Ministry Of Higher Education and Scientific Research

The Iraqi Board For Medical Specializations

The Scientific Council Of Fracture And Orthopedic Surgery

Orthopedic Curriculum

Preface

The scientific council of fracture and Orthopedic Surgery of the Iraqi Board for medical specialization worked collaboratively to make this curriculum available for trainees' guidance and support.

Postgraduate medical educations worldwide are now governed by sets of academic standards that describe the qualities and abilities of graduates. In addition, there are standards for the training processes, trainers selection and methods of assessment. Standards ensure transparency and clarify expectations.

We start to define and publish our standards for the general and professional competencies expected from our graduates in orthopedic and traumatology upon successful completion of training. These expectations are clearly reflected in this curriculum.

The curriculum describes what trainees will know and be able to do upon completion of training. In additions, methods of teaching and learning needed to deliver the curriculum are outlined. The curriculum also describes in details, expectations from trainees during their rotations in "The training rules and regulations section". Methods of assessment and examination regulations are also available in the last section of the curriculum.

All topics covered during practical and theoretical study are outlined in tables. This will help trainees to guide their readings and their choice of learning activities. In addition, all required clinical cases and operative procedures are listed together with expected level of performance at various stages of training.

To help our trainees and maximize benefit, we provided a guide in the logbook for mandatory courses and operative experiences that must be attended and performed by trainees each year.

We hope that all our trainees, trainers and educational supervisors will follow the provided guides and cooperate with the Orthopedic Surgery Scientific Council to ensure the proper implementation of this curriculum.

CONTENTS……

Rational statement:

- The purpose of this curriculum is to describe the knowledge, skills, behaviors and attitudes expected from orthopedic surgeons upon completion of training in The Iraqi Orthopedic Fellowship.
- The curriculum also describes the methods of teaching and learning that will be used to facilitate the delivery of curriculum. In addition, it highlights the different methods of trainee's performance evaluation that are going to be used whether formative or summative. The curriculum contents have been formulated through the following methods:
  1. Revision of previous Iraqi Orthopedic Fellowship programs.
  2. Revision of international curricula for postgraduate training in surgery. We specifically mention the Royal college of surgery curriculum approved by the PMETB in 2011 and the Australian Royal college of surgery curriculum
  3. Consultation of experts in the field of orthopedic surgery and other related surgical specialties inside and outside our country.
- The curriculum was re-revised by members of the Orthopedic scientific council and approved by the council.

Curriculum aim:

Aims of the Orthopedic Fellowship Training

- To provide the trainee with the knowledge, and skills, which enable him to identify, assess, manage and/or refer elective orthopedic problems in order to provide cost effective and human patient care.
- To provide the trainees with an appropriate theoretical and practical knowledge and skills covering the common and / or important orthopedic & surgical emergencies.
- To enable the development and application of appropriate professional attitudes, ethical principles and communication skills.

General intended learning outcome:

By the end of training in orthopedic surgery fellowship program, graduates of the program must have the following knowledge, skills, behaviors and attitudes.

Knowledge and understanding

1. Describe the anatomy of surgically important regions, organs and structures of the body especially the musculoskeletal system.
2. Describe the etiology, pathogenesis and pathology of important and/or common orthopedic diseases.
3. Discuss the clinical manifestations, complications, diagnostic modalities, out-comes and treatment plans for common and/or important fractures, with special emphasis on emergencies.
4. Explain the methods of screening and early detection of malignant bone tumor.
5. Recognize the ethical principles that govern decision making in orthopedic & fractures practice.
6. Discuss the principles and practice of preoperative preparation and postoperative care.
7. Discuss different modalities for management of pain related to orthopedic surgery.

Surgical Skills

1. Obtain, perform and document a complete medical history and physical examination for orthopedic patients.
2. Perform an emergency directed examination for patients with common orthopedic & surgical emergencies.
3. Utilize sources of information like medical records, patient's family/friends to augment medical and surgical history.
4. Interpret patient symptoms and physical findings in terms of their anatomic, pathologic and functional diagnostic significances.
5. Identify problems, prioritize them, and generate a list of differential diagnosis for each problem.

6. Select the most appropriate and cost-effective diagnostic and therapeutic procedure for each problem.
    a. Identify medical and investigative parameters to be used in assessing the patient's response to intervention and re-evaluate management plan accordingly.

