

STUDY GUIDE

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| PROGRAM | BDS |
| COURSE TITLE | Oral and Maxillofacial Surgery |
| ACADEMIC YEAR | 4th Year, 2023 |
| INTRODUCTION | Oral and Maxillofacial Surgery is a surgical specialty dealing with the diagnosis, surgical and adjunctive management of diseases, injuries and defects involving both the functional and esthetic aspects of the hard and soft tissues of the mouth, jaws, face and the neck region. |
| RATIONALE | It is important for the student to learn basics of oral and maxillofacial surgery and acquire core skills such as performing minor oral surgical procedures independently during their academic and post academic tenure. It is crucial to recognize disease, both general and oral; dentoalveolar surgery and an understanding of the available specialist scope for appropriate referral of the patients are soundly taught. |
| DEPARTMENTS INVOLVED | Oral and Maxillofacial Surgery |
| COURSE OUTCOMES | By the end of the course on Oral and Maxillofacial Surgery, final year BDS students will be able to manage patients with common Oral Surgery related conditions under supervision |
| COURSE OBJECTIVES | <p>By the end of the course, the students will be able to:</p> <p><u>BASIC PRINCIPLES OF ORAL AND MAXILLOFACIAL SURGERY</u></p> <ul style="list-style-type: none">• Discuss the formulation of treatment plan for the patient presenting in oral surgery on the basis of history, clinical examination and investigations• Identify transmissible pathogenic organisms pertinent to practice of oral and maxillofacial surgery• Define the aseptic techniques, universal precautions and post-surgical asepsis• Enlist and define the various techniques of sterilization and disinfection and maintenance of sterility• Discuss the various types of incisions and flap designs |

- Enlist principles of tissue handling
- Describe complication of improper tissue handling
- Explain hemostasis and various means of promoting wound healing
- Discuss dead space management
- Discuss infection control
- Explain the causes of tissue damage
- Describe wound repair and epithelialization
- Define facial neuropathy of traumatic origin
- Describe the classifications of nerve injury
- Describe the methods of nerve healing, tissue repair and reconstruction

MEDICAL ASPECTS OF ORAL SURGERY

- Explain how Oral and Maxillofacial Surgery procedures can exaggerate the pre-existing medical and surgical conditions
- Describe appropriate prophylactic measures to be taken before treatment
- Diagnose dental problems in medically compromised patient
- Discuss management of patient with the following medical conditions:
 - Cardiovascular diseases
 - Respiratory diseases
 - Diabetes mellitus
 - Immunosuppression
 - Blood dyscrasias
 - Radiation therapy of Head and Neck
 - Bisphosphonate-related osteonecrosis of the jaw
 - Prosthetic Implants
 - Renal Diseases and transplant
 - Osteoporosis

ANESTHESIA AND SEDATION

- Classify local anesthesia, general anesthesia and sedation

- Describe the pharmacology of local anesthesia, sedation
- Describe pre-requisites for local anesthesia, general anesthesia and sedation for oral and maxillofacial surgical procedures
- Interpret investigations carried out for administration of local anesthesia, general anesthesia and sedation
- Discuss selection criteria for patients undergoing oral and maxillofacial procedures under local anesthesia, general anesthesia and sedation
- Discuss indications and contraindications of general and local anesthesia and sedation
- Describe mechanism of action of local anesthetic and sedative agents
- Identify and discuss the local and systemic complications pertinent to local anesthesia and sedation
- Discuss conventional and specialized technique acquired for administration of local anesthesia

EXODONTIA

- Discuss the following steps as a prerequisite for tooth extraction:
- Pain and anxiety control
- Pre surgical medical assessment
- Clinical evaluation of teeth for removal
- Radiographic examination of tooth for removal
- Identify instruments used for:
- Incising tissue
- Elevating mucoperiosteum
- Retracting soft tissue
- Controlling hemorrhage
- Grasping tissue
- Removing bone
- Removing soft tissue from bony defects
- Suturing of mucosa

- Methods of mouth open during different types of oral and maxillofacial surgeries
- Methods of improving visibility of surgical area (suctioning, wiping, piezo surgical instruments, laser surgical instruments)
- handling dirty and clean surgical instruments
- Preparation of a patient for surgical procedures
- Various methods and importance of Irrigation
- Identify commonly used instruments during oral and maxillofacial procedures
- Discuss the disposal of clinical waste and sharps according to recommended guidelines
- Discuss:
- Indications and contraindications for removal of teeth
- Mechanical principles involved in tooth extractions
- Principles of forceps use

