

DENT-1440: GENERAL AND ORAL PATHOLOGY

Cuyahoga Community College

Viewing: DENT-1440 : General and Oral Pathology

Board of Trustees:

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Subject Code

DENT - Dental Hygiene

Course Number:

1440

Title:

General and Oral Pathology

Catalog Description:

General principles of pathology including, inflammation and immunity, neoplasia, metabolic and endocrine disturbances, and other systemic diseases affecting the general and oral health of the patient.

Credit Hour(s):

2

Lecture Hour(s):

2

Requisites

Prerequisite and Corequisite

DENT-1311 Dental Anatomy, Histology & Embryology and DENT-1300 Preventive Oral Health Services I.

Outcomes

Course Outcome(s):

Explain the diagnostic process using common terminology related to pathology.

Objective(s):

1. Use correct terminology to describe intra-oral and extra-oral lesions.
2. Name a diagnostic category and give an example of a lesion, anomaly or condition for which this category contributes to the diagnosis.
3. Recognize the etiology, typical location, clinical appearance, prevalence, and treatment of variants of normal conditions.

Course Outcome(s):

Describe the inflammatory and repair processes and their effects on the body's healing capacity.

Objective(s):

1. Explain the differences between acute and chronic inflammation.
2. Identify the microscopic events of the inflammatory process.
3. List and describe the three types of tissue repair.
4. Identify the clinical features, etiology and treatment options for injuries to the teeth, oral soft tissues and salivary glands.

Course Outcome(s):

Explain the components of the immune response.

Objective(s):

1. Explain the cellular involvement in the immune response.
 2. Differentiate between passive and active immunity.
 3. Describe autoimmunity and explain how it results in disease.
 4. Define immunodeficiency and describe how it results in disease.
 5. Distinguish various oral diseases with immunologic pathogenesis including etiology, appearance and treatment.
 6. Identify various autoimmune diseases that effect the oral cavity.
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Course Outcome(s):

Identify the factors involved in the development and spread of infectious diseases.

Objective(s):

1. Categorize the etiology of specific infectious diseases as either bacterial, fungal or viral.
 2. Explain the mode of transmission, appearance, diagnosis, treatment and prognosis of various infectious diseases.
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Course Outcome(s):

Distinguish between developmental and inherited disorders.

Objective(s):

1. Classify developmental abnormalities and identify their origin as either soft tissue or tooth structure.
 2. Distinguish between developmental odontogenic and developmental nonodontogenic cysts.
 3. Describe the various types of dental anomalies.
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Course Outcome(s):

Compare and contrast genetic abnormalities that affect the head and neck area.

Objective(s):

1. Review normal cell division.
 2. Review the molecular composition of chromosomes.
 3. Compare and contrast inherited disorders that effect the gingiva and periodontium, jaw bones and facies, oral mucosa and the teeth.
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Course Outcome(s):

Differentiate between neoplastic and nonneoplastic diseases of the head and neck area.

Objective(s):

1. Differentiate between benign, premalignant and malignant tumors appearing in the oral cavity.
 2. Identify risk factors, warning signs, common sites, treatment and prognosis for oral cancer.
 3. Identify the clinical & radiographic imaging features, typical locations and treatment for neoplastic and nonneoplastic diseases.
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Course Outcome(s):

Evaluate the oral manifestations of systemic disease.

Objective(s):

1. Describe the oral manifestations and possible treatment for endocrine and blood disorders.
 2. Discuss oral manifestations of oral cancer therapy.
 3. Differentiate between primary and secondary immunodeficiencies.
 4. Discuss the effects of medications on the oral cavity.
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Methods of Evaluation:

- A. Quizzes
- B. Examinations
- C. Practical Focus Activities

- D. Presentations
- E. Professionalism

Course Content Outline:

