

Year:	Fourth Year
Subject Name:	Oral Medicine & Radiology
Subject Code:	1DS1010305
Pre-requisite:	-None-

AIMS:

1. To train the students to diagnose the common disorders of Orofacial region by clinical examination and with the help of such investigations as may be required and medical management of oro-facial disorders with drugs and physical agents.
2. To train the students about the importance, role, use and techniques of radiographs/digital radiograph and other imaging methods in diagnosis.
3. The principles of the clinical and radiographic aspects of Forensic Odontology.
4. The syllabus in Oral Medicine & Radiology is divided into two main parts.
 - a. Diagnosis, Diagnostic methods and Oral Medicine
 - i. Diagnostic methods
 - ii. Diagnosis and differential diagnosis
 - iii. Oral Medicine & Therapeutics.
 - b. Oral Radiology.

COURSE CONTENT

1. Emphasis should be laid on oral manifestations of systemic diseases and ill-effects of oral sepsis on general health.
2. To avoid confusion regarding which lesion and to what extent the student should learn and know, this elaborate syllabus is prepared. As certain lesions come under more than one group, there is repetition.

Part-I: ORAL MEDICINE AND DIAGNOSTIC AIDS

SECTION (A) – Diagnostic Methods

1. Definition and importance of Diagnosis and various types of diagnosis
2. Method of clinical examinations.
 - a. General Physical examination by inspection.
 - b. Oro-facial region by inspection, palpation and other means
 - c. To train the students about the importance, role, use of saliva and techniques of diagnosis of saliva as part of oral disease

- d. Examination of lesions like swellings, ulcers, erosions, sinus, fistula, growths, pigmented lesions, white and red patches
 - e. Examination of lymph nodes
 - f. Forensic examination – Procedures for post-mortem dental examination; maintaining dental records and their use in dental practice and post-mortem identification; jurisprudence and ethics.
3. Investigations
- a. Biopsy and exfoliative cytology
 - b. Hematological, Microbiological and other tests and investigations necessary for diagnosis and prognosis.

SECTION (B) – Diagnosis, Differential Diagnosis

While learning the following chapters, emphasis shall be given only on diagnostic aspects including differential diagnosis.

- 1. Teeth: Developmental abnormalities, causes of destruction of teeth and their sequelae and discoloration of teeth
- 2. Diseases of bone and Osteodystrophies: Development disorders: Anomalies, Exostosis and tori, infantile cortical hyperostosis, osteogenesis imperfecta, Marfans syndrome, osteopetrosis. Inflammation – Injury, infection and spread of infection, fascial space infections, osteoradionecrosis.
Metabolic disorders – Histiocytosis
Endocrine – Acro-megaly and hyperparathyroidism
Miscellaneous – Paget's disease, Mono and polyostotic fibrous dysplasia, Cherubism.
- 3. Temporomandibular joint: Developmental abnormalities of the condyle. Rheumatoid arthritis, Osteoarthritis, Sub-luxation and luxation.
- 4. Common cysts and Tumors:
 - a. CYSTS:
 - i. Cysts of soft tissue: Mucocele and Ranula
 - ii. Cysts of bone: Odontogenic and nonodontogenic.
 - b. TUMORS:
 - i. Soft Tissue:
 - ii. Epithelial: Papilloma, Carcinoma, Melanoma
 - iii. Connective tissue: Fibroma, Lipoma, Fibrosarcoma
 - iv. Vascular: Haemangioma, Lymphangioma
 - v. Nerve Tissue: Neurofibroma, Traumatic Neuroma, Neurofibromatosis

- vi. Salivary Glands: Pleomorphic adenoma, Adenocarcinoma, Warthin's Tumor, Adenoid cystic carcinoma.
- vii. Hard Tissue:
- viii. Non Odontogenic: Osteoma, Osteosarcoma, Osteoclastoma, Chondroma, Chandrosarcoma, Central
- ix. giant cell tumor, and Central haemangioma
- x. Odontogenic: Enameloma, Ameloblastoma, Calcifying Epithelial Odontogenic tumor, Adenomatoid
- xi. Odontogenic tumor, Periapical cemental dysplasia and odontomas
- 5. Periodontal diseases: Gingival hyperplasia, gingivitis, periodontitis, pyogenic granuloma
- 6. Granulomatous diseases: Tuberculosis, Sarcoidosis, Midline lethal granuloma, Crohn's Disease and Histiocytosis X
- 7. Miscellaneous Disorders: Burkitt lymphoma, sturge – Weber syndrome, CREST syndrome, Rendu-Osler-Weber disease

SECTION (C): Oral Medicine and Therapeutics

The following chapters shall be studied in detail including the etiology, pathogenesis, clinical features, investigations, differential diagnosis, management and prevention.

