

**STUDY GUIDE THIRD YEAR BDS ORAL & MAXILLOFACIAL SURGERY**

ACADEMIC YEAR 2023



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1. **INTRODUCTION TO STUDY GUIDE:**

The study guide is prepared to introduce the 3rd year BDS students to the structure of teaching scheme both in the class and in Oral & Maxillofacial Surgery Department during their clinical rotations.

1. **OBJECTIVES OF THE DOCUMENT:**

The study guide is a preemptive document to assist the students in organizing their study plans throughout the year. It is to facilitate them in better understanding of the objectives of each lecture, demonstration, hands-on and clinical observation session.

1. **INTRODUCTION TO ORAL & MAXILLOFACIAL SURGERY:**

Oral and Maxillofacial Surgery (OMFS) is that specialty of Dentistry that encompasses the art and science of the diagnosis and surgical management of diseases, injuries, and defects of the Oral and Maxillofacial region. The OMFS curriculum is designed to train the students to provide services of oral surgery particularly of exodontia, for the management of patients in practice of general dentistry.

The OMFS Department is based at Lahore Medical & Dental College (LMDC) and Ghurki Trust Teaching Hospital (GTTH), Lahore. The clinical facility at the College has 27 dental units. Procedures under local anesthesia are conducted at LMDC and those under general anesthesia at GTTH.

1. **INTRODUCTION TO OMFS 3RD YEAR COURSE:**

* Course director: Prof Aqib Sohail

Principal College of Dentistry

Head Oral & Maxillofacial Surgery

* Course coordinator: Dr. Tayyaba Rafiq

Assistant Professor

* Academic Session : Six (6) months - lecture once a week on Friday
* Clinical session: Nine (9) months - Clinical batch come 3 days a week

1. **INTRODUCTION TO OMFS CLINICAL DUTIES & REQUIREMENTS:**

* Class is divided into 5 clinical rotation groups
* Each student in a group spends a total of 7-8 weeks in the Department of Oral & Maxillofacial Surgery during his / her 3rd year clinical rotation.
* Each student will be required to:

1. Obtain a minimum of 50% in their written qualifying test & OSCE / TOACS to be declared eligible for clinical viva with the head of department
2. Appear for viva voce with HOD Prof. Aqib Sohail and obtain at least 50% to receive the Quota / Log book.
3. Perform simple dental extractions under local anesthesia under direct supervision.
4. Maintain at least 90% clinical attendance.

* Record of clinical work will be maintained in **LOG BOOK**, which will be issued to students who are declared successful in qualifying examination (both written & viva).
* Each student will be allotted a topic of presentation, which they will prepare to present in their clinical group via whatever mode they feel comfortable with (eg white board, power point presentation etc)
* Total credit points will be declared at the end of the clinical rotation / duty, which will be carried to their 4th year BDS clinical rotation

1. **TEACHING OBJECTIVES:**

The teaching aims & objectives are designed in such a way that at the end of the designed curriculum, the students should be able to;

1. Evaluate and prepare patients for simple and complicated tooth extractions
2. Administer effective local anesthesia
3. Follow standard precautions for infection control during exodontia
4. Perform simple tooth extraction
5. Manage complications of exodontia
6. Recognize signs & symptoms of medical emergencies arising on dental units & deliver early management steps.
7. **TEACHING METHODOLOGIES / MODES OF INFORMATION TRANSFER:**

A diverse array of methodologies are employed throughout the entire 3rd year BDS OMFS academic & clinical year to navigate through the designed teaching plan. The strategies include the following;

* 1. Interactive lectures
  2. PBL sessions
  3. Hands-on exercises (on models / skills lab)
  4. Hands-on clinical demonstrations (OMFS department)
  5. Chair side / on patient teaching (OMFS department)
  6. Small group discussions (OMFS department)
  7. Clinical observations followed by discussions
  8. Videos
  9. Presentations by students

1. **STUDENT EVALUATION / ASSESSMENT**
2. ACADEMIC ASSESSMENT / EVLUATION:

**One (1)** written test will be conducted at the end of the six (6) months’ academic session, consisting of short answer questions (SAQs).

1. CLINICAL ASSESSMENT / EVLUATION:

* Each student will spend a total of 7-8 weeks in the Department of Oral & Maxillofacial Surgery during his / her 3rd year clinical rotation.
* Each student will be required to:

1. Obtain a minimum of 50% in written qualifying test & stand eligible to appear in the viva
2. Obtain a minimum of 50% in OSCE / TOACS
3. Appear for viva voce with HOD Prof. Aqib Sohail & qualify to receive the Quota / Log book.
4. Perform simple dental extractions under local anesthesia.
5. Maintain at least 90% clinical attendance.

* Record of clinical work will be maintained in the **LOG BOOK**, which will be issued to students who are declared successful in qualifying examination (both written & viva).

1. INTERNAL ASSESSMENT

**3 credits** out of the total internal assessment of OMFS in 4th year of BDS will be carried by the 3rd year academic & clinical assessment(which includes class attendance, class test’s result, clinical attendance & quota form evaluation).