1. A. Introduction to Oral Pathology
 - a. 1. Common Terminology
 - i. Health
 - ii. Disease
 - iii. Pathology
 - iv. Etiology
 - v. Idiopathic
 - vi. Iatrogenic
 - vii. Predilection
 - viii. Pathogenic
 - ix. Pathonomonic
 - x. Manifestation
 - xi. Signs of disease
 - xii. Symptoms of disease
 - xiii. Lesion
 - xiv. Necrosis
 - xv. Pathogenesis
 - xvi. Sequelae
 - xvii. Prognosis
 - b. Diagnostic process
 - i. Clinical diagnosis
 - ii. Historical diagnosis
 - iii. Radiographic Imaging diagnosis
 - iv. Laboratory diagnosis
 - v. Microscopic diagnosis
 - vi. Surgical diagnosis
 - vii. Therapeutic diagnosis
 - viii. Differential diagnosis
 - ix. Definitive diagnosis
 - c. Terms to describe oral lesions
 - i. Macule
 - ii. Patch
 - iii. Erosion
 - iv. Ulcer
 - v. Vesicle
 - vi. Bulla
 - vii. Pustule
 - viii. Wheal
 - ix. Papule
 - x. Nodule
 - xi. Plaque
 - xii. Tumor
 - xiii. Sessile
 - xiv. Pedunculated
 - d. Histologic changes in tissue
 - i. Atrophy
 - ii. Hypertrophy
 - iii. Hypoplasia
 - iv. Hyperplasia
 - e. Variants of normal
 - i. Fordyce granules
 - ii. Torus palatinus
 - iii. Mandibular tori
 - iv. Melanin pigmentation

- v. Retrocuspid papilla
 - vi. Varicosities
 - vii. Linea alba
 - viii. Leukoedema
 - ix. Lingual thyroid nodule
 - x. Fissured tongue
 - xi. Median rhomboid glossitis
 - xii. Geographic tongue
 - xiii. Hairy tongue
 - xiv. Macroglossia
 - xv. Microglossia
 - xvi. Exostoses
2. Inflammation and repair
- a. Cardinal signs of localized inflammation
 - i. Redness
 - ii. Swelling
 - iii. Pain
 - iv. Loss of normal tissue function
 - b. Cardinal signs of systemic inflammation
 - i. Fever
 - ii. Leukocytosis
 - iii. Elevated C-Reactive Protein
 - iv. Lymphadenopathy
 - c. Microscopic Events of the Inflammatory Process
 - i. Injury to tissue
 - ii. Constriction of the microcirculation
 - iii. Dilation of the microcirculation
 - iv. Increase in permeability of the microcirculation
 - v. Exudate leaving the microcirculation
 - vi. Increase in blood viscosity in the microcirculation
 - vii. Decrease in blood flow through the microcirculation
 - viii. Margination and pavementing of white blood cells
 - ix. Emigration of white blood cells from the microcirculation
 - x. Phagocytosis by blood cells of foreign substances
 - d. Types of white blood cells
 - i. Neutrophils
 - ii. Macrophages
 - e. Chemical Mediators
 - i. Kinin system
 - ii. Clotting mechanisms
 - iii. Complement system
 - iv. Other biochemical mediators
 - v. Antiinflammatory drugs
 - f. Acute vs. chronic inflammation
 - g. Tissue regeneration and tissue repair
 - h. Microscopic events during repair
 - i. Types of repair
 - i. Primary intention
 - ii. Secondary intention
 - iii. Tertiary intention
3. Injuries to the Teeth
- a. Attrition
 - b. Abrasion
 - c. Abfraction
 - d. Erosion
 - e. Methamphetamine Abuse
4. Injuries to the soft tissue

- a. Chemical
 - b. Electrical
 - c. Thermal
 - d. Cocaine
 - e. Hematoma
 - f. Traumatic ulcer
 - g. Frictional keratosis
 - h. Linea alba
 - i. Traumatic neuroma
 - j. Nicotine stomatitis
 - k. Tobacco pouch keratosis
 - l. Smoker's melanosis
 - m. Amalgam tattoo
 - n. Oral melanotic macule
 - o. Solar cheilitis
 - p. Petechiae
 - q. Ecchymosis
5. Injuries to salivary glands
- a. Mucocele
 - b. Ranula
 - c. Necrotizing Sialometaplasia
 - d. Sialolith
 - e. Sialadenitis
 - f. Xerostomia
 - g. Sjogren's Syndrome
 - h. Warthin Tumor
6. Reactive Connective Tissue Lesions
- a. Pyogenic Granuloma
 - b. Giant Cell Granuloma
 - c. Peripheral Ossifying Fibroma
 - d. Irritation Fibroma
 - e. Epulis Fissuratum
 - f. Palatal Papillomatosis
 - g. Gingival Fibromatosis
 - h. Chronic Hyperplastic Pulpitis
7. Inflammatory Periapical Lesions
- a. Fistula
 - b. Parulis
 - c. Cellulitis
 - d. Ludwig Angina
 - e. Pulpitis
 - f. Periapical Abscess
 - g. Periapical Granuloma
 - h. Periapical Cyst
 - i. Condensing Osteitis
 - j. Alveolar Osteitis
 - k. Internal and External Resorption
8. Immunity
- a. Inflammatory vs. immune response
 - b. Components of the immune response
 - i. Antigens
 - ii. Antibodies
 - iii. Lymphocytes
 - iv. Macrophages
 - v. Cytokines
 - c. 3. Types of lymphocytes
 - i. B cells
 - ii. T cells