- 1. Infections of oral and paraoral structures:
 - a. Bacterial: Streptococcal, tuberculosis, syphilis, Vincent's, leprosy, actinomycosis, diphtheria and tetanus
 - b. Fungal: Candida albicans
 - c. Virus: Herpes simplex, herpes zoster, Ramsay Hunt syndrome, measles, herpangina, mumps, infectious mononucleosis, AIDS and hepatitis-B
- 2. Important common mucosal lesions:
 - a. White lesions: Chemical burns, leukodema, leukoplakia, Fordyce spots, stomatitis nicotina palatinus, white sponge nevus, candidiasis, lichen planus, discoid lupus erythematosus. Vesiculo-bullous lesions: Herpes simplex, herpes zoster, herpangina, bullous lichen planus, pemphigus, cicatricial pemphigoid, erythema multiforme.
 - b. Ulcers: Acute and chronic ulcers
 - c. Pigmented lesions: Exogenous and endogenous
 - d. Red lesions: Erythroplakia, stomatitis venenata and medicamentosa, erosive lesions and denture sore mouth.
- 3. Cervico-facial lymphadenopathy
- 4. Facial pain:

- a. Organic pain: Pain arising from the diseases of orofacial tissues like teeth, pulp, gingival, periodontal tissue, mucosa, tongue, muscles, blood vessels, lymph tissue, bone, paranasal sinus, salivary glands etc.
 - b. Pain arising due to C.N.S. diseases:
 - i. Pain due to intracranial and extracranial involvement of cranial nerves. (Multiple sclerosis, cerebrovascular diseases, trotter's syndrome etc.)
 - ii. Neuralgic pain due to unknown causes: Trigeminal neuralgia, glossopharyngeal neuralgia, sphenopalatine ganglion neuralgia, periodic migrainous neuralgia and atypical facial pain.
 - c. Referred pain: Pain arising from distant tissues like heart, spine etc.
5. Altered sensations: Cacogeusia, halitosis
6. Tongue in local and systemic disorders: (Aglossia, ankyloglossia, bifid tongue, fissured tongue, scrotal tongue, macroglossia, microglossia, geographic tongue, median rhomboid glossitis, depapillation of tongue, hairy tongue, atrophic tongue, reactive lymphoid hyperplasia, glossodynia, glossopyrosis, ulcers, white and red patches etc.)
7. Oral manifestations of:
- a. Metabolic disorders:
 - i. Porphyria
 - ii. Haemochromatosis
 - iii. Histocytosis X diseases
 - b. Endocrine disorders:
 - i. Pituitary: Gigantism, acromegaly, hypopituitarism
 - ii. Adrenal cortex: Addison's disease (Hypofuntion), Cushing's syndrome (Hyperfunction)
 - iii. Parathyroid glands: Hyperparathyroidism.
 - iv. Thyroid gland: (Hypothyroidism) Cretinism, myxedema
 - v. Pancreas: Diabetes
 - c. Nutritional deficiency: Vitamins: riboflavin, nicotinic acid, folic acid Vitamin B12, Vitamin C (Scurvy)
 - d. Blood disorders:
 - i. Red blood cell diseases
 - 1. Deficiency anemias: (Iron deficiency, plummer – vinson syndrome, pernicious anemia)
 - 2. Haemolytic anemias: (Thalassemia, sickle cell anemia, erythroblastosis fetalis)
 - 3. Aplastic anemia
 - 4. Polycythemia