1. **LEARNING OBJECTIVES - ACADEMICS**
2. TOPIC: PATIENT ASSESSMENT & HISTORY TAKING

Students should be able to:

* Outline important questions in history taking with reference to patient’s medical status and identify risk factors;
* Extremes of age
* Anxiety / stress level
* Existing systemic medical diseases
* Status / severity of the medical condition
* Patient co-operation level
* Relate the significance of risk factor identification through history taking and examination with un-eventful procedure
* Advise and interpret relevant radiographic investigations for dental evaluation
* Formulate a treatment plan for a patient presenting for simple exodontia, which includes;
* Consent
* Selection of armamentarium
* Anesthesia
* Extraction
* Post-operative care
* Follow-up
* Modify a conventional treatment plan as mentioned above with reference to the risk factors. Modifications may include one or multiple of the following;
* Choice of anesthesia (LA / Sedation / GA)
* Anxiety reduction protocol
* Selection of setting of procedure (out-patient / in-patient)
* Pre-medications
* Modification of existing medications

Patient referral to physician for consultation

Enlist important points of a referral letter to the patient’s physician for consultation with reference to the patient’s medical status

1. TOPIC: CROSS INFECTION CONTROL MEASURES, STERILIZATION, DISINFECTION & ANTISEPSIS

Students should be able to:

* Define the following terms
* Sterilization
* Disinfection
* Anti-sepsis
* Universal precautions
* Appreciate the normal microbiologic flora of oral cavity, which contains mainly;
* Gram-positive aerobic bacteria
* An-aerobic bacteria
* Streptococcus species
* Actinomyces species
* Candida species
* Enlist the potentially communicable pathogens, which include bacteria, viruses and mycobacterium
* Enlist measures which come under Universal Precautions for the prevention of disease transmission, and include the following;
* Engineering controls
* Needle re-sheathing: scoop technique
* Puncture resistant containers
* Handling of sharps
* Protective barrier devices
* Use of gloves, face mask, hair cap, gown, eye wear
* Use of disinfectants, surface barriers
* Biohazard management (handling & disposal)
* Management of sharp items
* Handling of contaminated waste
* Waste management companies
* Training of employees in Universal Precautions
* Management of accidental parenteral exposures
* Immediate steps of post exposure first aid
* Post exposure prophylaxis against Hepatitis B, C and HIV, depending upon the status of the patient and
* Immunization against hepatitis B
* Enlist the steps to limit spread of communicable diseases in a dental setup, which are;
* Infected patient to dental staff
* Identifying infected patients
* Barrier techniques
* Management of sharp items
* Hepatitis vaccination
* Infected patient to other patients
* Use of disposable items
* Sterilization
* Re-usable items
* Enlist the various types of sterilization, compare and contrast each of the following;
* Dry heat sterilization
* Moist heat sterilization
* Gas sterilization
* Enlist the general principles of sterilization
* Enlist the various types of chemical disinfectants used in dental clinics
* Enlist the various types of antiseptic agents used in dental clinics

1. TOPIC: MANAGEMENT OF MEDICALLY COMPROMISED PATIENTS IN DENTISTRY

Students should be able to:

* Generate relevant information from patient history and evaluate patient’s disease status for a simple extraction under local anesthesia
* Enlist risk factors for the management of medically compromised patients
* Categorize medically compromised patients according to the ASA classification system
* Discuss the steps of anxiety reduction protocol for highly anxious patient
* Enlist most commonly encountered medically compromised states, which may include the following;
* Hypertension
* History of myocardial infarction / angina
* History of CAGB / angioplasty
* Diabetes Mellitus
* Renal insufficiency
* Renal transplant patient
* Haptic insufficiency
* Asthma
* Tuberculosis
* Epilepsy
* Pregnancy / lactation
* Hematological disorders (congenital / acquired)
* Patients on steroids
* Hyperthyroidism
* Formulate a plan for performing an un-eventful simple extraction of a patient with above mentioned medically compromised states
* Prescribe post-extraction medications according to the patient’s disease status
* Justify the selection of medications with reference to the patient’s disease status

1. TOPIC: MANAGEMENT OF MEDICAL EMERGENCIES IN DENTAL CLINICS

Students should be able to:

* Identify risk factors for the development of medical emergencies in a dental chair, which may include;
* Extremes of age
* Anxiety / stress
* Pre-existing medical conditions
* Medical therapy
* Long appointments
* Recognize measures for prevention of medical emergencies in a dental clinic, which include;
* Complete physical evaluation
* ASA physical status classification
* Recognition of dental fear & anxiety
* Stress reduction protocol
* Environment control
* Preparation for emergency
* Emergency drug tray / kit kept close
* Selection of anesthesia
* LA / sedation / GA
* Enlist commonly encountered medical emergencies in a dental setup with relevance to the current medical status of the patient, which may include;
* Altered consciousness
* Hypo glycaemia
* Hypo / hyper-thyroidism
* CVA
* Loss of consciousness
* Vaso-depressor syncope
* Orthostatic hypotension
* Acute renal insufficiency
* Chest pain
* Angina / acute MI
* Respiratory distress
* Asthma
* Hyper-ventilation syndrome
* Foreign body obstruction
* Cardiac arrest
* Seizures
* epilepsy
* Recall the pathophysiology of the following medical emergencies
* Syncope
* Hyperventilation syndrome
* Acute adrenal insufficiency
* Chest pain
* Interpret clinical scenarios and recognize the possible medical emergency
* Devise a general protocol for management of an emergency, which includes;
* Patient re-positioning
* Monitoring of vital signs
* Assessment of airway and breathing
* Call for medical emergency services
* Establishment of IV line and oxygen (if indicated)
* Administration of relevant medications
* Enlist the components of a medical emergency tray / kit, which may include;
* Medicines
* Nitroglycerin
* Diazepam / midazolam
* Diphenhydramine
* Epinephrine
* Dextrose
* Aspirin / Morphine
* Bronchodilator: salbuatamol
* Corticosteroid: solu-cortef
* Supplies
* Ammonia ampules
* Disposable syringes
* Branula
* Drip set
* Tourniquet
* Airways
* Alcohol swabs
* AMBU bag
* Laryngoscope
* Crystalloid solutions – dextrose 50%, ringers lactate,
* Oxygen cylinder
* Oxygen mask with tubing
* Identify the clinical indications of each of the above mentioned drugs along with their doses

1. PRINCIPLES OF ORAL SURGERY – INCISION, FLAP DESIGN, SUTURING AND EXODONTIA

Students should be able to:

* Define flap
* Recognize the importance of each of the following basic principles of oral surgery in exodontia;
* Adequate visibility
* Good assistance
* A-septic technique
* Surgical planning
* Outline the principles of each of the steps of surgical planning, which are;
* Incision
* Flap design
* Suturing
* Explain the significance of the following principles of incision;
* Selection of sharp blade of appropriate size
* Single, firm, continuous stroke for incision making
* Blade held perpendicular to epithelial surface during incision
* Incision placement to prevent damage to vital structures
* Incisions made preferably over attached gingiva and healthy bone
* Explain the significance of the following principles of flap design, with relevance to prevention of complications;
* Base wider than apex & sides convergent towards apex
* Base of flap should be more than twice the length of flap
* Axial blood supply to be included in flap – if possible
* Avoid maneuvers to damage the vascular supply & lymphatics of flap
* Explain the significance of the following principles of suturing;
* Selection of appropriate instruments
* Selection of needle and thread of appropriate size and length
* Needle passed from mobile tissue to fixed tissue
* Needle should enter the tissue at right angle
* Ensure to take at least 3mm of tissue when passing needle through a flap
* Avoid tight knots to prevent necrosis
* Knot to be placed on either side of the incision
* Enumerate the indications and contraindications of tooth extractions
* Enlist steps of patient preparation for extraction under local anesthesia
* History taking and patient evaluation
* Identification of risk factors
* Assessment of tooth to be extracted
* Consent
* Selection of appropriate instruments
* Aseptic technique
* Selection of anesthesia technique
* Extraction
* Post-operative patient care, instructions
* Prescription writing
* Enlist relevant radiographic findings when evaluating a tooth for extraction

1. LOCAL ANESTHESIA IN DENTISTRY
2. **ANATOMY**

Students should be able to:

* Recall the sensory innervation of teeth and the supporting tissues, which is follows;
* Maxillary incisors and canines
* Anterior superior alveolar nerve: pulp, periodontium, labial soft tissues
* Naso-palatine: palatal soft tissue
* Maxillary premolars
* Middle superior alveolar nerve: pulp, periodontium, labial soft tissues
* Greater palatine: palatal soft tissue
* Maxillary molars
* Middle superior alveolar nerve: mesio-buccal root of 1st molar
* Posterior superior alveolar nerve: pulp, periodontium, buccal soft tissues
* Greater palatine: palatal soft tissue
* Mandibular incisors and canines
* Inferior alveolar nerve: pulp, periodontium
* Mental nerve: labial soft tissue
* Lingual nerve: lingual soft tissue
* Mandibular premolars
* Inferior alveolar nerve: pulp, periodontium
* Mental nerve: labial soft tissue
* Lon buccal nerve: labial soft tissue of 2nd premolar
* Lingual nerve: lingual soft tissue
* Mandibular molars
* Inferior alveolar nerve: pulp, periodontium
* Long buccal nerve: buccal soft tissue
* Lingual nerve: lingual soft tissue
* Recall the root morphology of teeth, with reference to their number and position in the alveolus;
* Maxillary incisors, canines, 1st premolar: 1
* Maxillary 2nd premolar: 2
* Maxillary molars: 3
* Mandibular incisors, canines, premolars: 1
* Mandibular molars: 2

1. **ARMAMENTARIUM**

Students should be able to:

* Enlist the armamentarium required for administration of local anesthesia, which includes;
* Local anesthetic syringe
* Needles
* LA cartridge
* State the specifications of the local anesthetic needles used in dentistry
* Gauge: 27
* Length: 25mm, 42 mm
* Classify and differentiate between the types of LA syringes used in dentistry, which are;
* Self-aspirating type
* Non-aspirating type
* State the volumes of commonly used LA cartridges
* 1.8 ml
* 2.2 ml
* Enlist the composition of 1.8 ml local anesthetic cartridge containing 2% lidocaine with 1:100,000 epinephrine
* Lidocaine - 2% (36 mg)
* Epinephrine - 1:100,000 (0.0324 mg)
* Sodium chloride
* Sterile water
* Sodium meta bisulphite

1. **BASIC PHARMACOLOGY**

Students should be able to:

* Define and differentiate between the following terms;
* Anesthesia
* Analgesia
* Classify local anesthetic agents as follows;
* Amides
* Procaine
* Propoxycaine
* Esters
* Lignocaine
* Mepivacaine
* Prilocaine
* Articaine
* Bupivacaine
* Etidocaine
* Recall the mechanism of action of lidocaine, which is the blockade of voltage-gated sodium channels from inside the nerve
* Define the following terms;
* pKa
* PH
* Recall the pH of the following;
* Normal tissue: 7.4
* Inflamed tissue: 5-6
* Cartridge with epinephrine: 3.5
* Cartridge without epinephrine: 6.5
* Co-relate the change in the value of tissue pH with the effectiveness and depth of anesthesia
* Compare and contrast lignocaine with articaine and bupivacaine on basis of their duration of anesthesia and side effects
* Justify the selection of lidocaine as the commonly used anesthetic agent on the basis of following aspects;
* Desirable onset and duration of action
* Recall the maximum safe dose of lidocaine as 5mg/kg body weight
* Interpret clinical scenarios and calculate maximum safe dose of lidocaine and the number of LA cartridges to be used for a patient with known body weight
* Recall the basic knowledge of pharmacology and enlist the systemic effects of lidocaine and epinephrine

1. **ANESTHESIA TECHNIQUES**

Students should be able to:

* Define and differentiate between the following anesthesia techniques;
* Topical
* Infiltration
* Nerve block
* Appreciate the significance of topical anesthesia in dentistry
* Recall the agents used for the above mentioned technique
* Benzocaine
* Lidocaine 5%
* EMLA
* Name commonly used techniques used for achieving effective local anesthesia for exodontia;
* Infiltrations (buccal / lingual / palatal)
* Mandible blocks
* Inferior alveolar
* Mental
* Long buccal
* Lingual
* Gow-gates
* Vazirani Akinosis
* Maxillary blocks
* Infra-orbital
* Posterior superior
* Naso-palatine
* Greater-palatine
* Supplemental techniques
* Intra-pulpal
* Intra-ligamental
* Discuss the above mentioned LA techniques on following aspects ;
* Nerves to be anesthetized
* Area of anesthesia
* Patient and operator position
* Landmarks
* Quantity of anesthetic agent to be used
* Complications associated with the technique
* Appreciate the concept of aspiration for prevention of intra-vascular administration of anesthetic agent
* Enlist the steps of local anesthesia administration
* Selection of needle
* Checking flow of LA solution
* Patient positioning
* Preferably supine with heart & head parallel to floor
* Injection site preparation & tissue retraction
* Topical anesthesia application
* Communicate & inform about all steps
* Establish firm hand rest
* Make tissue taut
* Insert & advance towards target
* Aspirate 2x
* Slow deposition of solution
* Withdraw syringe & recap needle
* Observe patient after injection
* Check for effectiveness

1. **COMPLICATIONS**

Students should be able to:

* Enlist possible complications associated with various local anesthesia techniques;
* Local complications
* Needle breakage
* Pain on injection
* Burning on injection
* Persistent anesthesia
* Trismus
* Hematoma
* Infection
* Edema
* Tissue necrosis sloughing
* Soft tissue injury
* Facial nerve palsy
* Post-anesthesia lesions
* Systemic complications
* Drug overdose
* Allergic reaction
* Interpret clinical scenarios and formulate plans for the prevention and management of above mentioned complications of local anesthesia

1. TOPIC: ERGONOMICS IN ORAL SURGERY

Students should be able to:

* Define ergonomics
* Identify common mistakes made in operator and patient positioning, during extraction
* Enlist the steps of patient positioning for extraction of following;
* Maxillary teeth
* Dental unit reclined
* Patient’s neck extended
* Maxillary occlusal plane 60 degrees to floor
* Chair height - mouth at operator’s elbow level
* Operator’s non-dominant hand holds / supports the maxillary alveolus
* Patient’s head turned slightly towards the operator
* Mandibular teeth
* Patient positioned upright
* Mandibular occlusal plane – parallel to floor on wide opening
* Chair height – patient mouth ‘at’ / ‘below’ elbow level
* Operator’s non-dominant hand supports / holds mandible
* Enlist the steps of operator positioning for tooth extraction
* Operator’s dominant arm tilted downwards – 90-100 ͦelbow angle
* Neck bending not more than 15 ͦ
* Operator’s back straight, bending not more than 20 ͦ forward
* Arms close to body
* Wrist straight
* Avoid raised shoulder
* Avoid leaning on patients
* Operator position for maxillary teeth: 7-8 O’ clock
* Operator position for right mandibular teeth
* LA: 7 O’clock
* Extraction: 11 O’clock
* Operator position for left mandibular teeth
* LA: 11 O’clock
* Extraction: 7 O’clock

1. TOPIC: RECOGNITION AND MANAGEMENT OF INTRA & POST-OPERATIVE COMPLICATIONS OF EXODONTIA

Students should be able to:

* Enlist intra operative complications associated with a simple tooth extraction, which may include;
* Excessive bleeding
* Root / tooth fracture
* Damage to adjacent teeth
* Damage to adjacent restorations
* Tooth / root displacement to
* Potential soft tissue spaces
* Pharynx
* Soft tissue injuries
* Mucosal lacerations / tear
* Hard tissue injuries
* Maxillary tuberosity fractures
* Alveolar fractures
* Jaw fracture
* Wrong tooth extractions
* Oro-antral communication
* Damage to adjacent vital structures
* Damage to temporo-mandibular joint
* Recognize post-operative complications associated with a simple tooth extraction, which may include;
* Pain
* Post-operative bleeding
* Trismus / limited mouth opening
* Edema
* Wound healing disturbances
* Delayed healing
* Alveolar osteitis
* Wound dehiscence
* Oro-antral fistula
* Infection
* Interpret scenarios with given clinical assessment findings and formulate a treatment plan for the above mentioned complications

Devise a plan for the prevention of the above mentioned complications during routine exodontia

1. TOPIC: POST-OPERATIVE CARE AND PRESCRIPTION WRITING FOR EXODONTIA

Students should be able to:

* Enlist steps of post extraction wound care, which include the following;
* Socket examination for fractured bone, sharp edges, residual root, calculus, debri etc
* Residual socket irrigation with saline
* Compression of bucco-lingual plates
* Hemostasis
* Enlist and recognize the significance of the post extraction wound care instructions, which cover the following aspects;
* Maintenance of oral hygiene
* Management of post-operative bleeding
* Management of post-operative pain
* Wound / extraction socket care
* Diet modifications
* Medications
* Effects of local anesthesia
* Select relevant medications keeping in mind the patient’s medical status, for management of post extraction pain and / or infection
* Defend the selection of medications

1. TOPIC: ROLE OF ANTIBIOTICS IN DENTISTRY

Students should be able to:

* Define the following terms
* Therapeutic antibiotics
* Prophylactic antibiotics
* Recognize the concept of therapeutic antibiotics and state the following aspects;
* Clinical situations where it is necessary
* Clinical situations where it is not considered necessary
* Most appropriate drug regimes in various clinical scenarios
* Principles of empirical antibiotic regime
* Recognize the concept of antibiotic prophylaxis and state the following aspects;
* Clinical situations where it is necessary
* Clinical situations where it is not considered necessary
* Most appropriate drug regimes in various clinical scenarios
* Cardiac conditions associated with high risk of metastatic infection hence requiring prophylaxis
* List of dental procedures which
* Require antibiotic prophylaxis
* Do not require antibiotic prophylaxis
* Principles of prophylaxis of wound infection, which are
* Risk assessment for infection
* Selection of appropriate antibiotics
* High antibiotic plasma level
* Appropriately timed drug administration
* use minimal effective drug exposure