Communication skills

1. Conduct sincere and effective patient interviews, properly explain the condition and plan of management, obtain consents and convey bad news in a professional way.
2. Write patient records and properly present them.
3. Communicate, consult and respect the role of other health- care providers.
4. Work effectively and cooperatively in a team.
5. Search effectively in electronic resources to find valid appropriate information and use them in management of orthopedic and fractures cases.

Ethical behavior

1. Respect Patients confidentiality and deliver care in an honest, considerate and compassionate manner.
2. Appropriately and ethically get informed consent for indicated surgical interventions.
3. Discuss professional errors in an honest way.

The structure of the orthopedic surgery training program

The Iraqi Board for Medical Specialization has the overall responsibility for the training, education and accreditation of surgeons in Iraq and is responsible for the determination of general standards.

The Iraqi Fellowship program requires five years of supervised training program that must be conducted in accredited Teaching hospitals before sitting for the final examination. It also requires the presentation of a short thesis on a subject approved by the supervisors. During the entire training program, the candidate must be dedicated full time and must be responsible for patient care under supervision. The program has the following requirements for trainees who are affiliated to IBMS:

1. Graduation from medical school and completion of the internship program.

2. Enrollment in the Ministry of health residency program as an orthopedic resident for at least one year of training.
3. Trainees should pass the following courses:
    - An advance English language course.
    - A Computer skills course.
4. All applicants enrolled in competition written examination in orthopedic and fractures in order to take the required number of candidate according to the plan of the council for that year.
5. Applicant who finished their orthopedic diploma might join the program from its second year. However, they must sit for the first part exam.

First year

The trainee should spend the first year of training in traumatology and general surgery practice during this period he will work as a full time resident. At the end of this year the candidate enrolled in the part one written examination in Applied Basic Surgical Science.

Second year

During the second year of training, trainees must get experience in different surgical specialties related to fracture and orthopedic surgery. The training centers should have surgical specialties' clinics and operative services that ensure full coverage of all cases and operations. Trainees must work on orthopedic Traumatology and Surgical emergencies.

During this year he should spend one month in vascular surgery training including emergencies.

Third, Fourth and Fifth years

The third, fourth and fifth years of training should be spent in general and specialized trauma and orthopedic practice (including urgent and elective, and reconstructive trauma cases in addition to elective, and reconstructive orthopedics as well as specialized orthopedic surgical training in arthroplasty, arthroscopy spine , hand and other specialized orthopedic surgeries), so that trainees would have chances to apply what they learnt in previous years and will be capable of training and supporting their junior colleagues. Their obligations, duties and

responsibilities will be matching their experience, level of training and available supervision

During these years student must have training in other related specialties as follows:

1. two months in Neurosurgery.
2. Two months in Plastic Surgery.
3. One month in Rehabilitation center.

Trainees' duties and obligations:

1. Trainees must attend at least 75% of lectures on orthopedic and trauma subjects.
2. They should be actively involved and fully responsible for patient care including sharing in making decisions about diagnosis and management under supervision of the consultants.
3. They must attend 75% of weekly meetings including clinical rounds, tutorials, journal clubs and morbidity and mortality meetings.
4. Their performance will be monitored and evaluated by trainers and a report of their performance will be issued on monthly basis to the Iraqi council of Orthopedic.
5. All trainees will work as residents in the training specialty and they must fulfill all residents jobs defined by supervisors and trainers
6. They should be responsible under supervision for outpatient and in-patients' routine work and must take supervised shifts according to hospital regulations.

During the hospital rotations:

1. The in-patients:

A. The trainee will be responsible for supervised admission of patients from the orthopedic outpatient clinics or emergency department.

B. He will share in the completion of the following documents and activities under supervision for each case:

- Complete history and physical examination form.
- Investigation requests (laboratory, radiology, pathology).
- Follow-up the results of the investigations.
- Put a primary plan of management.
- Preoperative assessment and preparation
- Operative consent and invasive procedures consent
- Operative records.
- Postoperative care and management.
- Daily progress notes.
- Order and medication sheets.
- Order of the necessary diagnostic procedures.
- Discussion of the case with the trainer and consultants.
- Discharge summaries.
- The Trainee should inform the senior staff for any high-risk patient admission.