- ii. White Blood cell diseases
 - 1. Neutropenia, cyclic neutropenia, agranulocytosis, infectious mononeucleosis and leukemias
- iii. Haemorrhagic disorders:
 - 1. Thrombocytopenia, purpura, hemophillia, christmas disease and von willebrand's disease
- 8. Disease of salivary glands:
 - a. Developmental disturbances: Aplasia, atresia and aberration
 - b. Functional disturbances: Xerostomia, ptyalism
 - c. Inflammatory conditions: Nonspecific sialadenitis, mumps, sarcoidosis, Heerfort's syndrome (Uveoparotid fever), Necrotising sialometaplasia
 - d. Cysts and tumors: Mucocele, ranula, pleomorphic adenoma, mucoepidermoid carcinoma
 - e. Miscellaneous: Sialolithiasis, Sjogren's syndrome, Mikulicz's disease and sialosis
- 9. Dermatological diseases with oral manifestations:
 - a. Ectodermal dysplasia
 - b. Hyperkeratosis palmarplantaris with periodontopathy
 - c. Scleroderma
 - d. Lichen planus including Gianotti's syndrome
 - e. Lupus erythematosus
 - f. Pemphigus
 - g. Erythema multiforme
 - h. Psoriasis
- 10. Immunological diseases with oral manifestations
 - a. Leukemia
 - b. Lymphomas
 - c. Multiple myeloma
 - d. AIDS clinical manifestations, opportunistic infections, neoplasms
 - e. Thrombocytopenia
 - f. Lupus erythematosus
 - g. Scleroderma
 - h. Dermatomyositis
 - i. Submucous fibrosis
 - j. Rheumatoid arthritis
 - k. Recurrent oral ulcerations including Behcet's syndrome and Reiter's syndrome
- 11. Allergy: Local allergic reactions, anaphylaxis, serum sickness (local and systemic allergic manifestations to food drugs and chemicals)

12. Foci of oral infection and their ill effects on general health
13. Management of dental problems in medically compromised persons:
 - a. Physiological changes: Puberty, pregnancy and menopause
 - b. The patients suffering with cardiac, respiratory, liver, kidney and bleeding disorders, hypertension, diabetes and AIDS. Post-irradiated patients.
14. Precancerous lesions and conditions
15. Nerve and muscle diseases:
 - a. Nerves:
 - i. Neuropraxia
 - ii. Neurotmesis
 - iii. Neuritis
 - iv. Facial nerve paralysis including Bell's palsy, Heerfordt's syndrome, Melkerson Rosenthal syndrome and Ramsay Hunt syndrome
 - v. Neuroma
 - vi. Neurofibromatosis
 - vii. Frey's syndrome
 - b. Muscles:
 - i. Myositis ossificans
 - ii. Myofascial pain dysfunction syndrome
 - iii. Trismus
16. Forensic odontology:
 - a. Medicolegal aspects of orofacial injuries
 - b. Identification of bite marks
 - c. Determination of age and sex
 - d. Identification of cadavers by dental appliances, Restorations and tissue remnants
17. Therapeutics: General therapeutic measures – drugs commonly used in oral medicine viz., antibiotics, chemotherapeutic agents, anti-inflammatory and analgesic drugs, astringents, mouth washes, styptics, demulcents, local surface anaesthetic, sialogogues, antisialogogues and drugs used in the treatment of malignancy.

PART – II BEHAVIOURAL SCIENCES AND ETHICS.

PART – III ORAL RADIOLOGY

1. Scope of the subject and history of origin
2. Physics of radiation:
 - a. Nature and types of radiations
 - b. Source of radiations

- c. Production of X-rays
 - d. Properties of X-rays
 - e. Compton effect
 - f. Photoelectric effect
 - g. Radiation measuring units
3. Biological effects of radiation
4. Radiation safety and protection measures
5. Principles of image production
6. Radiographic techniques:
 - a. Intra-Oral:
 - i. Periapical radiographs (Bisecting and parallel techniques)
 - ii. Bite wing radiographs
 - iii. Occlusal radiographs
 - b. Extra-oral:
 - i. Lateral projections of skull and jaw bones and paranasal sinuses
 - ii. Cephalograms
 - iii. Orthopantomograph
 - iv. Projections of temporomandibular joint and condyle of mandible
 - v. Projections for Zygomatic arches
 - c. Specialised techniques:
 - i. Sialography
 - ii. Xeroradiography
 - iii. Tomography
7. Factors in production of good radiographs:
 - a. K.V.P. and mA. of X-ray machine
 - b. Filters
 - c. Collimations
 - d. Intensifying screens
 - e. Grids
 - f. X-ray films
 - g. Exposure time
 - h. Techniques
 - i. Dark room
 - j. Developer and fixer solutions
 - k. Film processing
8. Radiographic normal anatomical landmarks.
9. Faulty radiographs and artifacts in radiographs.