1. TOPIC: ASSESSMENT AND MANAGEMENT OF IMPACTED THIRD MOLARS

Students should be able to:

* Define and distinguish between the following terms;
* Impacted tooth
* Un-erupted tooth
* Enumerate reasons for an impacted tooth, which can be one or multiple of the following;
* Inadequate dental arch space
* Retained deciduous counterpart
* Long, tortuous path of eruption
* Dental crowding
* Supernumerary teeth
* Presence of a pathology (cyst / tumor)
* Thick overlying soft tissue
* Genetic predisposition
* Enlist clinical indications of prophylactic impacted tooth removal, these may include;
* Prevention of
* Periodontal diseases
* Dental caries
* Pericoronitis
* Root resorption
* Cysts and tumors
* Jaw fractures
* Teeth under dental prosthesis
* Facilitate orthodontic treatment
* Enlist clinical situations where removal of impacted teeth is not desirable, which may include the following;
* Extremes of age
* Compromised medical status
* Probable damage to adjacent vital structures
* Recall the pathologies associated with impacted third molars, which are;
* Pericoronitis
* Dental caries
* Periodontal diseases
* Cysts and tumors
* Summarize key clinical features essential for impacted tooth assessment, which are;
* Inter-incisal opening
* Signs of infection (extra and intra oral)
* Tooth visibility in oral cavity (erupted / partially erupted / un-erupted)
* Status of adjacent teeth
* Tongue and cheek size
* Patient co-operation and compliance
* Anxiety level
* Enlist relevant investigations for radiographic assessment and localization of impacted third molars. These include
* Peri-apical view
* OPG
* Cone beam CT scan
* CT scan
* Summarize key radiographic features essential for impacted tooth assessment, which are;
* Third molar position with reference to
* Ramus of mandible
* Adjacent tooth
* Depth
* Angulation
* Root morphology and number
* Relation of vital structures such as inferior alveolar nerve canal
* Existing pathologies
* Bone quality
* Classify impacted mandibular teeth according to the following classification systems;
* Pell and Gregory
* Angulation

(Mesio-angular, disto-angular, vertical, horizontal)

* Ramus relation

(Class I, II, III and Depth A, B, C))

* Winter’s (White, amber & red lines)
* Interpret various clinical scenarios involving patients with impacted teeth and formulate a plan for extraction under local anesthesia. The plan may broadly consist of following steps;
* Detailed history and patient examination
* Relevant radiographic investigations
* Management of acute disease e.g pericoronitis
* Scaling and irrigation
* Anti-septic mouth washes
* Medications (analgesics, antibiotics)
* Mouth opening exercises
* Patient counseling and consent
* Surgical procedure under LA / sedation / GA
* A-septic technique
* Selection of armamentarium
* Local anesthesia
* Incision Flap design and exposure
* Ostectomy
* Tooth sectioning according to its position / angulation
* Retrieval of sectioned segments
* Luxation and retrieval of roots
* Bone filing, curettage and socket irrigation
* Hemostasis
* Flap repositioning and suturing
* Post-operative care instructions and medications
* Follow-up
* Recognize complications that may arise with the surgical removal of impacted third molars. These may include;
* Intra-operative complications
* Root / tooth fracture
* Root / tooth displacement
* Adjacent tooth damage
* Damage to adjacent restorations
* Injury to vital structures eg nerve
* Bone fracture
* Excessive bleeding
* Post-operative complications
* Pain
* Swelling / edema
* Bleeding
* Alveolar osteitis
* Infection
* Paresthesia
* Trismus
* Formulate a plan for prevention and management of above mentioned complications
* Recall the controversies / myths associated with prophylactic removal of impacted teeth

1. TOPIC: MEDICO-LEGAL CONSIDERATIONS IN DENTISTRY

Students should be able to:

* Define the following terms;
* Malpractice
* Negligence
* Consent
* Enlist various types of consent and differentiate between the following;
* Implied
* Informed
* Written
* Relate the significance of consent & the information transferred to patient during consent with decision making
* Enlist key points of information, mandatory for consent taking, which are;
* Nature of problem
* Reason why treatment is necessary
* Proposed treatment plan
* Risks vs. benefits of the proposed plan
* Anticipated problems / complications (with frequency of occurrence)
* Planned anaesthesia
* Alternative treatment options
* Who will perform the procedure
* Answer patient’s queries
* Identify clinical situations which will be considered as acts of negligence, and may include the following;
* Failure to adequately practice cross infection control measures
* Failure to adequately explain procedures & their possible outcomes
* Treat beyond the level of competence & failure to refer
* Lack of informed consent
* Accidental ingestion of crown, dental instrument or tooth by patient
* Failure to give clear post-operative instructions, causing complications
* Identify clinical situations which will not be considered as acts of negligence, and may include the following;
* Not obtaining consent in emergency
* Patients dissatisfaction with the treatment
* Patient not following doctor’s advice
* Charging for the treatment / procedure
* Appreciate the concept of risk reduction to minimize potential legal liabilities in a dental set-up
* Interpret the importance of each step of above mentioned concept, which include the following;
* Effective dentist - patient / staff - patient communication
* Patient information
* Informed consent
* Proper documentation
* Appropriate management of complications
* Patient referral where appropriate

Synthesize a plan to handle situations in case of a medical / dental mishap

1. TOPIC: ROLE OF SEDATION AND GENERAL ANESTHESIA IN DENTISTRY

Students should be able to:

* Define the following terms;
* Sedation
* General anesthesia
* Compare & contrast between the above mentioned
* Enlist various types of sedation & recall the drugs used for the following
* Oral
* Inhalation
* Intra-venous
* Enlist and recognize the importance of above mentioned in various clinical situations, like;
* Un-cooperative patient management
* Pediatric group
* High anxiety level
* Mentally handicapped patients
* Major surgical procedures
* State the protocol of patient preparation for sedation / GA
* Recall the steps / methods of patient monitoring undergoing general anesthesia / sedation

1. **LEARNING OBJECTIVES - CLINICAL**
2. TOPIC: PATIENT ASSESSEMENT AND HISTORY TAKING:

Students should be able to:

* Take adequate history of patient
* Perform a preliminary patient examination for simple a extraction, including;
* Basic general physical examination including vital signs assessment (pulse & blood pressure)
* Basic head and neck examination
* Oral cavity
* TMJ and muscles of mastication
* Lymph nodes
* Major salivary glands
* Identify risk factors through history taking and examination
* Advise and interpret relevant investigations for dental evaluation
* Conclude the above steps with a diagnosis (which should be an indication of tooth extraction)
* Write a referral letter to the patient’s physician and consult with reference to the patient’s medical status (if required)
* Formulate a treatment plan for extraction
* Take consent from the patient for simple extraction under local anesthesia

1. TOPIC: LOCAL ANESTHESIA IN DENTISTRY:

Students should be able to:

* Administer local anesthesia by following the basic guidelines, as below;
* Select appropriate needle
* Check flow of LA solution
* Patient positioning (Preferably supine with heart & head parallel to floor)
* Injection site preparation & tissue retraction
* Topical anesthesia application
* Communicate & inform about all steps
* Establish firm hand rest
* Make tissue taut
* Insert & advance towards target
* Aspirate 2x
* Slow deposition of solution in appropriate quantity
* Withdraw syringe & recap needle
* Observe patient after injection
* Check for effectiveness
* Subjective assessment

(Extent of soft tissue numbness)

* Objective assessment

(Deep probing)

* Identify clinical landmarks for the following anesthesia techniques;
* Infiltration / supra-periosteal injection (maxillary and mandibular)
* Palatal infiltrations
* Naso-palatine nerve block
* Anterior / greater palatine nerve block
* Infra-orbital nerve block technique
* Posterior superior alveolar nerve block
* Standard inferior alveolar nerve block
* Long buccal nerve block
* Lingual nerve block
* Mental nerve block
* Recognize and manage clinical signs and symptoms associated with complications of local anesthesia, which may include;
* Local complications
* Systemic complications

1. TOPIC: PRINCIPLES OF EXODONTIA:

Students should be able to:

* Identify the instruments / armamentarium used for local anesthesia and routine exodontia, which may include;
* Examination set (mirror, tweezers and probe)
* LA syringe
* LA cartridge & needles
* Maxillary and mandibular full tooth extraction forceps
* Maxillary and mandibular BDR forceps
* Periosteal elevators
* Root / tooth elevators
* Coupland elevator
* Warwick James elevators (straight & curved)
* Cryer elevators
* Soft tissue retractors
* Adjust the position of the dental unit / patient for LA and extraction by following the principles of ergonomics
* Select appropriate instruments for simple extraction
* Perform a tray set up by following the a-septic guidelines
* Perform a simple extraction using forceps and / or elevators by following the mechanical principles
* Apply extraction forces in a controlled manner while protecting the adjacent soft tissues (lip, cheek, tongue, mucosa) and hard tissues (bone, adjacent and opposite teeth)
* Support the patient’s head / jaw / alveolus with the non-dominant hand
* Perform an a-traumatic extraction
* Perform steps of post extraction socket care, which include the following;
* Socket examination for fractured bone, sharp edges, residual root, calculus, debris etc
* Thorough irrigation with saline
* Compression of bucco-lingual plates
* Hemostasis
* Apply simple interrupted / figure-of-eight suture if required
* Explain post extraction wound care instructions to the patient in easy language to facilitate patient understanding
* Write a prescription of relevant medications after a simple extraction of one or multiple teeth, keeping in mind the patient’s medical status
* Write adequate post-operative notes in patient’s chart / hospital record books before discharge

1. TOPIC: RECOGNITION AND MANAGEMENT OF EXTRACTION COMPLICATIONS:

Students should be able to:

* Recognize and manage intra operative complications associated with a simple tooth extraction, which may include;
* Excessive bleeding
* Root / tooth fracture
* Damage to adjacent teeth
* Damage to adjacent restorations
* Tooth / root displacement to
* Potential soft tissue spaces
* Pharynx
* Soft tissue injuries
* Mucosal lacerations / tear
* Hard tissue injuries
* Maxillary tuberosity fractures
* Alveolar fractures
* Jaw fracture
* Wrong tooth extractions
* Oro-antral communication
* Damage to adjacent vital structures
* Damage to temporo-mandibular joint
* Recognize and manage post-operative complications associated with a simple tooth extraction, which may include;
* Pain
* Post-operative bleeding
* Oro-antral fistula
* Wound healing disturbances
* Delayed healing
* Alveolar osteitis
* Wound dehiscence
* Infection

1. TOPIC: RECOGNITION AND MANAGEMENT OF MEDICAL EMERGENCIES:

Students should be able to:

* Recognize clinical signs and symptoms of the following medical emergencies;
* Altered consciousness
* Hypo glycaemia
* Hypo / hyper-thyroidism
* CVA
* Loss of consciousness
* Vaso-depressor syncope
* Orthostatic hypotension
* Acute renal insufficiency
* Chest pain
* Angina / acute MI
* Respiratory distress
* Asthma
* Hyper-ventilation syndrome
* Foreign body obstruction
* Cardiac arrest
* Seizures
* epilepsy
* Initiate the preliminary steps of emergency management and simultaneously call of medical help. The steps include;
* Patient re-positioning
* Monitoring of vital signs
* Assessment of airway and breathing
* Call for medical emergency services
* Establishment of IV line and oxygen (if indicated)
* Administration of relevant medication