2. Outpatient clinics & Minor surgery units:

A. The trainee should attend the outpatient clinics related to mandatory orthopedic rotations and its subspecialties as requested by trainers and supervisory staff.

B. He should also attend operative sessions in outpatients or minor surgery units.

3. Mandatory clinical and academic activities:

The trainees must attend and participate in the mandatory academic and clinical activities of the department. Attendance and participation should not be less than 75% of the total number of activities within any training rotation / period including:

- Daily morning endorsement meetings.
- Clinical round presentation, at least once weekly to cover various topics, problems, research, etc.
- Journal club meeting.
- Surgical morbidity / mortality conferences and audit sessions.

4. The log book:

The trainee must keep a Logbook where he records all activities and skills per-formed and learned during the training program. The activities should be dated and categorized to whether been performed by the trainee him or as an assistant or participant. Each activity registered in the Logbook should be counter signed by the trainer and finally the educational supervisor. The Trainer and educational supervisor must sign the completed Logbook.

5. The research or audit project:

The trainee must undertake at least one research project or audit during the training program under the guidance and supervision of a nominated supervisor (nominated by the scientific council). Such project or mini thesis should be written and discussed before the trainee is accepted for admission to the final certifying examination and its acceptance is a prerequisite for the final exam.

General rules and regulations:

- Holidays and on call duties: this is arranged according to Ministry of Health and Hospital regulations.
- Evaluation procedures:
  a. Performance of the trainee will be evaluated on regular and continuous basis. The evaluation process should involve all aspects of the training including theoretical, clinical and operative procedures skills as well as the attendance and participation.
  b. The trainers who are required to write confidential reports of the performance of each trainee should evaluate the trainee periodically. The trainee should not be allowed to proceed in the training program and move to the next stage of training unless he attains a satisfactory level of performance acceptable to the responsible trainer and educational supervisor.
  c. The trainee shall not be allowed to proceed to year 3 before successfully passing the first part exam.

- Interruption of training

It is not permissible to interrupt such a structural training program except in major unavoidable circumstances. Such circumstances should be convincing and approved by the Iraqi fellowship council. The Interruption once approved should not be for more than one year

Teaching will be conducted using the following techniques

1. Clinical rounds and clinical days.
2. Bedside teaching.
3. Grand orthopedic rounds with active participation of trainees in case presentations.
4. Apprenticeship teaching in the operative theatre.
5. Outpatient and inpatients work.
6. Journal clubs
7. Workshops and training courses.
8. Weekly conference participation.
9. A programmed lectures on fractures & orthopedic topics.

Basic science syllabus

Applied surgical anatomy

Blood vessels:

For the following arteries and their corresponding veins, trainees should describe, the course, relations, surface anatomy, branches and collateral circulation.

Arteries:

Common carotid – internal carotid – external carotid – aorta – Subclavian – axillary – brachial – radial – ulnar - common iliac – external iliac – internal iliac – femoral – popliteal –anterior tibial – post tibial – peroneal – dorsalis pedis

All corresponding veins.

Nerves:

For all the following nerves, trainees should describe, their course, relations, surface anatomy and branches.

Cranial nerves-Sympathetic trunk-Brachial plexus – radial nerve – median nerve - ulnar nerve – circumflex nerve – musculocutaneous nerves - Lumbar plexus – femoral nerve – obturator nerve – sciatic nerve – Tibial nerve – common peroneal nerve.

Lymphatic:

Cervical lymph node, Axillary, inguinal, Abdominal, Mediastinal, and Breast lymphatics

Muscles:

For following muscles, trainees should have described; origin – insertion – nerve supply – function – surgical significance.

Muscles

Strap muscles – sternocleidomastoid – scalenus anterior – scalenus medius – scalenus posterior – levator scapulae.

Pectoralis major & minor – deltoid - biceps brachii – brachialis – triceps – latissimus dorsi.

Muscles of the ant abdominal wall, Psoas major – quadratus lumborum – iliacus. - Diaphragm.

Sartorius – gracilis – quadriceps femoris – tensor fascia lata – biceps femoris – semitendinosus – semimembranosus – adductors – gastrocnemius – soleus. Gluteus maximus, medius, minimus and Levator anni muscle.