10. Interpretation of radiographs in various abnormalities of teeth, bones and other orofacial tissues.
11. Principles of radiotherapy of oro-facial malignancies and complications of radiotherapy.
12. Contrast radiography and basic knowledge of radio-active isotopes.
13. Radiography in Forensic Odontology - Radiographic age estimation and post-mortem radiographic methods.

PRACTICALS / CLINICALS:

1. Student is trained to arrive at proper diagnosis by following a scientific and systematic procedure of history taking and examination of the orofacial region. Training is also imparted in management wherever possible. Training also shall be imparted on saliva diagnostic procedures. Training also shall be imparted in various radiographic procedures and interpretation of radiographs.
2. In view of the above each student shall maintain a record of work done, which shall be evaluated for marks at the time of university examination
3. The following is the minimum of prescribed work for recording
 - a. Recording of detailed case histories of interesting cases 10
 - b. Intra-oral radiographs (Periapical, bitewing, occlusal) 25
 - c. Saliva diagnostic check as routine procedure.

MINIMUM TEACHING HOURS

Lectures (Hrs)	Practical (Hrs)	Clinical (Hrs)	Total (Hrs)
45	-	100	145

EXAMINATIONS

Internal Assessment Examination

The continuing assessment examinations may be held frequently at least 3 times in a particular year and the average marks of these examinations should be considered. 10% of the total marks in each subject for both theory, practical and clinical examination separately should be set aside for the internal assessment examinations.

Marks Distribution

There shall be a maximum of 200 marks divided in to theory and Practical.

Exam	Max. Marks
Theory Examination	
University Written exam	70
Viva voce	20
Internal Assessment (Written)	10
TOTAL	100
Practicals/ clinicals	
University Exam	90
Internal Assessment (Written)	10
TOTAL	100
GRAND TOTAL (Theory + Practical)	200

LIST OF TEXTBOOKS

- Oral Diagnosis, Oral Medicine & Oral Pathology
 - Burkit – Oral Medicine – J.B. Lippincott Company
 - Coleman – Principles of Oral Diagnosis – Mosby Year Book
 - Jones – Oral Manifestations of Systemic Diseases – W.B. Saunders company
 - Mitchell – Oral Diagnosis & Oral Medicine
 - Kerr – Oral Diagnosis
 - Miller – Oral Diagnosis & Treatment
 - Hutchinson – clinical Methods
 - Oral Pathology – Shafers
 - Sonis.S.T., Fazio.R.C. and Fang.L - Principles and practice of Oral Medicine
- Oral Radiology
 - White & Goaz – Oral Radiology – Mosby year Book
 - Weahrman – Dental Radiology – C.V. Mosby Company
 - Stafne – Oral Roentgenographic Diagnosis – W.B.Saunders Co.,
- Forensic Odontology
 - Derek H.Clark – Practical Forensic Odontology - Butterworth-Heinemann (1992)
 - C Michael Bowers, Gary Bell – Manual of Forensic Odontology - Forensic Pr (1995)

LIST OF JOURNALS

1. Oral Surgery, Oral Pathology and Oral Medicine

INTERNSHIP

DCI recommended quota for the students posted in Oral Medicine & Radiology for a period of 1 month.

1. Standardized examination of patients: 25 Cases
2. Exposure to clinical, pathological laboratory procedures and biopsies: 5 Cases
3. Effective training in taking of Radiographs: 2 Full mouth
 - a. (Intra-oral) I.O. (Extra oral) E.O.: 1
 - b. Cephalogram: 1
4. Effective management of cases in wards: 2 Cases