1. **ACADEMIC CALENDER**

|  |  |  |  |
| --- | --- | --- | --- |
|  | **DATE** | **TOPIC OF DISCUSSION** | **FACILITATOR** |
|  | 7th April 2023 | Introduction to OMFS | Prof Aqib Sohail |
|  | 14th April 2023 | Patient assessment & preparation for exodontia. Role of consent | Dr. Tayyaba Rafiq |
|  | 21st April 2023 | Principles of routine exodontia. Armamentarium for exodontia. Introduction to Dental ergonomics | Dr. Tayyaba Rafiq |
|  | 28th April 2023 | Medico legal aspects & ethics – part 1 | Prof Amir Bashir |
|  | 5th May 2023 | Medico legal aspects & ethics – part 2 | Prof Amir Bashir |
|  | 12th May 2023 | Medico legal aspects & ethics – part 3 | Prof Amir Bashir |
|  | 19th May 2023 | Management to medically compromised patients & medical emergencies in dentistry- 1 | Dr. Tayyaba Rafiq |
|  | 26th May 2023 | Management to medically compromised patients & medical emergencies in dentistry- 2 | Dr. Tayyaba Rafiq |
|  | 2nd June 2023 | Management to medically compromised patients & medical emergencies in dentistry- 3 | Dr. Tayyaba Rafiq |
|  | 9th June 2013 | PBL SESSION | Prof Aqib Sohail / Dr. Tayyaba Rafiq |
|  | 16th June 2023 | Cross infection control & medical waste management | Dr. Tayyaba Rafiq |
|  | 23rd June 2023 | Needle stick injury & post exposure prophylaxis | Dr. Tayyaba Rafiq |
|  | 30th June 2023 | **Summer vacation: 24th June-2nd July 2023** | ---- |
|  | 7th July 2023 | Anxiety control & role of sedation | Dr. Tayyaba Rafiq |
|  | 14th July 2023 | Complications of exodontia & their management | Dr. Nighat Zahid |
|  | 21st July 2023 | Management of impacted teeth | Prof Aqib Sohail |
|  | 28th July 2023 | **ASHURA HOLIDAYS** | ---- |
|  | 4th Aug 2023 | Wound healing in oral cavity & its complications | Dr. Fareed Chishti |
|  | 11th Aug 2023 | Principles of Oral & Maxillofacial surgery  Incision, flap design & suturing | Dr. Nighat Zahid |
|  | 18th Aug 2023 | Local anesthesia – introduction to basics | Dr. Tayyaba Rafiq |
|  | 25th Aug 2023 | Local anesthesia – Mandibular & maxillary techniques | Dr. Tayyaba Rafiq |
|  | 1st Sep 2023 | Local anesthesia – supplemental techniques & complications | Dr. Tayyaba Rafiq |
|  | 8th Sep 2023 | Complicated exodontia | Dr. Tayyaba Rafiq |
|  | 15th Sep 2023 | Post extraction patient care & prescription writing | Dr. Tayyaba Rafiq |
|  | 22nd Sep 2023 | Medications in dentistry (antibiotics & analgesics)  Basic concept of prophylactic & therapeutic antibiotics | Dr. Tayyaba Rafiq |
|  | 29th Sep 2023 | **END OF SESSION ASSESSMENT EXAM** | **----** |

1. **CLINICAL CALENDER**

|  |  |  |  |
| --- | --- | --- | --- |
|  | **TOPIC OF DISCUSSION** | **FACILITATOR** | **MIT** |
| Day 1 | Instrumentation for basic oral surgery & Principles of Routine exodontia | Dr. Tayyaba Rafiq | Skills lab / Hands-on demonstration |
| Day 2 | Pre-operative health status evaluation & planning for extraction - Part 1 | Dr. Tayyaba Rafiq | Small group discussion |
| Day 3 | Pre-operative health status evaluation & planning for extraction - Part 2 | Dr. Tayyaba Rafiq | Small group discussion |
| Day 4 | **QUALIFYING TEST PART 1: TOACS**  **CLINICAL DISCUSSION WITH PROF AQIB SOHAIL** | | |
| Day 5 | Prevention & management of medical emergencies on dental chair- Part 1 | Dr. Tayyaba Rafiq | Hands-on demonstration / Chair side discussion / Videos |
| Day 6 | Prevention & management of medical emergencies on dental chair- Part 2 | Dr. Tayyaba Rafiq | Hands-on demonstration / Chair side discussion / videos |
| Day 7 | Local anesthesia - Part 1: introduction to basics | Dr. Tayyaba Rafiq | Small group discussion / hands-on discussion / videos |
| Day 8 | Local anesthesia - Part 2: anesthesia techniques & their clinical implications | Dr. Tayyaba Rafiq | Hands-on demonstration / Chair side discussion / videos |
| Day 9 | Exodontia – part 1 | Dr. Tayyaba Rafiq | Small group discussion / clinical observations with discussion |
| Day 10 | Exodontia – part 2 | Dr. Tayyaba Rafiq | Small group discussion / clinical observations with discussion |
| Day 11 | **WRITTEN QUALIFYING TEST + OSCE** | | |
| Day 12 | **VIVA VOCE WITH PROF AQIB SOHAIL – DAY 1** | | |
| Day 13 | **VIVA VOCE WITH PROF AQIB SOHAIL – DAY 2** | | |
| Day 14-15 | CLINICAL OBSERVATIONS FOLLOWED BY DISCUSSIONS of students eligible for ‘on-patient’ work | | |
| Day 15-24 | CLINICAL / ON-PATIENT WORK + CHAIR SIDE DISCUSSIONS  + SELF DEDICATED STUDY + STUDENT PRESENTATIONS | | |