Anatomy of the inguinal canal.

Anatomy of the femoral canal.

Anatomy of the breast.

The salivary glands: Parotid – submandibular.

Head and neck:
1.Deep fascia.
2. Triangles of the neck.
3. Thyroid & parathyroid glands.
4. Parotid & submandibular salivary glands.
5. Larynx
6. Trachea.

G I T:
The trainee should describe; Anatomical location, relations, blood supply, lymphatic drainage, nerve supply of:
1. Pharynx.
2. esophagus.
3. Stomach.
4. Duodenum.
5. Small bowel.
6. Large bowel & appendix.
7. Rectum.
8. Anal canal.
9. Liver – gall bladder – biliary system – pancreas
10.Spleen
11.adrenal glands.

Urogenital anatomy
1. Kidney.
2. Ureter.
3. Urinary bladder.
4. Urethra.
5. Scrotum – testis – epididymis.
6. Ovary.

Thorax anatomy
Trachea – bronchi – lungs

Applied Surgical Physiology

Water & electrolyte balance:
1. Hyponatremia.
2. Hypernatremia.
3. Hypokalemia.
4. Hyperkalemia.

Acid base balance:
1. Acidosis: Respiratory & metabolic.
2. Alkalosis: Respiratory & metabolic

Physiological response to stress:

Shock:
1. Hypovolemic.

2. Neurogenic.
3. Anaphylactic.
4. Septic.

Blood transfusion: transfusion of blood products.

Surgical hemostasis:

1. 1ry Hemostasis: vasoconstriction – platelet functions.
2. 2ry Hemostasis: Coagulation and Fibrinolysis.
3. Disorders of hemostasis
    - Congenital.
    - Acquired:

    1. Liver disease.
    2. Vit. K deficiency.
    3. DIC.
    4. Massive transfusion.
    5. Platelets abnormalities.

Surgical Nutrition:

- Metabolism in normal persons (starvation& hypercatabolic states).
- Squeal of under nutrition.
- Assessment of malnutrition.
- Enteral nutrition.
- T.P.N.: Indications – complications.

The endocrine system:

Physiology and function of

1. Thyroid gland
2. Parathyroid glands
3. Suprarenal cortex and medulla

<u>Applied Surgical Pathology</u>

Acute inflammation: Vascular & cellular events:

- Boil – cellulitis – abscess – carbuncle – necrotizing fasciitis.
- Gas gangrene – septicemia.

  Chronic inflammation: T.B.

  Wound healing:
- Stages of wound healing, types, factors affecting wound healing and complications of wound healing

Surgical oncology:

- The Etiology and epidemiology of malignant disease
- The Environmental and genetic factors in carcinogenesis
- The risk factors for malignant disease
- The Terminology used in The field of cancer epidemiology
- The Prognosis and natural history of malignant disease
- The Mechanisms and patterns in local, regional and distant spread
- The Differences between hereditary and sporadic cancers

- Diseases predisposing to cancer e.g. inflammatory bowel disease
- The basic Genetics of hereditary malignant diseases
- The principles of Cancer biology
- The principles of Tumor immunology
- The basic principles of cancer treatments including surgery, radiotherapy, chemotherapy, endocrine therapy & immunotherapy.
- The methods of evaluation of response to treatment.
- The possible adverse effects of treatment and interaction with surgical management.

Surgical Immunology:

- Antigen antibody reaction.
- Types of rejection.
- Immuno-suppression.
- Renal – hepatic – cardiac – pancreatic transplantation. (Indications and complications).

Basic Surgical Skills:

Knowledge:

Describe the principles of skin and subcutaneous incisions and surgical handling.

Skills:

1. Incise superficial tissues accurately with suitable instruments.
2. Close superficial tissues accurately.
3. Tie secure knots.
4. Achieve homeostasis of superficial vessels.
5. Use suitable methods of retraction.
6. Use drains appropriately.
7. Handle tissues gently with appropriate instruments.

Traumatic Surgical Emergency:

Knowledge:

1. Describe the applied anatomy relevant to the injury of abdomen, thorax, soft tissues and skeleton.
2. Discuss the pathogenesis and pathophysiology of shock.
3. Explain the concept of high energy & energy transfer injury.
4. Recall the peri-operative care.
5. Outline the etiology, pathophysiology and management of sepsis
6. Discuss indications and use of blood product transfusion.

