different types of tubes are used for collecting the specimens. Purple topped tubes are used for Complete Blood Picture (CP), ESR, Malarial Parasite and Electrophoresis. Blue topped tubes are used for coagulation studies. Yellow top jell tubes are used for all serum tests.
- Urine specimens are sent urgently as after half an hour, the specimen if not processed, becomes unsatisfactory and may yield the wrong result.
- For Blood Cultures, culture bottles are collected from the lab or store.
- The histopathology specimens are submitted in wide mouthed container containing at least five times volume of the specimen in buffered 10 % formalin.

7. CLINICAL PRACTICE GUIDELINES FOR THE PROFESSOR

- Overall supervision of patient care, academic activities and services delivered through ER, OPD and indoor facilities (wards). Is available in OPD, ward and OT during working hours.
- In charge of administrative & Academic affairs of the unit.
- Selection and recruitment of Postgraduate Trainees and House Officers.
- Supervision of clinical rounds and record keeping of the entire medical staff.
- Helping the hospital administrators in various matters of hospital interest.
- Making sure that the training program is fully compliant with recommendations of PMDC/PMC and CPSP (College of Physicians and Surgeons Pakistan).
- Representing the hospital in national and international meetings and conferences.
- Performing elective surgeries and taking lead in difficult cases. And performing major surgical emergencies when on call.

8. CLINICAL PRACTICE GUIDELINES FOR ASSOCIATE, ASSISTANT PROFESSORS AND SENIOR REGISTRAR

- Assisting in the administrative affairs of the ward and hospital, as directed by the professor.
- Support and supervision of residents and house officers.
- Supervision of clinical rounds.
- Representation in international and national conferences.
- Elective surgery and lead in difficult cases.
- The senior registrar will be the first on call consultant for emergency cases. Assistant professors will be second on call for difficult cases.
- Supervision of the medical services administered via the OPD, ER and wards.

9. CLINICAL PRACTICE GUIDELINES FOR RESIDENTS/MOs

- Is the first line of contact for patients in the ER, OPD and wards and initiates management after history, examination and provisional diagnosis.
- Is responsible for guidance and supervision of house officers. keep strict check on working of staff concerning the management, progress, intake, output, medication and general care of their patients.
- He/she immediately informs the consultant of any emergencies or mishaps.
- Assists in emergency and elective surgeries. Surgeries is performed by him/her under supervision of consultants.
- Ensures proper documentation especially daily progress notes, procedure notes, death certificates, pre and post op orders.
- Carries out pre-operative preparation of all patients on the OT list.
- Presents his /her beds during the clinical rounds.

10. CLINICAL PRACTICE GUIDELINES FOR HOUSE OFFICERS

- House officer takes the history of the patient and writes daily progress notes in SOAP format.
- Patient's file maintenance is the responsibility of the house officer.
- All house officers check patient's management, feeding, bed care, intake / output charts, and other progress charts.
- The house officers are responsible for dispatch and receipt of investigations, consultations and discharge of patients.
- The house officer is present in the ward at all times.

11. CLINICAL PRACTICE GUIDELINES FOR PROTECTION AGAINST OCCUPATIONAL RISKS

- For blood borne infections, take care to avoid needle stick and sharp injury, avoid recapping of needles and after use, transfer to a puncture proof container. For patients known to be positive for Hepatitis B, C or HIV, wear double gloves during surgery.
- To handle blood contaminated material, no touch techniques and gloves are used. Wash hands after blood contact even if gloves were worn.
- Wear gloves when in contact with blood, body fluids, excretions, secretions and contaminated items. Wash hands immediately after touching infective material.
- Use surgical masks for some protection against air borne infections.

CLINICAL PRACTICE GUIDLINES

FOR ELECTIVE CASES
IN THE OUT-PATIENT DEPARTMENT (OPD)

1. THYROID NODULE

HISTORY

- Patient comes to you complaining of a neck mass. Ask about:
- Time since it has been present?
- Whether it has experienced a phase of rapid growth over a short period of time?
- Hoarseness of voice?
- Dysphagia?
- Dyspnea? Cough?
- Pain? Especially bone pain?
- Eye symptoms? Difficulty closing the eyes? Gritty feeling in the eyes?
- Symptoms of hyperthyroidism?
- Symptoms of hypothyroidism?
- Childhood head and neck irradiation?
- Family history of thyroid cancer? Family history of benign thyroid disease? Family history of autoimmune diseases?
- Other co morbidities?

EXAMINATION

- Note patient's age and sex. Being less than 20 or greater than 70 years or being male, concurs risk of Ca Thyroid.
- Note the rate and rhythm of the pulse (look out for AF in hyperthyroidism).
- Inspect and palpate for the nature of the lump. DECIDE WHETHER THERE IS A SINGLE NODULE, MANY NODULES OR DIFFUSE ENLARGEMENT OF THE GLAND. Note the regularity of the mass.
- Check that the mass moves up on swallowing.
- Palpate the trachea.
- Palpate for cervical lymphadenopathy.
- Percuss over the sternum for retrosternal extension.
- Auscultate for a systolic bruit.
- Look for signs of Graves' Disease such as exophthalmos, lid lag, pretibial myxedema, tremor and increased tendon reflexes. These signs are NOT uncommon

INVESTIGATIONS

- Order TFTs.
- Ultrasound.
- If TFTs indicate hyperthyroidism, order thyroid scan (contra-indicated in pregnancy), available at NORI.
- Select patients for FNAB. We perform fine needle biopsy while investigating all nodules especially those greater than 1 cm, hypothyroid patients (cold nodules) or irregular masses.
- Plain radiograph of the chest and thoracic inlet when symptoms indicate retrosternal extension.
- CT Scan after discussing the case with your consultant.
- Autoimmune antibody profile in case of strong suspicion, after discussion with the consultant.
- ECG

TREATMENT

- For euthyroid patients with benign masses, date for elective surgery is given. Option of radioactive iodine ablation available at NORI is offered.
- For hyperthyroid patients, Carbimazole (Neo Marcazole) 20mg BD or Propylthiouracil (Procarbizole) 200mg BD is prescribed. These patients are followed in the OPD. The aim is euthyroidism. Date for elective surgery is given after this is achieved.
- Beta blockers are given for tremors and tachycardia.
- Thyroxine 50mcg is prescribed for hypothyroid patients. These patients are followed until euthyroid. Date for surgery is given after this is achieved. BEWARE! Prescribe thyroxine with caution in patients with pre-existing heart disease.
- Patients with diagnosed Ca Thyroid are discuss with the consultant and admitted if necessary.
- Admit patients who have arrived on their turn for elective surgery.

2. BREAST LUMPS AND OTHER COMMON BREAST PROBLEMS

HISTORY

- The patient may complain of a palpable breast mass or thickening, change in the size or appearance of the breast, breast pain, skin changes, nipple discharge or inversion.
- Ask about: Any change in the general appearance of the breast, such as an increase or decrease in size? A change in symmetry?
- New or persistent skin changes.
- New nipple inversion.
- If a nipple discharge is present, whether unilateral or bilateral? Timing, color and frequency?
- The characteristics of any breast pain. The relationship of symptoms to menstrual cycles (cyclic or non-cyclic)?
- The location within the breast (or both breasts)? The duration? Whether it is aggravated or alleviated by any activities or medications.
- The presence of a breast lump (mass) and its evolution, including how it was first noted, how long it has been present and whether it has changed in size.
- Whether a lump waxes and wanes during the menstrual cycle?
- Benign cysts may be more prominent premenstrual and regress in size during the follicular phase.
- Any family history of breast cancer?
- Reproductive history e.g., parity, age at menarche, age at menopause, breast feeding, last menstrual period?
- Use of oral contraceptive pills.
- Previous breast surgery.
- Weight loss, bone pain, anorexia? Fever?
- Any other co morbidities.

EXAMINATION

- Proper consent is taken from the patient before examination. If a female surgeon is not available for examination, all male surgeons should request the presence of a female staff member.
- Note the age of the patient. The risk of cancer increases with age.
- Inspect for symmetry, masses, skin dimpling, nipple retraction and discharge, peau d'orange, erythema, warmth.
- Palpate each quadrant of the breast and the axillary tail. The size of any mass should be measured and its location, mobility, and consistency recorded.
- Perform a regional lymph node examination e.g., the axillary, the supraclavicular and the cervical lymph nodes.
- Look for mobile or fixed nodes.
- General examination for distant metastasis e.g., hepatomegaly, jaundice, ascites or pleural effusion

INVESTIGATIONS

- The objective is to exclude cancer of the breast.
- For patients with a new breast complaint, Mammography is ordered in patients ≥35 years and ultrasound in patients ≤35 years.
- FNAC or core needle biopsy in case of strong suspicion of cancer, giving the patient appointment for the next OT day.
- Triple assessment i.e., clinical examination, radiological assessment and cytology, is the minimum standard of care for a breast mass or asymmetric thickening of the breast.
- BLIs and hepatitis profile is ordered for patients being given an appointment for FNAC or core biopsy.
- Ultrasound abdomen/pelvis, CXR for suspicion of metastasis.
- CT chest and abdomen in advanced cases, after discussion with the consultant.
- ER, PR and HER 2neu, after discussion with the consultant.

TREATMENT

- Patients with cytological diagnosis of malignancy are admit for MRM.
- Patients with benign breast mass, proven on triple assessment are counsel and if desiring, given elective date for excision.
- Patients with breast abscess are referred to ER for drainage.
- Those with cyclical pain are referred to gynecology for short course of anti-estrogen treatment.
- Patients with mastitis or ductal ectasia are prescribe antibiotics, pain killers, warm compresses and are referred to ER for drainage, if deemed necessary.