Describe Specific techniques for removal of each tooth

Explain Post extraction care of tooth socket

- Discuss:
- Indications/contra-indications, principles and techniques for surgical extraction
- Principles of flap design, development and management
- Discuss Policy for leaving root fragments
- Mention sequence of extraction when multiple extractions have to be performed

IMPACTED TEETH

- Define Impaction
- Classify maxillary and mandibular impacted teeth according to standard classification
- Discuss the indications and contraindications for removal of impacted teeth
- Describe the complications of removal of impacted teeth

- Discuss preoperative and postoperative patient management after extraction of impacted teeth
- Discuss the surgical procedures for extraction
- Discuss surgical complications of wisdom tooth extraction and their management

MAXILLARY ANTRUM

- Describe the surgical Anatomy of maxillary antrum
- Discuss management of Oro-antral Fistula
- List antral pathology

INFECTIONS

- Classify facial spaces
- Discuss microbiology of odontogenic infections
- Discuss the anatomy of primary and secondary spaces of head and neck region.
- Explain the spread of infections through primary and secondary spaces of head and neck region.
- Discuss the sequelae of spread of infections through secondary spaces.
- Discuss signs and symptoms, diagnosis, investigations, treatment and post-operative management of:
 - Osteomyelitis
 - Actinomycosis
 - Candidiasis
 - Deep fungal infections
- Discuss stages of progression of odontogenic infections
- Discuss principles of:
 - Prevention of infection
 - Management of wound infection
 - Prophylaxis against metastatic infection
 - Cellulitis and Ludwig's angina

- Cavernous sinus thrombosis
- Prophylaxis of infective endocarditis

CYSTS

- Discuss the classification of cysts affecting oral and maxillofacial region
- Describe surgical management of cysts and cyst like lesions of the oral and maxillofacial area

ODONTOGENIC TUMOR

- Classify odontogenic tumors of oral and maxillofacial region
- Diagnose Odontogenic tumors on patients on the basis of clinical features
- Describe surgical management of benign lesions in oral soft tissues
- Discuss principles of surgical management of jaw tumors
- Discuss resections types and their indications in the jaw tumor
- List methods of reconstruction of jaws

MALIGNANT OROFACIAL TUMORS

- Classify odontogenic tumors of oral and maxillofacial region
- Diagnose Odontogenic tumors on patients on the basis of clinical features
- Describe surgical management of benign lesions in oral soft tissues
- Discuss principles of surgical management of jaw tumors
- Discuss resections types and their indications in the jaw tumor
- List methods of reconstruction of jaws
- Discuss Principles of management of malignant orofacial tumors
- Discuss examination and diagnostic methods of orofacial pathology
- Discuss principles and soft tissue/hard tissue biopsy techniques
- Describe dental management of patients undergoing radiotherapy and chemotherapy to head and neck region
- Classify the different types of flaps used for reconstruction in maxillofacial region

SALIVARY GLAND DISEASES

- Discuss anatomy, physiology and pathology of salivary glands
Enlist and discuss Diagnostic modalities for salivary gland disorders
- Discuss signs and symptoms, diagnosis, investigations, treatment and post-operative management of:
 - Obstructive salivary gland disease
 - Mucous retention and extravasation cyst phenomenon
 - Salivary gland infections
 - Neoplasia of salivary gland
 - Congenital diseases of salivary gland

TMJ DISORDERS

- Describe anatomy of Temporomandibular joint.
- Classify of TMJ disorders
- Identify sign and symptoms of TMJ disorders
- Evaluate a patient with TMJ disorder
- Formulate a management plan for patient presenting with TMJ disorders
- Discuss signs and symptoms, diagnosis, investigations, treatment and post-operative management of:
 - Temporomandibular Pain Dysfunction Syndrome
 - TMJ ankylosis
 - Internal disc derangement of TMJ
 - Dislocation and subluxation of TMJ

PRE-PROSTHETIC SURGERY

- Identify the objectives of pre-prosthetic surgery
- Discuss the principles of patient evaluation and treatment planning
- Explain re-contouring the alveolar ridges
- Enlist and describe soft tissue and hard tissue abnormalities
- Describe mandibular and maxillary ridge augmentation
- Discuss the correction of abnormal ridge relationships
- Explain Biologic considerations for osseointegration

- Describe dental implant components
- Identify Implant prosthetic options
- Discuss pre-operative evaluation of implant patient
- Describe surgical phase: Treatment Planning
- Enlist basic surgical techniques
- Discuss complications.

FACIAL PAIN

- Classify Orofacial pain
- Evaluate patients presenting to the OPD with orofacial pain
- Discuss the neurophysiology of pain.
- Discuss and Classify Neuropathic facial pains.
- Identify, Diagnose and management of chronic headache
- Explain the clinical features, pathophysiology, history, signs and symptoms and management options of trigeminal neuralgia.
- Explain the clinical features, pathophysiology, history, signs and symptoms and management options facial nerve palsy.