7. Describe congenital and acquired coagulations disorders that might be encountered in trauma patients.

Skills:

1. Assess and initiate management in case of blunt and penetrating trauma of the abdomen, thorax soft tissue and skeleton.
2. Recognize injuries that require management by other specialties.
3. Perform resuscitation "CPR" according to ATLS principles.
4. Use different techniques to stop bleeding
5. Assess and recognize vascular injuries and limb ischemia.
6. Technical skills/ operative procedures in trauma

The Orthopedic & Fractures Syllabus

Introduction

Introduction to Orthopedic Surgery

Objectives:

1. To explain the special points for history taken and physical examination in orthopedic.
2. Discuss the various diagnostic methods to solve orthopedic problems.
3. Learn the candidate how to put a plan surgical operations.
4. Describe major surgical equipment in operative theater.
5. Review in general the operations attended on the bone and joint.
6. Discuss the principles of amputation.
7. List the common implant materials used in fracture and orthopedic.

The Topics are:

- History taking in Orthopedic
- Physical examination in Orthopedic
- Diagnostic Imaging used in orthopedic
- Synovial Fluid Analysis
- Bone biopsy
- Arthroscopy
- Electro-diagnosis
- Operation Planning
- Operations on the bones
- Operation on the joints
- Amputation
- Implant materials

Fractures & Trauma

Objectives:

1. Review the general principles of fractures management.
2. Classify fracture types according to anatomic location.
3. Define the nature and degrees of bone healing.
4. Review the principles of the Gustilo Classification.
5. List the steps of managing an open fracture wound.
6. Describe the various types of fixation devices that are used during open reduction and internal fixation (ORIF).
7. List common traumatic injuries of both adult and pediatric upper and lower extremities.
8. Review the general anatomy of the spine.
9. Discuss conservative forms of treatment for spinal cord injuries.
10. Recognize the traumatic disorders of the cervical, thoracic, and lumbar.
11. Review the general anatomy of the pelvis and the spine.
12. Outline the types and management of pelvic bones injuries.
13. Discuss conservative forms of treatment for spinal cord injuries.
14. Recognize the traumatic disorders of the cervical, thoracic, and lumbar spine.

The Topics are:

Introduction to Fractures…..

- Definition of fracture
- How Fracture happen???
- Types of Fractures
- Types of Fracture displacement:
- Healing of the fracture
- Rate of bone healing
- Testing for fracture union
- Clinical features of fractures
- History
- Examination
- Radiological examination
- Principles of Fracture Treatment
- Complications of fractures

INJURIES OF THE UPPER LIMB.

A) INJURIES OF THE SHOULDR, UPPER ARM AND ELBOW….

- Fractures of clavicle.

- Fractures of scapula.
- Acromioclavicular joint injury.
- Sternoclavicular dislocation.
- Dislocation of shoulder joint.
- Fractures of the proximal humerus.
- Fractures shaft of humerus.
- Supracondylar fractures of humerus.
- Fracture head of radius.
- Dislocation of elbow joint.
- Fracture of lateral condyle fracture medial condyle
- Pulled elbow joint.
- Fracture of distal humerus.
- Fracture of olecranon.

B) INJURY OF FOREARM AND WRIST JOINT...

- Fractures of radius and ulna
- Monteggia fractures dislocation.
- Galeazzi fractures dislocation
- Colles fractures.
- Scaphoid Fractures

C) HAND INJURIES…

- Clinical assessment
- General principle of treatment.
- Fractures of metacarpal bones.
- Bennett's fractures.
- Rolando fractures.
- Fractures of phalanges.
- Open injuries of the hand (clinical assessment, primary treatment, postoperative care).

INJURIES OF THE LOWER LIMB.