3. HERNIAS

HISTORY

- The patient complaining of a bulge in the abdominal wall. Ask about:
- Site of hernia? Unilateral or bilateral?
- Time since its presence?
- Any pain or aching sensation? Local discomfort? If painful, has it suddenly become persistent and severe?
- Does the lump increase with standing and reduce with lying down?
- Previous history of surgery (incisional or parastomal) or spontaneous?
- If positive surgical history, any post op complications e.g., incision site infection?
- Nausea, vomiting, fever, SIGNS OF BOWEL OBSTRUCTION (points to suspicion of strangulation or incarceration)?
- Occupational history (heavy lifting etc.)?
- Co morbidities predisposing to hernia e.g., coughing (COPD or asthma), constipation, BPH, obesity, ascites?
- Pregnancy?

EXAMINATION

- All patients with tender hernia site, symptoms and signs of intestinal obstruction and toxic look are referred to the ER for suspicion of obstruction or incarcerated hernia.
- Examination is performed to determine the:
  1. Site of hernia i.e., inguinal, epigastric, umbilical, incisional etc.?
  2. Size? Shape?
  3. Color and temperature of overlying skin? State of surrounding tissues?
  4. Tenderness?
  5. Composition? Fluctuant or rubbery?
  6. Cough impulse?
  7. Compressibility?
  8. Reducibility?
- General examination for causes of raised intra-abdominal pressure e.g., abdominal masses,

INVESTIGATIONS

- Ultrasound and CT scan in doubtful cases or for differential diagnosis, after discussion with the consultant.

TREATMENT

- Elective date to all patients with hernias that are narrow necked, difficult to reduce, highly symptomatic or have episodes of bowel obstruction.
- Patients with hernias that are moderately symptomatic, cosmetic or interfere with work, may also be offered surgical repair.

4. BLEEDING PER RECTUM

HISTORY

- Patient is asked about the:
- Color of blood? Bright red or black?
- Amount of blood?
- Is blood mixed with feces? If so, source is higher than the sigmoid colon.
- Is blood on the surface of feces? If so, then the source of bleed is from the sigmoid colon, rectum or anal canal.
- Does bleeding FOLLOW defecation? If so, think of hemorrhoids.
- Does blood pass by itself with clots? Think of diverticular disease, IBD, rapidly bleeding carcinoma, massive upper GI bleed (rare).
- Is there blood on underwear, toilet paper or clothes? If so, think of hemorrhoids or fissure.
- Is there mucus with blood? Suggests carcinoma.
- Is there blood, mucus, abdominal pain, fever, malaise and pus? Think of colitis.
- Pain on defecation? Suggests fissure-in-ano or carcinoma of the anal canal.
- Tenesmus? Change in bowel habit? Abdominal pain? These symptoms should raise alarm.
- Symptoms of anemia, anorexia, weight loss?
- Other co morbidities e.g., previous history of IBD, colorectal polyps, BLEEDING DIATHESIS?
- Family history of colorectal cancer.

EXAMINATION

- Age of the patient is noted. Cancer is common older patients.
- Digital rectal examination is performed and proctoscopy, as guided by history.
- General examination for signs of metastasis e.g., anemia, jaundice, hepatomegaly.
- Sites of superficial lymph nodes are examined particularly inguinal region.

INVESTIGATIONS

- If there is strong suspicion of colorectal cancer, colonoscopy and biopsy is advised.
- Barium enema.
- Upper GI endoscopy for Malena.
- Blood CP for anemia and platelet count, ESR, LFTS, PT/APTT, Hepatitis B, C serology.
- Ultrasound and CT abdomen/pelvis on suspicion of metastasis, after discussing with the

TREATMENT

- All cases with heavy bleed are referred to the ER.
- Treatment will vary with the etiology.

5. HAEMORRHOIDS

HISTORY

- The patient complains of recurrent post defecatory bleeding. Ask:
- Is it bright red?
- Amount? Noticed on underwear, toilet paper or dripping into the toilet?
- Is blood mixed with stools? In hemorrhoids, it is not.
- Is there pruritis ani, mucus discharge or perianal discomfort?
- Pain? Presence of pain suggests complicated piles.
- Any features of prolapse e.g., lump appearing at anal margin after defecation that spontaneously reduces or needs manual reduction.
- Co morbidities e.g., obesity, constipation, difficult child birth?

EXAMINATION

- External examination of anal skin and DRE is performed. Look for prolapsed and thrombosed piles.
- Proctoscopy to visualize the hemorrhoids.
- Determine the degree of piles.

INVESTIGATIONS

- Barium enema and colonoscopy is advised if there is any doubt, to rule out other differentials.
- Blood CP may show anemia.

TREATMENT

- Medical treatment includes avoidance of constipation and straining with laxatives and bulking agents e.g., ispaghula husk, analgesia and sitz bath for thrombosed piles.
- Painful prolapsed hemorrhoids are referred to the team on call for injection treatment.
- Date for Elective hemorrhoidectomy is given to patients with second- and third-degree piles.

6. FISSURE-IN-ANO

HISTORY

- The patient complains of: Acute anal pain, severe on defecation.
- Pain persisting for minutes or hours after defecation, throbbing and aching in nature.
- Streak of blood on stool or underwear.
- Constipation and fear of defecation due to pain.
- Co morbidities e.g., Crohn's disease, difficult child birth.

EXAMINATION

- Gently part the skin of the anus, looking for a split in the anal skin. That is all that the patient will allow due to pain.
- Anal sphincter will be seen to be in spasm.
- If pain and tenderness is not severe, perform a careful rectal examination.

INVESTIGATIONS

- Baseline

TREATMENT

- Lignocaine gel.
- Laxative and stool bulking agents.
- 0.2% GTN ointment for sphincteric spasm BD for six weeks.
- Very rarely surgery may be needed for which patient is admitted.

7. COLORECTAL CANCER

HISTORY

- The patient may complain of: Abdominal pain.
- Tenesmus. Change in bowel habit. Mucus PR.
- Hematochezia or melena.
- Weakness.
- Symptoms of anemia without other gastrointestinal explanations.
- Weight loss.
- Abdominal mass.
- Sacral pain or sciatica.
- Family history of colorectal cancers.
- Predisposing factors such as IBD, previous history of polyps, irradiation, lack of dietary fibre.
- Other co morbidities.
- Symptoms of bowel obstruction.

EXAMINATION

- PATIENTS WITH COLORECTAL CANCER FREQUENTLY PRESENT AS EMERGENCIES WITH OBSTRUCTION, PERFORATION AND VERY RARELY ACUTE PR BLEEDING. SUCH PATIENTS ARE REFERRED TO THE ER.
- PR examination is performed for blood, mucus or a mass.
- General examination for mass, hepatomegaly, jaundice.
- Examination of superficial lymph nodes.

INVESTIGATIONS

- BLIs e.g., blood CP, LFTs, RFTs, S. Electrolytes, hepatitis serology.
- Colonoscopy with biopsy.
- Barium enema.
- Ultrasound abdomen/pelvis.
- CXR.
- CT abdomen/pelvis for staging purposes, after discussion with the consultant.

TREATMENT

- Emergency presentations are referred to the ER.
- Elective cases are admitted for detailed workup, staging, curative or palliative surgery and for multidisciplinary approach involving surgeons, oncologists and radiologists.

8. FISTULA-IN-ANO

HISTORY

- The patient may complain of: Perianal drainage of pus, mucus, blood or fecal matter. Perianal irritation. Perianal discomfort.
- Perianal swelling and skin excoriation.
- History of anorectal abscess that drained spontaneously or with surgical intervention.
- History of trauma, diabetes mellitus, Crohn's Disease, tuberculosis or anorectal tumors in rare cases.

EXAMINATION

- Examination is aimed at confirmation of the presence of a fistula, its track and its type i.e., whether inter-sphincteric, trans-sphincteric, supra-sphincteric or extra-sphincteric.
- Perineum is examined looking for an opening near the anus.
- DRE is performed, which may reveal a palpable fibrous track, pressure on which may cause discharge.
- Proctoscopy may help define an internal opening.
- Examination under anesthesia, with probing, to identify the fistula track.

INVESTIGATIONS

- MRI, after discussion with the consultant.
- Colonoscopy, if suspected association with Crohn's disease.
- Fistulogram, if available.

TREATMENT

- Surgical treatment is offered to patients and appointment is given for elective surgery.
- For patients with sepsis of the track, antibiotic prophylaxis is given.
- Referral to General Medicine if Crohn's Disease is diagnosed, for treatment of IBD.

9. RECTAL PROLAPSE

HISTORY

- The patient may complain of: Protruding mass from the anus, especially during defecation, which may reduce spontaneously or need manual reduction. Blood and mucus PR. Perianal pain. Fecal incontinence. Pruritis ani. Tenesmus.
- History of constipation, neurologic disease or difficult vaginal deliveries in female patients.

EXAMINATION

- Perineal examination. For prolapsed part between fingers. Classify into PARTIAL (involving mucosa only) or COMPLETE (involving all the layers of the rectal wall).
- Mucosal prolapse is thin and usually 4 cm long with a lax sphincter on PR exam.
- Complete prolapse is thick, up to 12 cm long and the patient may be unable to contract the sphincter muscles once prolapsed part is reduced.

INVESTIGATIONS

- None necessary. The diagnosis is a clinical one.