CLEFT LIP AND PALATE

- Describe the embryology, etiologic factors and functional problems associated with cleft lip and palate patients
- Discuss treatment sequence and dental needs of cleft lip and palate patients

ORTHOGNATHIC SURGERY

- Discuss the evaluation of patient for orthognathic surgery.
- Classify orthognathic skeletal deformities.
- Identify indications of the surgical procedures required to correct abnormalities in maxilla and mandible
- Discuss distraction osteogenesis
- Enlist postoperative complications

SURGICAL ENDODONTICS

- Discuss principles of surgical endodontics
- Describe management of periapical pathology

RADIOLOGY

- Discuss and describe different types of conventional radiographs (Intra Oral and Extra Oral)
- Enlist indications of different types of specialized imaging modalities
-Computerized Tomography Scan, Cone Beam Computerized Tomography, Magnetic Resonance Imaging, Ultrasound, Positron Emission Tomography CT, Sialogram, Angiogram, Scintigraphy

MAXILLOFACIAL TRAUMA

- Evaluation of patients with facial trauma
- Discuss ABCDE of emergency management (Primary and secondary survey)
- Discuss:
 - Soft and hard tissue injuries
 - Dentoalveolar injuries
- Classify mandibular fractures
- Discuss
 - Etiology, sign and symptoms and management of mandibular fractures
 - Management of edentulous atrophic mandibular fracture
 - Management of mandibular fracture in children
- Discuss complications of mandibular fractures
- Classify Zygomatic Complex (ZMC) fractures
- Discuss causes, signs, symptoms and investigations for ZMC fractures
- Discuss management options & complications of ZMC fracture
- Describe anatomy of orbit
- Classify Orbital and Nasal fractures
- Discuss causes, signs, symptoms and management of orbital and nasal fractures
- Discuss complication of orbital and nasal fractures
- Classify Mid-face fractures

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| | <ul style="list-style-type: none"> • Discuss causes, signs, symptoms and management of mid face fractures • Discuss the complication of mid face fracture |
| <p>CLINICAL SKILLS/ PRACTICALS</p> | <ul style="list-style-type: none"> • Demonstrate selection handling and correct use of: <ul style="list-style-type: none"> -Dental elevators -Extraction forceps • Write a standardized prescription • Demonstrate aseptic technique on patients during dental surgery • Demonstrate the method of hand washing, scrubbing, gloving and gowning • Obtain a comprehensive medical and surgical history of patients presenting to the OPD • Demonstrate physical examination on patients presenting in the OPD • Obtain a comprehensive medical history of patients undergoing oral and maxillofacial procedures under local anesthesia, general anesthesia and sedation • Obtain informed /written consent from patients attending dental OPD for oral and maxillofacial procedures under local anesthesia, general anesthesia and sedation • Choose relevant investigations for safe administration of local anesthesia, general anesthesia and sedation • Demonstrate effective administration of local anesthesia (infiltration/Nerve block) • Demonstrate: <ul style="list-style-type: none"> -Correct chair position for forceps extraction -Procedure of open and closed extraction • Demonstrate technique for open extraction of single, multi rooted teeth and removal of small fragments • Write down operative notes for patient records • Write a referral letter for biopsy |

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| | <ul style="list-style-type: none"> • Prescribe relevant investigation and medications for patients with TMJ disorders • Demonstrate procedure for reduction of dislocated TMJ • Demonstrate BLS • Examination of TMJ and muscles of mastication • Examination of Cranial Nerves (Facial and Trigeminal) • Examination of Neck (nodes/swelling) • Write a prescription • Measurement of Blood Pressure and Pulse rate. • Write a referral letter to consultant. • Counseling of extraction of wisdom tooth under General Anesthesia. • Counseling of patient with Oral Submucous Fibrosis on betel nut chewing. • Counseling of patient with transient facial nerve palsy after local anesthesia. • Counseling of major surgery/breaking of bad news. • Fabrication of eyelets. • Placement of eyelets and arch bars on models. • Performing maxillomandibular fixation on models. • Perform culture and sensitivity test and write a note to laboratory for sensitivity and resistance of antibiotics. • Perform suturing on models (interrupted, figure of 8 and mattress) |
| INTERNAL ASSESSMENT | 10% (Pre-professional Examination, Midterm Examination, Assignments and Class Presentations, Clinical Logbooks) |
| ANNUAL EXAMINATION | 90% (MCQS, OSCE) |
| COURSE EVALUATION | This course will be evaluated as per JSMU & HEC policies |