A) INJURIES OF THE HIP JOINT

- Hip dislocation
- Fracture neck of femur.
- Intertrochanteric fracture.
- Proximal femoral fracture in children..
- Femoral shaft fracture..
- Supracondylar fracture of femur.
- Fracture separation of femoral epiphysis

B) INJURIES OF THE KNEE AND LEG

- Knee ligament injuries.
- Dislocation of knee joint
- Fractures of patella
- Dislocation of the patella..
- Tibial plateau fracture.
- Fracture of tibias and fibula.
- Fracture of fibula alone…

C) INJURY OF ANKLE JOINT AND FOOT

- Acute ligamentous injuries of the Ankle joint.
- Fracture / dislocation of Ankle joint.
- Pilon fracture
- Fracture of Talus.
- Fractures of Calcaneum.
- Tarso-metatarsal injuries.
- Injury of metatarsal bones.

INJURIES OF THE PELVIS…..

- Pelvic stability
- Clinical assessment of pelvic injuries.
- Types of Pelvic injuries.
- Injury of the sacrum and coccygeal.

INJURIES OF THE SPINE…..

- Types of spinal injury.
- Principle of treatment of spinal injury.
- Types of neural injury at spinal column injury.
- Cervical spine injury.
- Thoracic spine injury
- Lumber spine injury.

Regional orthopedics

The SHOULDER….

Objectives:

1. Review anatomy and biomechanics of the shoulder joint.
2. Discuss the common disorders of the shoulder region.
3. Recognize outlines the treatment choices for these disorders.
4. Discuss in detail the shoulder instability and its new trend in the management

The Topics are:

- Disorders of the rotator cuff
- Acute Calcific Tendenitis
- Chronic Tendenitis ((Impingement Syndrome))
- Tears of the Rotator Cuff
- Adhesive Capsulitis ((Frozen Shoulder))
- Bicepital Tendenitis
- Torn Long Head of the Biceps
- Chronic Instability of the Shoulder Joint

THE ELBOW…..

Objectives:

1. Discuss the anatomy and common deformities of the Elbow and Forearm region.
2. List the causes, clinical features and treatments of theses deformities.
3. Discuss the most common overuse injuries of the elbow region.

The Topics are:

- Cubitus Valgus
- Cubitus Varus
- Olecranon Bursitis
- Tennis Elbow & Golfer Elbow:
- Elbow Instability

The wrist and hand

The objectives:

1. Review the anatomy of the wrist and the hand including muscles, ligaments, nerves, and bones
2. Recognize deformities caused by congenital defects and trauma
3. Discuss the common and \ or important wrist and hand problem

The Topics are:

- Radial Club Hand.
- Ulnar Club Hand.

- Madelung's Deformity.
- Kienbock's Disease.
- DeQuervain's Disease.
- Ganglion.
- Carpal Tunnel Syndrome.

The Hip

Objectives

1. Discuss the general anatomical point of the hip region
2. Discuss the congenital conditions occur in the hip region and concentrate on developmental dysplasia of the hip join
3. Review the causes pathology and the management of the Legg-Calve-Perthes disease
4. Discuss in detail the slipped upper femoral epiphysis and its complication.

The Topics are:

- Developmental Dysplasia Of The Hip
- egg-Calve-Perthes Disease (LCPD)
- Slipped Upper Femoral Epiphysis (SUFE).

THE KNEE…..

Objectives

1. Few anatomical words on the knee.
2. Discuss the most common deformities (developmental and acquired) of the knee.
3. Describe the sport injuries of the knee and its management.
4. List and discuss the causes of anterior knee pain.
5. Review the common causes for swelling around the knee.

The Topics are:

- Bow-Legs (Genu Varum).
- Knock-Knees (Genu Valgum).
- Blount's Disease (Tibia Vara).
- Meniscal Tears.
- Recurrent Dislocation Of The Patella
- Chondromalacia Patellae
- Osgood-Schlatter's Disease.

[redacted]

Objectives

1. Rview the functional anatomy and topography of the foot and ankle
2. Describe clinical and applied biomechanics of the foot and ankle
3. Specify the general considerations, clinical evaluation, and surgical options for clubfoot
4. Discuss treatment of congenital vertical talus

The Topics are:

- Anatomy and biomechanics
- Congenital Talipes Equinovarus (Club-Foot).
- Infantile Flat-Foot (Congenital Vertical Talus).

THE BACK…..

Objectives

1. Review general lines in history and examination of the spine disorders.
2. Discuss the etiology and manifestations of common spine disorders.
3. State the steps in treating infections of the spine including pyogenic and tuberculous infection.