TREATMENT

- For mucosal prolapse, laxatives and stool bulking agents are prescribed. Appointment on next OT day is given for excision of prolapsed mucosa or submucosal sclerosants.
- Surgical repair is offered to patients with complete prolapse (perineal or transabdominal

10. DYSPHAGIA

HISTORY

Patient is asked the following questions:

- Do you have problems initiating a swallow or do you feel food getting stuck a few seconds after swallowing?
- (Helps distinguish oropharyngeal from esophageal dysphagia.)
- Do you cough or choke or is food coming back through your nose after swallowing? (Coughing or choking suggests aspiration and oropharyngeal dysphagia.)
- Do you have problem swallowing solids, liquids, or both? (Liquids not solids suggest a motility disorder; solids progressing to liquids suggests a benign or malignant stricture.)
- How long have you had problems swallowing and have your symptoms progressed, remained stable or are they intermittent? (Rapidly progressive dysphagia is concerning for malignancy.)
- Could you point to where you feel food is getting stuck?
- Do you have other symptoms such as loss of appetite, weight loss, nausea, vomiting, regurgitation of food particles, heartburn, vomiting fresh or old blood, pain during swallowing or chest pain?
- Do you have medical problems such as diabetes mellitus, scleroderma, neuromuscular disorders (stroke, multiple sclerosis), cancer?
- Have you had surgery on your larynx, esophagus or stomach? Have you received radiation therapy in the past?
- What medications are you using now (ask specifically about alendronate, ferrous sulfate, quinidine, ascorbic acid, aspirin and NSAIDs)?
- Have you ingested a corrosive substance or other foreign body? (Commonly seen in children, suicide attempts or psychiatric patients).

EXAMINATION

- Look for signs of anemia, weight-loss.
- Koilonychia (Plummer Vinson Syndrome).
- Abdominal examination for liver secondaries.
- Superficial lymph node examination.
- Check for swallowing of the patient (Swallow Test).
- Cranial nerves X to XII are examined.

INVESTIGATIONS

- The choice of investigations will depend on suspected etiology. BLIs, LFTs, RFTs.
- CXR.
- Barium swallow and meal.
- Upper GI endoscopy and biopsy.
- CT Chest.

TREATMENT

- The treatment will vary with the etiology.

12. OESOPHAGEAL TUMORS

History

- The patient may complain of:
- Dysphagia, usually rapid onset, initially for solids, then for fluids.
- Weight loss, anorexia, anemia.
- Epigastric or retrosternal pain.
- Hoarseness.
- Cough, hemoptysis, respiratory symptoms.
- Rarely neck swelling (SVC obstruction).
- Rarely symptoms of Horner's syndrome.
- History of smoking and rarely alcohol in our set up.
- History suggestive of GORD (gastro-esophageal reflux disease).

EXAMINATION

- Patient's age is noted. New complaint of dysphagia in patients over the age of 45 years is cancer until proven otherwise.
- Abdominal examination for irregular liver.
- Superficial lymph node examination.

INVESTIGATIONS

- Upper GI Endoscopy and biopsy.
- Barium swallow.
- CT Chest and Abdomen for staging purposes.
- Trans-esophageal ultrasound is available in Islamabad, useful for staging as well.
- Base line investigations.
- CXR.

TREATMENT

- All new cases are admitted for work up and possibility of curative surgery. A multidisciplinary approach involving oncologists (NORI) and surgeons will be used. For squamous cell carcinoma, radiotherapy and resection is done. For adenocarcinoma, chemotherapy and resection is used.
- Most cases are too far advanced for curative surgery and are referred to NORI for chemotherapy or radiotherapy and to Gastroenterology for stenting, thus ensuring palliative care.

14. HIATUS HERNIA

HISTORY

- Mostly asymptomatic. Usually, an accidental finding on radiological studies or endoscopy.
- Patient complaints may include:
  1. Retrosternal burning pain worse on bending, stooping or lying down.
  2. Heart burn.
  3. Acid regurgitation into the mouth.
  4. Pain relieved by antacids.
  5. Pain may even radiate to the jaw or left arm.
  6. Cough, hiccups or palpitations.
  7. Postprandial fullness.
  8. Nausea, retching.
  9. Odynophagia and dysphagia in advanced cases.
  10. Bleeding from ulceration of esophageal lining.
- Ask about co morbidities.

EXAMINATION

- Usually does not reveal any important findings.

INVESTIGATIONS

- Blood CP, which may indicate anemia.
- Barium swallow.
- CT Chest or upper GI endoscopy after discussion with the consultant.

TREATMENT

- PPIs, promotility are agents.
- Advice regarding reduction of weight, cessation of smoking and sleeping propped up.
- In patients with paraoesophageal (rolling) hernia, dysphagia and persistent symptoms are given appointment for elective surgery.
- Patients with suspected volvulus or obstruction are referred immediately to the ER.

15. ELECTIVE SPLENECTOMY

HISTORY

- Patient is usually referred from the General Medicine department for definitive treatment of:
  1. Hematological disorders such as ITP, hemolytic anemias, leukemias and lymphomas.
  2. Inflammatory disorders such as Rheumatoid arthritis, SLE or sarcoidosis
  3. Rarely, patient will have a diagnosis of splenic abscess, hydatid cyst or primary tumors

EXAMINATION

- Unremarkable in cases without splenomegaly (e.g., ITP).
- Palpable spleen in cases involving splenomegaly (e.g., leukemias).
- Tenderness in left upper quadrant.
- Jaundice and anemia in cases of hemolytic anemia.
- Fever, tachycardia in cases of abscess.
- Systemic findings characteristic of the underlying disorder e.g., characteristic joint deformities of Rheumatoid arthritis.

INVESTIGATIONS

- Blood CP.
- US Abdomen/Pelvis.
- CT Abdomen/Pelvis after discussion with the consultant.

TREATMENT

- Vaccination against pneumococcus, meningococcus and H. Influenzae is prescribed. Appointment is given at least 2 weeks after vaccination date in cases that can be delayed (e.g., ITP).
- Patient is admitted for surgical intervention.
- In cases of ITP, at least 6 units of platelets are arranged, preoperatively.

16. CHOLELITHIASIS (ELECTIVE CHOLECYSTECTOMY)

HISTORY

- If any complications of cholelithiasis such as acute cholecystitis, perforation, obstructive jaundice, cholangitis or pancreatitis is suspected, patient is referred to the ER.
- Patients coming to the OPD may present in the following manner:
  1. Asymptomatic, with gallstones discovered on ultrasound done for other indications.
  2. Patients with previous history of gallstone symptoms, complications and radiologic evidence of gallstones.
  3. Patients with recurrent biliary type symptoms especially biliary colic.

EXAMINATION

- If there is any fever, tachycardia, diaphoresis, jaundice, localized tenderness and guarding in RHC, refer the patient to the ER.
- Patients being selected for elective cholecystectomy should essentially have a benign systemic examination.

INVESTIGATIONS

- Ultrasound abdomen/pelvis if not already done.

TREATMENT

- Asymptomatic patients are counseled regarding potential complications. No intervention to be done.
- Surgery is offered to patients who have a history of recurrent biliary symptoms or previous history of complications.
- Appointment for surgery is given.
- Patients arriving on their appointment date are admitted.

17. GASTRIC TUMORS

HISTORY

- Diagnosis is suspected when the patient presents with the following complaints:
- Persistent abdominal pain, prominent in the epigastric region.
- Vague dyspepsia. New onset dyspepsia over the age of 45 should raise suspicion.
- Anorexia, nausea, weight loss and early satiety.
- Dysphagia when involving the cardiac area.
- Vomiting when involving the pyloric area.
- Symptoms of anemia.
- Rarely, upper GI bleed.
- Family history.

EXAMINATION

- Palpable epigastric mass.
- Hepatomegaly.
- Palpable left supra-clavicular lymph nodes (Virchow's node, Troisier's sign), left axillary node.
- Ascites.
- For academic purposes, look for a periumbilical nodule (Sister Mary Joseph's node), enlarged ovary (Krukenberg's tumor) or a mass in the cul-de-sac on rectal examination (Blumer's shelf).
- Rarely, paraneoplastic syndromes such as microangiopathic hemolytic anemia, membranous nephropathy, hypercoagulable states (Trousseau's syndrome), acanthosis nigricans and diffuse seborrheic keratoses.
- Signs of anemia.

INVESTIGATIONS

- Baselines particularly Blood Cp, LFTs, RFTs, ESR.
- Upper GI endoscopy with biopsy.
- Ultrasound abdomen/pelvis.
- CT Thorax/Abdomen/Pelvis for staging, confirmation of limits plastic.
- CXR.
- Barium meal.
- CEA, CA 19-9 and CA 125 tumor markers.
- Diagnostic laparoscopy is an option, which can be utilized in difficult cases.

TREATMENT

- Patient are admitted for detailed workup, staging, suitability of surgical intervention and multidisciplinary action, particularly involving oncologists.

18. PANCREATIC CANCER

HISTORY

- The patient presents with:
- Obstructive jaundice with pruritis, dark urine and pale colored stools.
- Upper abdominal pain, usually prominent in the epigastric region, that radiates to the back.
- Weight loss, fatigue, malaise, nausea and dyspepsia.
- Rarely, features of acute pancreatitis.
- Questions about other co morbidities especially recent onset of diabetes mellitus are asked.
- Family history.

EXAMINATION

- Examination may reveal: Jaundice. Epigastric mass. Hepatomegaly. Palpable gallbladder (Courvoisier's Law).
- Ascites.
- Thrombophlebitis migrans.
- Rarely splenomegaly due to splenic vein thrombosis.
- Virchow's nodes.
- Rarely, nodular fat necrosis (pancreatic panniculitis).
- DVT or peripheral arterial disease (Trousseau's syndrome) due to hypercoagulable state.

INVESTIGATIONS

- Blood CP, LFTs, ESR, Blood sugar.
- Serum CA 19-9.
- US Abdomen/Pelvis.
- CT Thorax/Abdomen/Pelvis.
- ERCP, MRCP, after discussion with the consultant.
- Ultrasound or CT guided FNAC, after discussion with the consultant

TREATMENT

- Patient is admitted for detailed work up and staging.
- Once investigations are complete, oncologist from NORI is consulted, for decision regarding palliative care or curative resection.