1. **TEACHING HOURS ALLOCATION**

* OMFS lectures are conducted once a week, for a total of six (6) months.
* The class is divided into 5 clinical groups, each spending an average of 7-8 weeks in OMFS department during their clinical rotation.
* Each group in engaged in a total of 11.5 clinical teaching hours per week.

|  |  |  |
| --- | --- | --- |
| **ACTIVITIES** | **NO OF WEEKS** | **NO OF HOURS** |
| CLINICAL TEACHING  (@11.5/week per batch) | 8x5=40 | 92 (x5=460) |
| CLASSROOM TEACHING (@1/week) | 24 |  |

1. **PATIENT MANAGEMENT PROTOCOL:**

* The clinical supervisors ensure that patients’ treatment is being carried out expeditiously.
* Every patient is first examined in the OPD before start of a procedure
* Those with scheduled appointments are managed straightaway in indoor, prior to other patients
* Procedural details are discussed with every patient before the surgery and a signed consent form obtained prior to donning gloves
* Relevant payment / procedure charges are made before the start of procedure
* Attendants are not allowed to stay with the patient during procedure, except in pediatric and handicapped cases.

1. **RULES AND REGULATIONS FOR ROTATION IN OMFS DEPARTMENT:**

* Careful grooming, personal hygiene maintenance along with neat & clean appearance reflects essential traits of good surgical management
* Students are required to dress in suitable attire when reporting to oral surgery department
  + Hair of shoulder length should be tied, pinned back and a surgical cap worn
  + Clean white lab coats / overall with name tags should be worn
  + Students failing to meet the department standards will not be permitted to work in the department
* Clinical supervisors will assign patients of suitable difficulty level to each student who stands eligible.
* Student are required to
  + Ensure presence of a completed medical history questionnaire in the record
  + Review the patient’s medical history and dental problems
  + Perform brief head & neck and an oral examination
  + Record vital signs including BP and pulse
  + Review radiographs, if already done.
  + Make a diagnosis and carve out a treatment plan
  + Clearly state the tooth / teeth to be extracted on that specific visit by them
  + Obtain a signed consent form for anesthesia and the procedure on departmental register & their logbooks
  + Perform all procedures under direct supervision
  + Give appropriate verbal and written instructions for post-operative care
  + Write an appropriate prescription for pain control
  + Record the treatment done and sign the patient record
  + Get supervisor’s signature on the record
* Students are supposed to exercise a degree of sensitivity while observing surgical procedures. Extraneous conversations and comments regarding the surgery being performed, may accentuate an already anxious situation for the patient.
* Principles of a-sepsis are to be adhered to at all possible levels.
  + Rings and wrist watches should not be worn during procedures
  + Wearing of surgical masks, gloves, eye protection & surgical gown during examination and surgery is mandatory
  + Used instruments should be returned to the sterilization room by the operator him / herself.
* Sitting on the dental chairs and table counters is not allowed in the Oral and Maxillofacial surgery department.
* Students who have completed their clinical rotations in the department, will not be allotted patients until specifically permitted by the head of department.

1. **CLINICAL ATTENDENCE RECORD:**

* Daily attendance is updated by the respective in-charge / supervisor.
* Students are directed to follow their working schedule / roster.
  + They are not allowed to leave the department without prior information
  + Repeated unexcused tardiness and absences will result in dismissal from the rotation

1. **EXAMINATION / ASSESSMENT PLANNER**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | **TEST** | **DATE / WEEK** | **EXAMINEE** | **FORMAT** | | |
|  | QUALIFYING EXAM | April 2023  Week 4 of clinical rotation | Batch E,F | SAQ | OSCE | VIVA |
|  | QUALIFYING EXAM | June 2023  Week 4 of clinical rotation | Batch C,D | SAQ | OSCE | VIVA |
|  | QUALIFYING EXAM | Aug 2023  Week 4 of clinical rotation | Batch A,B | SAQ | OSCE | VIVA |
|  | QUALIFYING EXAM | Oct 2023  Week 4 of clinical rotation | Batch I,J | SAQ | OSCE | VIVA |
|  | QUALIFYING EXAM | Dec 2023  Week 4 of clinical rotation | Batch G,H | SAQ | OSCE | VIVA |
|  | END OF SESSION EXAM | Last week of academic session | Whole class | Written - SAQ | | |

1. **TIME TABLE**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Day** | **8:00am to 9:00am** | **9:00am to 9:30am** | **9:30am to 2:30pm** | |
| **Monday** | **---** | **---** | **Oral & Maxillofacial Surgery clinical duty** | |
| **Tuesday** | **--** | **--** | **--** | **11:30am to 2:30pm**  **Oral & Maxillofacial Surgery clinical duty** |
| **Wednesday** | **--** | **--** | **--** | |
| **Thursday** | **--** | **--** | **--** | |
| **Friday** | **8:00am to 8:45am** | **8:45am to 9:30am** | **9:30am to 1:00pm** | |
| **--** | **Oral Surgery Lecture**  **Lecture Theater No. 7** | **Oral & Maxillofacial Surgery clinical duty** | |

1. **RECOMMENDED BOOKS**
2. Contemporary Oral & Maxillofacial Surgery (7th Ed, 2019)

James R. Hupp, Myron R. Tucker

1. Handbook of Local Anesthesia (7th Ed, 2020)

Stanley F. Malamed

1. **REFERENCE BOOKS**
2. Medical Emergencies in the Dental Office (7th Ed, 2015)

Stanley F. Malamed

1. Scully’s Medical Problems in Dentistry (7th Ed, 2015)

Crispian Scully