The Topics are:

- History.
- Examination
- Imaging.
- Scoliosis.
- Kyphosis.
- Intervertebral Disc Lesions
- Lumbar Segmental Instability and Osteoarthritis.
- Spondylolisthesis.
- Spinal Stenosis.
- Infections of the Spine.
- The Backache Problems.

General Orthopedic

Objectives:

1. Discuss in detail the acute and chronic pyogenic infections of the bone and joint.
2. Recognize the tuberculous infection of the bone and joint.
3. Define Osteonecrosis and Osteochondritis of the joint and list the line of the management.
4. Discuss the orthopedic management of the rheumatoid arthritis.
5. List the new orthopedic advances in the management of osteoarthritis and degenerative bone disease.

The Topics are:

- Bone & joint infections
- Osteonecrosis
- Osteochondritis
- Rheumatoid arthritis
- Gouty arthritis
- Osteoarthritis

BONE TUMOR….

Objectives:

1. Differentiate between malignant bone-forming tumors and benign bone-forming tumors.
2. Compare and contrast the characteristics of benign cartilage tumors and malignant cartilage tumors.
3. Describe the various forms of destructive lesions that are found in the older patient population.
4. Discuss presentation, treatment, and prognosis of rare tumors.
5. State the three types of malignant fibrous lesions and list the characteristics of each lesion.

The Topics are:

- General principles……
- Bengin tumer…….
- Malignant bone tumor……

METABOLIC BONE DISORDERS…..

Objectives:

1. Review introduction to the bone metabolism.
2. Discuss clinical, radiological and biochemical assessment of metabolic bone disorders.
3. Recognize in detail osteoporosis, rickets, and Osteomalacia.

The Topics are:

- Clinical assessment.
- X-ray examination.
- Measurement of bone mass.
- Biochemical tests.
- Osteoporosis.
- Rickets And Osteomalacia.
- Paget's Disease (Osteitis Deformans).

GENETIC DISORDERS OF THE BONE…..

Objectives:

1. Explain the genetic regulation of the bone.
2. Discuss the inheritance of genetic bone disorders.
3. List the most common genetic bone disorder.

The Topics are:

- Osteogenesis Imperfecta.
- Neurofibromatosis.
- Mucopolysaccharidoses.
- Gaucher's Disease.

Methods and regulations of assessment

The general rules and regulations of assessment approved by the Iraqi fellowship board all are used in orthopedic council.

In addition to the successful completion of the training program, all candidates must successfully pass three exams in order to get the fellowship certificate.

Primary Exam

Trainees are allowed to sit for the first part exam after first year of training. The first part exam is a MCQ exam consists of two papers; first paper in applied basic sciences while the second paper in basic surgical sciences. Each candidate has three chances to pass the exam which will be held every 6 months, and one more additional chance is granted but the student will not pass to the third year unless he succeed in this trial

It is to be noted that after one year of training each time the candidate choose not to enter the exam will be calculated as one of his four attempts.

Mid-Exam

At the end of the third year the student must pass a mid-exam which consist of a written MCQ and Essay exam in basic fracture and orthopedic principles as well as a clinical exam with an OSPE or short case exam and a long case exam. The student must pass this exam within three attempts held every 6 months; otherwise he is kept in the fourth grade until he passes it through other trial.

Final Exam

Trainees are allowed to sit for the final exam after passing successfully the previous two exams and after completion of five years of training. In addition, each candidate must submit his logbook for final assessment. The log book requirements must all be completed and signed by the trainer and educational supervisor. The candidate shall also submit his audit or research project before the final exam. The project must be approved by supervisors and accepted by the committee representative to the scientific council.

The final exam is consist of:

- Part I : written exam with First paper of MCQs Second paper essay exam. Candidate must pass the written exam to join the final clinical exam, each successful written exam allow the candidate to join two clinical exams if he fails he must take the written exam again to join other clinical exams, final exam is held every six months. The candidate have the chance to join only four final exams through which he must pass the written and clinical exam otherwise he is expelled from the whole study program and never granted the degree.

- Part II : The final clinical exam includes OSPE or short case exam in addition to long case exam and an oral exam by four committees in variable specialties as follows:

1. General orthopedics and hand committee.
2. Fractures and traumatology committee.
3. Pediatric orthopedic committee
4. Spine surgery committee.