19. VARICOSE VEINS

HISTORY

- The patient may complain of:
- Tortuous dilated veins in the leg leading to aesthetic concerns.
- Pain or aching discomfort in the affected limb, mostly towards the end of the day, relieved by sitting with the legs elevated. Leg heaviness, edema and swelling.
- Cramps and exercise intolerance.
- Pruritis, burning sensation, numbness, tingling and skin changes in the affected limb.
- Rarely, the patient may present with the complications of varicose veins, mentioned later.
- Ask about risk factors. The most common risk factors include advancing age, family history of venous disease, increased body mass index, smoking, a history of lower extremity trauma, prior venous thrombosis, occupational prolonged standing and, in women, pregnancy.
- Ask about co morbidities especially PREVIOUS DVT, peripheral arterial disease, heart failure, diabetes, arthritis.
- In female patients take menstrual history and use of oral contraceptives. Pain due to varicose veins may be exacerbated with pregnancy, exogenous hormonal stimulation or with the menstrual cycle.

EXAMINATION

- Patient is examined while standing up. site and size of the veins. complications such as oedema, eczema, ulcers, lipodermatosclerosis, superficial thrombophlebitis, hemorrhage skin pigmentation and stasis dermatitis are assessed.
- While the patient is standing, look for cough impulse, palpable thrill or saphenovarix at saphenofemoral junction.
- Course of the vein is palpated for defects in deep fascia.
- For academic purposes, Trendelenburg's test is carried out to assess the site of incompetent veins. With the patient supine, elevate the leg, empty the veins, apply tourniquet or examining hand just below the saphenofemoral junction and ask the patient to stand. If the veins fill with the occlusion in place, then the perforators are incompetent. If the veins fill rapidly after removal of the occlusion, then the valve at saphenofemoral junction in incompetent. Repeat the test at different levels to determine the level of incompetent perforators. Once above and below the knee is usually sufficient for incompetence of mid-thigh perforators and saphenopopliteal junction, respectively.
- Perthes' walking test. Perform when raising the leg in supine patient fails to collapse the varicose veins. Apply tourniquet just below the knee. Ask patient to stand repeatedly on tip toe and relax. Failure of collapse of varicose veins may indicate DVT or reflux through incompetent valves in deep or communicating veins. Its importance is that DVT contraindicates varicose vein surgery.
- Percussion impulse is transmitted up or down the superficial veins. Auscultation to rule out arteriovenous fistula. Abdominal examination. In female patients, make sure she is not pregnant. In male patients, testicular examination.

INVESTIGATIONS

- The following tests are prescribed:
- Doppler studies.
- Duplex ultrasonography.

TREATMENT

- For patients with mild varicosities, compression stockings and elevation of the leg periodically is advised. Elective surgery is offered to patients with incompetence of saphenofemoral junction, saphenopopliteal junction and thigh perforators.
- Local stab avulsions and long saphenous vein stripping is done in our hospital.
- Compression stockings
- Sclerotherapy. Foam sclerotherapy of large veins.
- Laser surgeries. Catheter-assisted procedures using radiofrequency or laser energy. High ligation and vein stripping. Ambulatory phlebectomy, Endoscopic vein surgery

20. INTESTINAL TUBERCULOSIS

HISTORY

- ACUTE ABDOMEN IS A FREQUENT PRESENTATION IN THESE PATIENTS. THEY ARE REFERRED TO THE ER! Have a high index of suspicion for this disease as the symptoms are often vague. Suspect chiefly in young adults.
- The patient may present to the OPD with:
  1. Nonspecific chronic abdominal pain. The pain may be dull or colicky.
  2. Fever and night sweats.
  3. Anorexia, fatigue, weight loss, diarrhea, constipation or blood in the stool.
- Respiratory symptoms.
- Previous history of pulmonary TB.
- Family history of TB.
- Other co morbidities suggesting immunocompromise such as malnutrition in our setup.

EXAMINATION

- The abdominal examination may be unremarkable.
- Intestinal tuberculosis frequently involves the terminal ileum and ileocecal region. Hence a well-defined, firm, usually mobile mass may be palpable in the right lower quadrant.
- Abdominal distention.
- Ascites is frequently present.
- Fistulae or fissures on rectal examination.
- Chest signs.
- Palpable abdominal lymph nodes in the very frail patients

INVESTIGATIONS

- Consult with the seniors regarding the choice of investigations as tissue biopsy and histology is the only definitive means of diagnosis.
- CXR.
- Blood CP with Peripheral Smear, ESR, LFTs, RFTs, Serum Electrolytes.
- Tuberculin skin test.
- Sputum microscopy and culture.
- Ascitic fluid R/E.
- Abdominal X-Ray.
- US Abdomen/Pelvis.
- Barium studies.
- CT Abdomen/Pelvis.
- Intestinal tissue biopsy at laparoscopy or laparotomy.

TREATMENT

- ATT is started for diagnosed cases, with four drugs, rifampicin, isoniazid, pyrazinamide and ethambutol for the first two months. Counsel the patient that the therapy will continue from 12-18 months. Advise the patient regarding regular follow up.
- Patients with suspected complications are admitted.

21. STOMA FOLLOW UPS

HISTORY AND EXAMINATION

- Listen to patient concerns and perform examination of the stoma, whether ileostomy or colostomy, for the following complications:

1. Peristomal skin breakdown due to ulceration.
2. Effluent contact damage (irritant contact dermatitis), usually involving skin on inferior aspect of the stoma.
3. Presents as denuded skin.
4. Allergic reactions (allergic contact dermatitis), due to products used to protect peristomal skin, characterized my erythema, blistering and pruritis.
5. Mechanical trauma, presenting as denuded skin that result from repeated removal of adhesive products or overly aggressive cleansing techniques.
6. Significant stomal bleeding due to vigorous cleansing techniques.
7. Parastomal hernia formation.
8. Stomal stenosis, identified by digital examination.
9. Stomal retraction.
10. Stomal prolapse.
11. Fungal infections of peristomal skin.

INVESTIGATIONS

- Barium studies when planning stoma reversal, particularly to assess the condition of the distal bowel. Serum electrolytes.

TREATMENT

- Patient is counselled regarding stoma care, especially the importance of properly fitting stoma appliances and frequent emptying.
- Patient is taught regarding fiber rich diet and how to remove stoma obstructions.
- Counseling regarding symptoms of electrolyte balance such as dry mouth, reduced urine output, dark concentrated urine, feelings of dizziness upon standing, marked fatigue and abdominal cramping, so that adequate fluid intake is ensured.
- For skin complications, $AgNO_3$ cream is prescribed. Topical steroids for allergic complications. Antifungal powder for fungal infections.
- Discussion with the consultant if complications needing surgical revision have developed.
- If the underlying pathology that needed stoma formation has resolved, discussion with the consultant for admission and stoma reversal. The time period is usually 6 weeks to 3 months after the initial procedure.

22. SALIVARY GLAND TUMORS

HISTORY

- Common in middle aged adults. The patient may complain of:
- Painless, slow growing mass on the side of the face, neck or floor of the mouth.
- Sudden onset of pain and rapid enlargement of a pre-existing lesion. This should raise suspicion of malignancy.
- Rarely nasal obstruction, congestion, vision changes, or trismus.
- Symptoms of facial nerve involvement in parotid gland tumors.

EXAMINATION

- Position, size, shape, surface, edges of the tumor.
- Composition and consistency of the mass.
- Assessment of local extension and invasion. Carcinoma is usually fixed to underlying structures.
- Examination of the salivary gland from the inside of the mouth.
- Examination of cervical lymph nodes.
- Facial nerve examination for parotid gland tumors.

INVESTIGATIONS

- Clinical examination is very important in diagnosis.
- FNA, under ultrasound guidance, if necessary, after discussion with the consultant.
- CT and MRI, after discussion with the consultant.

TREATMENT

- Superficial parotidectomy is offered for benign tumors of parotid glands and excision of other salivary glands.
- Appointment for elective surgery is given.
- For suspected carcinomas, patient is admitted for multidisciplinary approach involving the ENT in addition to us.

23. LOWER EXTREMITY PERIPHERAL ARTERIAL DISEASE

HISTORY

- The patients are usually middle-aged adults. The patient complaints and your inquiries may include:
  1. Intermittent claudication i.e., muscle pain on exercise, relieved by rest. Usually occurs in the calf.
  2. Limitation of walking. Ask the approximate distance at which pain starts, called the claudication distance.
- Ask how long the pain has been present and if there has been gradual deterioration or improvement (collaterals).
- Rest pain, usually in distal extremities such as toes and forefoot. This suggests severe ischemia.
- Ask if rest pain prevents sleeping and if it is relieved by hanging the leg out of the bed.
- Ask about past medical history involving other areas of the vascular system such as MI, stroke, TIA.
- Ask about family history.
- Ask about risk factors such as smoking, diabetes, hypertension and hyperlipidemia.

EXAMINATION

- **INSPECTION:**
- Color of the limb. It varies from white in critical ischemia to varying degrees of pallor.
- Buerger's angle i.e., the angle to which the limb is raised before it turns white. Normal limb does not turn white even if elevated to 90 degrees. An ischemic limb will turn white on an angle between 15 to 30 degrees for 30 to 60 seconds.
- Presence of empty veins is noted i.e., guttering of veins.
- Inspection of the pressure areas for trophic changes, ulceration and gangrene.
- **PALPATION**:
- Skin temperature.
- Capillary refilling time.
- Palpation of all the pulses.
- **AUSCULTATION:**
- Along the course of the major vessels for bruits.
- Blood pressure measurement in both arms.

INVESTIGATIONS

- Blood sugar, fasting lipid profile, blood pressure.
- CXR, ECG.
- Ankle brachial pressure index (ABPI).
- Doppler studies.
- Duplex Doppler.
- Arteriography, after discussion with the consultant.

TREATMENT

- Patients with critical limb ischemia are referred to the ER.
- Patients with intermittent claudication are advised to lose weight and exercise, good glycemic control and antiplatelet agents and statins.
- Regular follow up.
- Surgery is offered with disabling claudication.
- Good analgesia and cardiac consultation if recent cardiac issue

24. INGROWING TOE NAIL

HISTORY

- Common in young males due to excessive use of feet e.g., in sports.
- The principal symptom is pain, particularly on walking. When the nail gets infected, it leads to throbbing pain and purulent discharge from beneath the lateral nail fold.
- The toe may become swollen.

EXAMINATION

- Identification of site. Big toe is commonly affected, particularly its lateral side.
- The color of the skin of the lateral nail fold is reddish blue.
- Swollen skin and nail are tender to touch.
- There is increase in bulk of the lateral nail fold.
- Rarely, inguinal lymph nodes may be enlarged, indicating long term infection.

INVESTIGATIONS

- Blood CP and Hepatitis B, C profile so that the patient can have the toe nail removed on the next elective list.

TREATMENT

- Simple nail avulsion or wedge excision is done under local anesthesia followed by anti-staphylococcal antibiotics.
- Advice regarding clipping of nails i.e., transversely and avoiding tight, pointed shoes.

25. SEBACEOUS CYSTS

HISTORY

- Most common on the scalp, face, neck and back. The patient complains of a lump in the scalp that is scratched while combing. Such scratches become infected, leading to acute enlargement of the cyst and pain.

EXAMINATION

- These cysts are tense and bulging.
- It lies in the subcutaneous fat with clear skin over it. The skin is attached to it. A punctum may be visible at this point of attachment.
- The cysts may be multiple.

INVESTIGATIONS

- Blood CP and Hepatitis B, C profile so that the patient can have the cyst removed on the next elective list.

TREATMENT

- Excision is done under local anesthesia.

26. LIPOMA

HISTORY

- Most patients present because they have noticed a lump and want to know what it is. For many patients, the lump is unsightly and also interferes with movement.

EXAMINATION

- Common in subcutaneous tissues of the upper limbs, chest, neck and shoulders.
- Usually not tender. The overlying skin is normal.
- Occur in all sizes.
- They are soft and lobulated. The lobules become prominent with gentle pressure.
- Large lipomata give the impression of fluctuation.
- Lipomata may be fixed to deep structures such as muscles or be freely mobile in subcutaneous tissue.
- It is slow growing.

INVESTIGATIONS

- For small lipomata, Blood CP and Hepatitis B, C profile so that the patient can have it removed on the next elective list.

TREATMENT

- Excision is curative.
- Tissue is sent for histopathology after excision.
- For larger lesions, discussion with the consultant and excision under GA if necessary.

CLINICAL PRACTICE GUIDLINES FOR COMMON CASES IN THE EMERGENCY ROOM (ER)

1. RIGHT ILIAC FOSSA (RIF) PAIN

HISTORY

Patient is asked about:

- Malaise
- Anorexia
- Fever
- Nausea and vomiting
- Abdominal pain starting centrally and localizing to RIF.
- Diarrhea (common and may be mistaken for acute gastroenteritis.
- Abdominal pain caused by moving and coughing.
- Resuscitation as per ATLS recommendations after referral by the SMO.
- Integrity of the airway.
- Ensure that there is no respiratory distress.
- Measurement of blood pressure and pulse.
- IV access.
- Catheterization if BP low or septic.
- If all parameters within normal range, then

PHYSICAL EXAMINATION

- Fever
- Tachycardia
- Maximal tenderness and rebound tenderness over McBurney's Point (only if appendix is in its usual place) and cough sign.
- Palpation of LIF causes worsening of pain in RIF (Rovsing's Sign).
- The Psoas Sign is indicative of a retrocecal appendix. This is manifested by right lower quadrant pain with passive right hip extension.
- The Obturator Sign is indicative of a pelvic appendix. When the clinician flexes the patient's right hip and knee followed by internal rotation of the right hip, this elicits right lower quadrant pain

INVESTIGATIONS

- Request BLIs especially Blood CP and Urine R/E.
- The diagnosis of acute appendicitis is a clinical one. However, ultrasound abdomen and pelvis should be ordered in all women of childbearing age.

TREATMENT

- NPO (non per oral) till further orders.
- IV antibiotics e.g., ceftriaxone 1g BD and metronidazole 500mg TDS.
- IV analgesics.
- Adequate fluid hydration.
- Take consent.
- If the symptoms fail to settle, appendicectomy after an NPO interval of at least 6-8 hours.

2. ACUTE EPIGASTRIC PAIN (SUSPECTED ACUTE PANCREATITIS)

WARNING: Acute Pancreatitis patients frequently need resuscitation. Vitals record and resuscitation as per ATLS recommendations after referral by the SMO. Proceed only when the patient is hemodynamically stable.

HISTORY

Patient is asked about:

- Radiation of pain (characteristic radiation to the back)
- Relief of pain (relief with bending forwards)
- Severe nausea, vomiting and anorexia
- Agitation, restlessness
- Fever
- Previous history of gall stones or RHC pain
- Alcohol use
- Drug history

EXAMINIATION

Look for:

- Dehydration
- Hypotension
- Tachycardia
- Epigastric tenderness associated with guarding and in severe cases, with rigidity.
- Left flank ecchymoses (Grey-Turner sign) and periumbilical ecchymoses (Cullen's sign), signs of hemorrhagic
- pancreatitis.

INVESTIGATIONS

- BLIs especially Blood CP, LFTs, U and E. Include in them LDH, BSR and Serum Amylase.
- Serum Lipase and AST to an outside lab (complete RANSON's criteria AT ADMISSION).
- ECG to rule out MI as a differential.
- Ultrasound abdomen to rule out gallstones in bile duct as a cause. DO NOT send the patient to the radiology department unless hemodynamically stable.
- CT scan is not usually done unless diagnosis confirmed and at least 48 hours elapsed since start of pain.
- Erect chest X-ray or lateral decubitus abdominal X-ray to rule out perforated peptic ulcer.

TREATMENT

- Patient is advised NPO till further orders.
- In severe cases, contact the Surgical ICU for availability of bed for optimized fluid balance, respiratory, cardiovascular and renal support.
- Monitoring of pulse rate, blood pressure, urine output and oxygen saturation every 2 hours.
- IV antibiotics e.g., imipenem 1g TDS.
- IV fluids, ensuring urine output at 0.5cc/kg/hr.
- Adequate IV analgesia, particularly with opiate derivatives (tramal+gravinate).
- If gall stone pancreatitis is the diagnosis, early ERCP (not available at AFM&DC). after patient is hemodynamically stable.
- Patient is admitted.
- Planning for further investigations (RANSON's criteria 48 hours after admission, CT), surgical interventions and nutrition in the ward.

3. SUDDEN ONSET RIGHT HYPOCHONDRIAL (RHC) PAIN

(BILIARY COLIC AND ACUTE CHOLECYSTITIS)

Vitals record and resuscitation as per ATLS recommendations after referral by the SMO. Proceed only when the patient is hemodynamically stable.

HISTORY

Patient is asked about:

- Characteristics of pain: In acute cholecystitis, usually severe continuous right upper quadrant pain radiating to the right flank, back and shoulder. In biliary colic, intermittent severe epigastric and right upper quadrant pain.
- Anorexia
- Nausea and vomiting
- Fever
- Association of pain with the ingestion of fatty foods

EXAMINATION

Assessment for:

- Fever
- Tachycardia
- RHC tenderness
- RHC guarding in severe cases.
- Tenderness over gall bladder during inspiration (Murphy's Sign).

INVESTIGATIONS

- BLIs especially Blood CP, LFTs, electrolytes, blood culture and Serum Amylase.
- Ultrasound abdomen for identification of stones, determining wall thickness and assessing ductal dilation.

TREATMENT

- NPO
- Place nasogastric tube if vomiting.
- IV antibiotics e.g., ceftriaxone 1gm BD and metronidazole 500mg TDS.
- IV analgesia e.g., tramal+gravinate or ketorolac (Toradol).
- IV antispasmodics e.g. No-spa (drotaverine)
- IV fluids as guided by Serum Electrolytes.
- Admission and decision regarding further management, particularly surgical, in the ward

4. ACUTE ABDOMEN

Vitals record and resuscitation as per ATLS recommendations after referral by the SMO. Proceed only when the patient is hemodynamically stable.

HISTORY

- Patient's age and sex is noted. If older than 50, specific conditions in addition to usual differentials are suspected e.g., atypical MI, mesenteric ischemia and colon cancer.
- If female of child bearing age, determination pregnancy status.
- Patient is asked about exact location of pain. This will give an idea of the possible underlying structures involved.
- Question about onset (sudden or gradual). Sudden onset suggests a serious underlying cause (organ perforation or ureteric or biliary tract obstruction).
- Constant pain of gradual onset but progressively worsening points to inflammation or intestinal obstruction.
- Intermittent pain, poorly localized suggests a colic arising from a visceral structure.
- Radiation of pain. If radiating to the back, consider retroperitoneal structures e.g., aorta, pancreas and kidneys.
- Patient is asked about the last bowel movement and its nature.
- Patient is asked about associated symptoms e.g., anorexia, nausea, vomiting, fever (PATTERN OF STEP LADDER FEVER FOR TYPHOID), abdominal distention. Look out for vomiting after the onset of pain (very common), suggesting intestinal obstruction.
- History major comorbidities (MI, pancreatitis, gallstones, cancer, hernias, TUBERCULOSIS) and surgical history (risk of obstruction and perforation).
- Drug history e.g., use of NSAIDS.

EXAMINATION

- Assessment for apprehension, anxiety, sweating, fever, tachycardia and jaundice.
- Inspection for restlessness, rigidity, distention and scars of previous surgery. Examination of the skin for herpes zoster.
- On auscultation, listening of bowel sounds for two minutes. Absence indicates peritonitis. High pitched sounds or absence with distention indicates obstruction.
- Palpation to assess for tenderness, its location, and signs of peritoneal irritation, such as involuntary guarding and rigidity.
- Examination for Carnett's sign, Murphy's sign, obturator sign, psoas sign, Rovsing's sign and Murphy's renal punch.
- Examination for the presence of any irreducible or possibly strangulated hernia.
- Testicular examination in males. In case of lower abdominal pain in females, request for Gynae consult for pelvic exam.
- Digital rectal examination for any mass, impacted feces or frank blood. Tenderness anteriorly will indicate peritonitis.

INVESTIGATIONS

- BLIs especially Blood CP, LFTs, RFTs, Serum Electrolytes, Serum Amylase, LDH, BSR, Urine R/E (in cases of possible urinary tract symptoms). Urine for β hCG in case of strong suspicion.
- Blood for cross match.
- Erect chest X-ray and X-ray erect abdomen or lateral decubitus abdominal X-ray (X-rays contra-indicated in pregnancy) if suspected perforation or obstruction.
- Ultrasound abdomen and pelvis for suspected hepatobiliary, tubo-ovarian disease, pancreatitis and abdominal aortic aneurysm.
- Emergency CT in exceptional cases after discussion with the consultant on call.

MANAGEMENT

- Frequent monitoring of vital signs.
- NPO
- I/V fluids e.g., Ringer's Lactate.
- I/V antibiotics e.g., Ceftriaxone 1g BD and Metronidazole 500mg TDS.
- NG tube is for bowel decompression.
- Urinary catheterization in critical patients.
- Adequate I/V analgesia e.g., tramal+gravinate.
- IV antispasmodics e.g. No-spa (drotaverine).
- For patients with intestinal tuberculosis, ATT must continue whether oral or I/V.
- Further management will vary with the etiology.
- Admission for further management in the ward if necessary.
- Arrangement of blood and shifting of patient to the OT for cases needing urgent surgical intervention, after taking high risk consent.

5. ACUTE PEPTIC ULCER PERFORATION

WARNING: Patients with GI perforation frequently present with shock. Vitals record and resuscitation as per ATLS recommendations after referral by the SMO. Proceed only when the patient is hemodynamically stable.

HISTORY

Ask about:

- Sudden onset upper abdominal pain.
- Constant pain that is worse with breathing and moving.
- Pain that radiates to the back or shoulders.
- Previous history of recurring dyspepsia or peptic ulcer disease.
- Hematemesis and melena.
- Nausea, vomiting and anorexia.
- Drug history e.g., NSAID use and smoking history.

EXAMINATION

Look for:

- Appearance of shock e.g., fever, diaphoresis, pallor, tachycardia, hypotension.
- Marked generalized abdominal tenderness, guarding and rigidity (classic 'Board Like' is rare).
- Decreased or obliterated normal liver dullness.

INVESTIGATIONS

- BLIs especially Blood CP, Serum Electrolytes, LFTs, RFTs, clotting profile and Blood for Cross Match.
- If patient is hemodynamically stable, erect CXR and lateral decubitus abdominal X-ray.

TREATMENT

- Treatment is surgical unless patient declines. supportive care while OT is being prepared with:
- NPO
- NG and urinary catheter.
- I/V fluids (perforated peptic ulcer patients typically respond to fluid resuscitation).
- I/V antibiotics e.g., Ceftriaxone 1gm BD and Metronidazole 500mg TDS.
- I/V PPI e.g., Omeprazole 40mg OD or if facility available, 80mg stat, then 8mg hourly.
- I/V analgesia e.g., tramal+gravinate.

6. OBSTRUCTIVE JAUNDICE (UNCOMPLICATED CHOLEDOCHOLITHIASIS, CHOLANGITIS AND CARCINOMA PANCREATIC HEAD)

Vitals record and resuscitation as per ATLS recommendations after referral by the SMO. Proceed only when the patient is hemodynamically stable.

HISTORY

Ask about:

- Epigastric and RHC pain.
- Jaundice, dark urine and pale stools
- Nausea, anorexia, vomiting, itching.
- FEVER, RIGORS AND CHILLS. Weight loss
- Previous history of gallstones and pancreatitis.
- Any history of hepatitis.
- Drug history.

EXAMINATION

Look for:

- Signs of jaundice on skin and sclera (icterus).
- RHC tenderness on palpation.
- If gallbladder is palpable (Courvoisier sign), then suspect underlying pancreatic malignancy.
- If Charcot's triad (high-grade swinging fever, jaundice and RHC pain) is complete, complicated choledocholithiasis or cholangitis is diagnosed

INVESTIGATIONS

- BLIs especially Blood CP, LFTs, RFTs, PT/APTT, HBsAg and Anti HCV, Serum Electrolytes, BSR, LDH, Serum Amylase.
- Ultrasound abdomen.

MANAGEMENT

- If uncomplicated choledocholithiasis is diagnosed, patient is discharged on symptomatic treatment, to return in the OPD.
- If ultrasound shows pancreatic carcinoma and patient is asymptomatic, discharge, to return to the OPD for detailed management.

❖ For cholangitis,

- NPO
- NG and urinary catheter.
- Frequent monitoring of vital signs.
- I/V antibiotics e.g., Ceftriaxone 1g BD and Metronidazole 500mg TDS.
- I/V fluids as guided by Serum Electrolytes.
- I/V analgesics e.g., tramal+gravinate.
- Correct coagulopathies with FFPs, vitamin K.
- Admission after initial stabilization.

7. INITIAL MANAGEMENT OF ALL TRAUMA PATIENTS (AS PER ATLS RECOMMENDATIONS)

In a disaster situation, patient's triage i.e., those with live threatening injuries and with the greatest chance of survival are treated first.

AIRWAY MAINTAINENCE WITH CERVICAL SPINE STABILIZATION

- Assume cervical spine injury in all blunt trauma patients. Hence protect the spinal cord with cervical collar or manual in-line immobilization.
- If patient is conscious, ask his name. A clear accurate response verifies the patient's ability to protect his airway, at least temporarily.
- Inspection of oropharyngeal cavity for disruption; injuries to the teeth or tongue, blood, vomitus, pooling of secretions or foreign body.
- Inspection and palpation of anterior neck for lacerations, hemorrhage, crepitus, swelling or other signs of injury.
- If patient is unable to protect his airway, secure a definitive airway (orotracheal or cricothyroidotomy in our setup).
- In the unconscious patient, the airway must be protected immediately once any obstructions (e.g., foreign body, vomitus, displaced tongue) are removed.
- In patients with direct airway trauma e.g., facial, mandibular, tracheal/laryngeal fractures, superficial facial and neck burns, neck and facial hematoma, secure a definitive airway early.

BREATHING AND VENTILATION

- Administration of high flow oxygen using a non-rebreathing reservoir.
- Inspection of chest wall expansion, symmetry, respiratory rate and wounds.
- Palpation of tracheal deviation and surgical emphysema.
- Percussion and auscultation of chest for breath sounds.
- Identification and treatment of life-threatening conditions such as tension pneumothorax, flail chest with pulmonary contusion and massive hemothorax.

CIRCULATION WITH HAEMORRHAGE CONTROL

- Record of blood pressure and pulse.
- signs of shock.
- Placement of two large bore I/V cannula. blood for cross match is sent.
- Fluid resuscitation with crystalloids e.g., Ringer's Lactate (warmed solution preferred). O Negative blood can be used in severe cases.
- Control of external bleeding with pressure, elevation or proximal tourniquet.
- If there is no obvious source of hemorrhage and the patient is hypotensive, suspicion of bleeding into the chest, abdomen, retroperitoneum, muscle compartment or pelvic and long bone fractures.
- If the patient does not respond to initial fluid bolus, then surgical control of hemorrhage (laparotomy, thoracotomy).

DISABILITY

- Focused neurologic examination. This includes a description of the patient's level of consciousness using the Glasgow Coma Scale (GCS) score, and assessments of pupillary size and reactivity, gross motor function, and sensation.
- Assessment of any lateralizing signs and the level of sensation if a spinal cord injury is present.
- After excluding hypoxia and hypovolemia, consideration of any changes in the level of consciousness due to head injury.

EXPOSURE AND ENVIRONMENT CONTROL

- Patient is undressed for thorough examination.
- Prevention hypothermia using warm clothing and warm I/V fluids (hypothermia is a cause of coagulopathy and multiorgan dysfunction).

8. APPROACH TO THORACIC TRAUMA
PRIMARY SURVEY

- Call for help from the paramedical and nursing staff.
- Ask for mechanism of injury from the patient, attendants, paramedics or SMO whilst you simultaneously proceed as per ATLS protocols.
- Stabilization of Cervical Spine.
- Ensure that the airway is clear. Intubation if critical.
- Simultaneously paramedical staff is asked to obtain vital signs i.e., blood pressure, pulse rate, respiratory rate and if possible cardiac monitoring (or ECG) and pulse oximetry.
- Two large bore I/V cannula, while you simultaneously move on to the second stage of primary survey; BREATHING AND VENTILATION.
- Examination must target the following immediate life-threatening injuries;
    1. Tension pneumothorax
    2. Open pneumothorax
    3. Flail chest
    4. Massive hemothorax
    5. Cardiac tamponade.
- Record of vital signs. Any abnormality, especially hypotension, hypoxia, or persistent tachycardia, should raise suspicion for underlying injury.
- If patient is conscious, ask him for any area of chest pain, shortness of breath, foreign body sensation in mouth or change in voice.
- Inspection of the patient. Look for agitation, depressed mental status, respiratory distress, elevation of the JVP, engorgement of the neck veins, location and nature of major chest wound (GUIDED BY SIMULTANEOUS HISTORY).
- Assessment for decreased chest movement.
- Palpation for tracheal deviation.
- Palpation for subcutaneous emphysema (crepitus).
- Palpation for rib fractures and flail segment.
- Percussion for nature of percussion note (hyper-resonant or dull).
- Auscultation of both sides for possible diminished breath sounds or crepitus. Also, auscultation of the heart for faintness of heart sounds

- Major life-threatening injuries are identified and treated. Time should not be wasted on unnecessary investigations.

1. High flow oxygen. In case of Tension Pneumothorax, insertion 12G cannula into the second intercostal space in the midclavicular line, followed by chest drain connected to underwater seal drain.
2. In case of Open Pneumothorax, 3-sided dressing followed by chest drain.
3. In case of Flail Chest, adequate analgesia and endotracheal intubation in severe cases.
4. With massive Hemothorax (1500ml blood in pleural cavity), chest drain insertion.
5. In case of suspected Cardiac Tamponade, blind pericardiocentesis with LP needle and call the

- Cardiothoracic team.
- IV fluid resuscitation with crystalloids.
- All baselines and blood for crossmatch.
- Arrangement of blood.
- High risk consent.
- Transfer of patient to the OT after initial treatment for definitive intervention if needed.
- Shift the hemodynamically unstable patient, not responding to resuscitation, to the OT, without wasting time on the secondary survey.

9. APPROACH TO THORACIC TRAUMA
SECONDARY SURVEY

HISTORY

Detailed history if patient is conscious. Otherwise extrapolate as much as you can from the attendants or eye witnesses. Ask about:

- What exactly happened.
- Dyspnea
- Odynophagia
- Chest pain
- Back pain

EXAMINATION

- Exposure of patient.
- Positioning of patient so that front, back and sides of the chest can be assessed for any wounds missed during the primary survey.
- Accurate documentation of number of stab wounds, entry and exit wounds in case of fire arm injuries for MLC (medico-legal cases).
- Examination of the patient with the following injuries in mind:

1. Simple pneumo/hemothorax
2. Rib fractures
3. Pulmonary contusion
4. Tracheobronchial rupture
5. Blunt cardiac injury
6. Aortic disruption
7. Diaphragmatic rupture

INVESTIGATIONS

- Erect CXR.
- Repeat CXR after all chest drain insertions.
- ECG
- Portable ECHO
- Cardiothoracic Surgical consult.
- Consultant is called for decision regarding CT Thorax.

MANAGEMENT

- High flow oxygen.
- Insert
- Chest drain insertion for isolated pneumo/hemothorax.
- I/V analgesia e.g., tramal+gravinate.
- I/V fluids.
- Arrangement of blood.
- Cardiothoracic surgical referral for all cardiac trauma.
- Transfer of patient to OT if immediate surgical intervention warranted after consent.
- Bed in SICU

10. ABDOMINAL TRAUMA (PRIMARY SURVEY, SECONDARY SURVEY)

- Abdominal trauma can manifest a wide range of presentations, from a patient with normal vital signs and minor complaints to an obtunded patient in severe shock.
- Initial resuscitation of the patient as per ATLS protocols.
- BLIs and blood for cross match.
- Any patient persistently hypotensive despite resuscitation, for whom no obvious cause of blood loss can be identified by primary survey, can be assumed to have intra-abdominal injury.
- If the patient is stable, proceed to secondary survey. A FAST Scan and an abdominal CT scan is now indicated.
- If the patient is critically unstable, patient is directly shifted to the OT and emergency laparotomy is performed.

HISTORY

- History from the patient, the other passengers, attendants, police or paramedic staff, the mechanism of injury.
- CLASSIFICATION of the injury into BLUNT OR PENETRATING i.e., blunt trauma common in road traffic accidents whilst penetrating trauma common in gunshot and stab wounds.
- The type of gun used, its caliber and distance from weapon is important in gunshot injuries. Type of instrument, its length and the patient's position during stabbing is important for stab wounds.
- If the patient is alert, ask history site of maximal pain. Severity of pain will indicate the extent of damage. If the patient is not conscious, you will have to rely on physical examination and investigations.

PHYSICAL EXAMINATION

- Inspection of the anterior abdomen from below the nipple line to the perineum. Log roll to inspect the posterior part of the abdomen.
- Looking for abrasions, contusions, lacerations, penetrating wounds, distention and evisceration of viscera.
- Auscultation for the presence/absence of bowel sounds.
- Palpation of abdomen for tenderness, rebound tenderness, guarding, rigidity and a gravid uterus.
- Percussion to detect fluid accumulation and to elicit subtle rebound tenderness.
- Assessment for pelvic stability.
- Penile, perineal, rectal, vaginal and gluteal region examination.
- Local wound examination in gunshot and stab wounds. using local anesthesia and blunt dissection.
- Determining the need for immediate laparotomy represents the central task in managing the patient with an abdominal penetrating wound

INVESTIGATIONS

- Routine BLIs and Urine R/E.
- CXR (supine/erect).
- FAST Scan.
- Proceed to CT scan after consulting the consultant on call if conservative management is being contemplated.
- ANY UNSTABLE PATIENT IS NOT SENT TO THE RADIOLOGY DEPARTMENT.
- Diagnostic Peritoneal Lavage is usually unnecessary here at AFM&DC as FAST and CT scan have replaced this modality but every surgeon should know its indications, procedure and interpretation and complications.
- The presence of blood, gastrointestinal contents, bile or feces through the lavage catheter indicates the need for laparotomy.

MANAGEMENT

- All patients with abdominal trauma are evaluated for the need for operative care. Laparotomy is performed in the following cases:

1. Unexplained signs of blood loss or hypotension in a patient who cannot be stabilized despite adequate resuscitation and in whom intra-abdominal injury is strongly suspected.
2. Blunt trauma with free blood on ultrasound and an unstable circulatory status.
3. Blunt trauma with radiologic evidence of solid organ injury not suitable for conservative management.
4. Clear and persistent signs of peritoneal irritation.
5. Radiologic evidence of pneumoperitoneum consistent with a viscus rupture.
6. Evidence of a diaphragmatic rupture.
7. Evisceration

- All penetrating injuries with visible viscera, clinical features of peritonitis, hemodynamic instability and developing signs of sepsis need exploration.
- AS HERE AT AFH AND AROUND THE WORLD, EXPLORATORY LAPAROTOMY IS RECOMMENDED IN CASE OF PERITONEAL BREACH OR ORGAN INJURY.

11. VASCULAR INJURIES: INITIAL MANAGEMENT FURTHER MANAGEMENT

- Initial resuscitation as per ATLS protocols.
- Control of bleeding. Application of direct pressure to the open hemorrhaging wound.
- Replacement of volume lost with aggressive fluid resuscitation. Immediate involvement of ORTHO Department.
- Realignment and splinting of any fracture.
- Immobilization of any dislocated joint. Covering wounds. Any expanding hematoma suggests a significant vascular injury.
- SKIN SUTURING IS NOT PERFORMED UNLESS A SIGNIFICANT ARTERIAL OR VENOUS INJURY HAS BEEN RULED OUT.
- Further management when the primary survey is complete and resuscitation is continuing successfully.

PHYSICAL EXAMINATION

- ALL CASES ARE HANDLED BY ORTHO SURGERY UNIT WITH COLLABORATION BOF GENERAL SURGERY. ENSURE THEIR CONSULTATION IS TAKEN IN SUCH SITUATIONS.
- Identification of limb threatening injuries.
- Identification of injuries anatomically close to major arteries and nerves.
- HARD SIGNS OF VASCULAR INJURY:

1. Major hemorrhage
2. Expanding or pulsatile hematoma
3. Absent or diminished distal pulses
4. Pain, Pallor, Paresis i.e., distal ischemia
5. Temperature differential compared to extremities
6. Thrill or audible murmur

- SOFT SIGNS OF VASCULAR INJURY:

1. Significant hemorrhage on history
2. Small non-pulsatile hematoma
3. Neurological deficit
4. Proximity of the injury to a major artery
5. Decreased pulse compared to contra-lateral extremity.

INVESTIGATIONS

- BLIs.
- Blood for cross match and arrange blood.
- Pulse oximetry.
- Given that the patient is hemodynamically stable, plain X-ray films are obtained in case of fractures.
- Doppler ultrasound may or may not be available, however that an ankle-brachial index (ABI) of less than 1 is predictor of arterial injury.
- DUPLEX Scanning is not available round the clock.
- Intra-operative angiography is not available at AFMDC.

MANAGEMENT

- High risk consent. Adequate counseling of patient or attendants that hemorrhage control will take priority over limb salvage.
- Shifting patient to the OT if there are hard signs of vascular injury. Immediate surgical intervention is performed.
- If there has been prolonged ischemia (≥4 to 6 hours), significant vascular disruption, crush or significant soft tissue injury, wound contamination and apparent futility of revascularization, amputation is done.
- Vascular repair is performed where possible. Saphenous vein graft is usually employed where end to end anastomosis is not possible. Synthetic grafts are not readily available in our setup.
- If there is associated skeletal injury, vascular repair is done first. Then stabilization of skeleton with splints or external fixation, as decided by the Ortho team.
- Fasciotomy is performed to decompress all four compartments of the leg, to prevent the development of the compartment syndrome.
- I/V Heparin is started if there is no contra-indication.
- POST-OP, frequent evaluations of pulse, capillary refill and maintenance of adequate hydration.

12. SKIN ABSCESSES

HISTORY

- The patient presents with a painful red mass that is compressible, compressible, warm to touch and tender. Ask about:
  1. The location of the mass. TAKE CARE OF THE PRIVACY OF THE PATIENT.
  2. Days since its presence.
  3. Presence of high-grade fever, rigors, chills, nausea, vomiting.
  4. Any history of skin breach at that site, commonly insect bite and injury with a foreign body such as a splinter or a needle.
  5. Any cause for a weakened immune system such as diabetes or steroid therapy.

EXAMINATION

- Examination for:

1. Toxic look
2. Fever
3. Tachycardia
4. Painful, tender, fluctuant and erythematous nodules, frequently surmounted by a pustule and surrounded by a rim
5. of erythematous swelling.
6. Pustular drainage
7. Regional adenopathy.
8. For peri-anal abscesses, thorough inspection and careful digital rectal examination is

INVESTIGATIONS

- Detailed investigations often unnecessary before incision and drainage.
- Blood CP if history of fever.
- For history of diabetes and recurrent abscesses, medicine consult for adequacy of glycemic control.
- For large abscesses, senior is consulted regarding the need for ultrasound to gauge its extent.

TREATMENT

- Incision and drainage of the abscess under local anesthesia. If it is small, it can be done in the ER. Larger abscesses and peri-anal abscesses are performed in OT.
- PUS FOR CULTURE AND SENSITIVITY IS SENT.
- Oral antibiotics are prescribed. For abscesses below the waist (e.g., perianal), gram negative and anaerobe coverage's given.
- Pain killers.
- Daily dressing.
- Counseling the patient regarding personal hygiene and medical attention for future puncture wounds.
- Discharge for follow up in the OPD with culture results.

13. DIABETIC FOOT INFECTIONS

PATIENTS WITH DIABETIC FOOT INFECTION MAY PRESENT WITH SEPSIS. Vitals record and resuscitation as per ATLS recommendations after referral by the SMO. Proceed only when the patient is hemodynamically stable. SICU or MICU is contacted if in shock.

HISTORY

Patient is asked about:

- Time since the development of the ulcer.
- Fever
- Pain, warmth, redness, swelling in the affected foot.
- History of local trauma to the affected limb.
- Any rest pain or pain on walking (claudication).
- Numbness in feet.
- History of diabetes and regimen used for glycemic control.
- Recent BSR values.
- Other co-morbidities.

EXAMINATION

The severity of infection varies from abscess to cellulitis to bone and joint involvement to gangrene or necrotizing fasciitis. Look for:

- Fever, chills, tachycardia, hypotension, confusion.
- Location of lesion.
- Extent of infection (e.g., involving skin, subcutaneous tissue, muscles, tendons and/or bone).
- Whether bone is visible or not.
- Erythema, warmth, tenderness, swelling, pus in the ulcer, formation of sinus tracts with pus discharge.
- Necrosis, crepitus, cutaneous bullae.
- Skin discoloration
- Signs of septic shock.
- Sensory and vascular system examination

INVESTIGATIONS

- Extent of investigations depends on the condition of the patient.
- BLIs especially Blood CP, ESR, LFTs, RFTs, Serum Electrolytes, BSR, PT/APTT, Hepatitis Serology, HbA1c.
- Blood for cross match.
- Blood Cultures.
- ABGs, D-Dimers, Fibrin Degradation Products.
- X-rays for underlying osteomyelitis.
- CXR, ECG.
- Doppler Ultrasound.

TREATMENT

- For patients with cellulitis and abscesses, incision and drainage or debridement is done under local anesthesia, and discharge on oral antibiotics. Pus for culture and sensitivity is sent. Follow up in Diabetic Foot Care Clinic.
- Patients in sepsis are managed aggressively as follows:

1. NPO
2. I/V antibiotics with staphylococcus, streptococcus, gram negative and aerobic coverage e.g., Carbapenems, Tazocin.
3. Immediate Medicine consults for glycemic control. Start Sliding scale or Glucose-Potassium-Insulin (GKI) infusion.
4. I/V fluids.
5. Transfer of patient to the OT.
6. Consultant opinion for thorough debridement or amputation.
7. In case, amputation is decided, high risk consent from the patient or attendants.
8. Arrangement of blood.
9. CULTURES OF PUS AND DEBRIDED TISSUE ARE SENT.
10. Bed in SICU is arranged if needed.

14. ACUTE LIMB ISCHEMIA

Vitals record and resuscitation as per ATLS recommendations after referral by the SMO. Proceed only when the patient is hemodynamically stable.

HISTORY

- Presence, onset and severity of limb pain.
- Previous history of such pain (sudden onset points to embolus rather than thrombus).
- Previous history of claudication.
- History of smoking, diabetes, HTN, MI, AF, malignancy, trauma, prothrombotic states.
- History of recent surgery.

EXAMINATION

- Quality and character of the peripheral pulses. Comparison with the other side. Pulselessness is to be expected in the affected limb.
- The skin of both the normal and affected extremity is examined for temperature, color and capillary refill. The skin of the ischemic extremity is typically cool and pale with delayed capillary filling.
- A careful neurologic examination is performed. Subjective sensory deficits such as numbness or paresthesia are signs of early nerve dysfunction secondary to ischemia.

INVESTIGATIONS

- BLIs especially Blood CP, LFTs, RFTs, PT/APTT, CPK, LDH.
- ECG, CXR.
- Doppler Ultrasound (only available in the mornings in AFM&DC).
- Arteriography (available at AFM&DC).
- CTA, MRA depending on patient affordability.

TREATMENT

- I/V analgesia e.g., tramal+gravinate.
- Consultant opinion.
- If there are no contra-indications, I/V unfractionated heparin with 5000U bolus followed by 1000U/hr. infusion.
- I/V fluids.
- Admission of patient. Further management to be undertaken in the ward.
- If irreversible damage clinically, confirmed with a Doppler Ultrasound (from outside if necessary).
- Counseling of patient and attendants over need of amputation. Amputation is performed without delay.

15. INTESTINAL OBSTRUCTION AND STRANGULATED HERNIA

Vitals record and resuscitation as per ATLS recommendations after referral by the SMO. Proceed only when the patient is hemodynamically stable.

HISTORY

- Colicky abdominal pain
- Vomiting
- Inability to pass flatus
- Constipation
- Distention
- Have a high index of suspicion for Intestinal TB. Query for anorexia, night sweats, malaise, anorexia, weight loss.
- History of previous surgery, hernia, tuberculosis, cancer.
- Other co-morbidities.

EXAMINATION

- Pyrexia, tachycardia for possible strangulation of hernia.
- Signs of dehydration e.g., dry mucous membranes, hypotension.
- Previous surgical scars and distention on inspection.
- High pitched or hypoactive bowel sounds.
- Tenderness to palpation with guarding and rigidity, pointing to peritonitis.
- Hyper-resonant percussion notes (tympany).
- Abdominal mass e.g., in volvulus.
- Hernia. Hence all hernial orifices must be thoroughly examined.
- Digital rectal examination.

INVESTIGATIONS

- All BLIs especially Blood CP, LFTS, Serum Electrolytes.
- Erect AXR. If not possible, Supine AXR and Lateral Decubitus AXR.
- Ultrasound Abdomen.
- CT Abdomen in rare cases but to be ordered only by the consultant on call

TREATMENT

- NPO
- I/V Fluids.
- NG tube and catheterization.
- I/V analgesia e.g., tramal+gravinate.
- I/V antibiotics e.g., Ceftriaxone 1gm BD and Metronidazole 500mg TDS.
- Glycerin suppositories.
- Serial monitoring of vital signs.
- Serial abdominal examination.
- Admission.
- Consent for surgery.
- If this conservative management fails, patient is shifted to the OT for laparotomy.
- For strangulating obstruction and signs of peritonitis, patient is immediately shifted to the OT for intervention.

16. CELLULITIS

HISTORY

- The patient gives a history of:
  1. An area of pain, tenderness, warmth, swelling and redness.
  2. Recent trauma to the area, edema, skin infection or inflammation.
  3. Fever with chills.
  4. Other co-morbidities e.g., diabetes, cancer and hence radiotherapy.
  5. Recent surgery.

EXAMINATION

- The lower limbs are commonly involved.
- The involved site will be red, warm, swollen and tender.
- The borders will not be sharply defined.
- There will be fever, chills and toxicity.
- Regional lymphadenopathy.

INVESTIGATIONS

- Only necessary in severe cases.
- BLIs especially Blood CP, BSR.
- Culture/Sensitivity after aspiration.
- Very rarely, ultrasound.

TREATMENT

- Elevation of affected limb.
- Mild cases are discharged without systemic symptoms on oral antibiotics.
- I/V antibiotics for severe cases with gram positive coverage in this empirical therapy.
- I/V analgesia.
- Serious patients are admitted.
- Incision and drainage for severe cases e.g., with circumferential cellulitis, with extensive involvement or with concerns for necrotizing fasciitis.

17.SHOCK MANAGEMENT

- The main symptom of shock is low blood pressure. Other symptoms include rapid, shallow breathing; cold, clammy skin; rapid, weak pulse; dizziness, fainting, or weakness. There are several types of shock: septic shock caused by bacteria, anaphylactic shock caused by hypersensitivity or allergic reaction, cardiogenic shock from heart damage, hypovolemic shock from blood or fluid

TREATMENT

Treatment for shock depends on the cause. Tests will determine the cause and severity. Usually, IV fluids are administered in addition to medications that raise blood pressure.

- Septic shock is treated with antibiotics and fluids.
- Anaphylactic shock is treated with diphenhydramine, epinephrine and steroid
- Cardiogenic shock is treated by identifying and treating the underlying cause.
- Hypovolemic shock is treated with fluids (saline) in minor cases, and blood transfusions in severe cases.
- Neurogenic shock is the most difficult to treat as spinal cord damage is

REFFRENCES

- **Short Practice of Surgery by Bailey and Love's**
- **Text Book Of Surgery** by Ijaz Ahsan
- **General Surgery (Lecture Notes Series)** by Harold Ellis, Roy Calne, Chris Watson
- **An Introduction to the Symptoms and Signs of Surgical Disease** by Norman Browse
- **Current Surgical Practice:** by Norman L. Browse, Alan G. Johnson, and Tom.
- **Schwartz's Principles of Surgery** by F. Charles Brunicardi, Dana K. Andersen, Timothy R. Billiar, and David L. Dunn
- **Washington Manual of surgery**
- **Alfred Cuscheri, Eseential surgical practice**
- **Online Journals and Reading Materials through HEC Digital Library Facility.**