- iii. Natural killer cells
- iv. Dendritic cells
- d. Cell-mediated immune response
- e. Types of immunity
 - i. Active
 - ii. Passive
 - iii. Natural
 - iv. Acquired
- f. Immunopathology
 - i. Hypersensitivity
 - ii. Autoimmune diseases
 - iii. Immunodeficiency
 - 1. Primary
 - 2. Secondary
- 9. Oral Diseases with Immunologic Pathogenesis
 - a. Recurrent Aphthous Stomatitis
 - b. Hypersensitivity-Induced Lesions
 - i. Urticaria
 - ii. Angioedema
 - iii. Contact mucositis
 - iv. Contact dermatitis
 - v. Fixed drug eruption
 - vi. Erythema multiforme
 - vii. Reiter Syndrome
- 10. Autoimmune Diseases that Affect the Oral Cavity
 - a. Sjogren syndrome
 - b. Lupus erythematosus
 - c. Pemphigus vulgaris
 - d. Pemphigoid
 - e. Behcet Syndrome
- 11. Infectious Disease
 - a. Bacterial Infections
 - i. Impetigo
 - ii. Tonsillitis and pharyngitis
 - 1. Scarlet fever
 - 2. Rheumatic fever
 - iii. Tuberculosis
 - iv. Actinomycosis
 - v. Syphilis
 - vi. Necrotizing ulcerative gingivitis
 - vii. Pericoronitis
 - viii. Acute osteomyelitis
 - ix. Chronic osteomyelitis
 - b. Fungal Infections
 - i. Candidiasis
 - ii. Deep fungal infections
 - c. Viral Infectious
 - i. Human papillomavirus infection
 - 1. Verruca vulgaris
 - 2. Condyloma acuminatum
 - 3. Focal epithelial hyperplasia
 - ii. Herpes simplex infections
 - 1. Primary
 - 2. Recurrent
 - iii. Varicella-zoster
 - iv. Epstein-Barr
 - v. Coxsackievirus infection
 - 1. Herpangina
 - 2. Hand-foot-and-mouth disease

- d. Other Viral Infections with Oral Manifestations
 - i. Measles
 - ii. Mumps
- e. Human Immunodeficiency Virus
 - i. Progression
 - ii. Oral manifestations
- 12. Developmental disorders
 - a. Soft tissue abnormalities
 - i. Ankyloglossia
 - ii. Commisural lip pits
 - iii. Lingual thyroid
 - b. Developmental Cysts
 - i. Dentigerous
 - ii. Eruption
 - iii. Primordial
 - iv. Lateral periodontal
 - v. Calcifying odontogenic
 - vi. Globulomaxillary
 - c. Developmental Nonodontogenic Cysts
 - i. Nasopalatine canal
 - ii. Median palatine
 - iii. Nasolabial
 - iv. Epidermal
 - v. Dermoid
 - vi. Lymphoepithelial
 - vii. Thyroglossal
 - viii. Median mandibular
 - ix. Branchial cleft
 - d. Pseudocysts
 - i. Static bone
 - ii. Simple bone
 - iii. Aneurysmal bone
- 13. Developmental abnormalities of the teeth
 - a. Anomalies that affect the number of teeth
 - i. Anodontia
 - ii. Hypodontia
 - iii. Hyperdontia (supernumerary teeth)
 - b. Anomalies that affect the size of teeth
 - i. Microdontia
 - ii. Macrodontia
 - c. Anomalies that affect the shape of teeth
 - i. Gemination
 - ii. Fusion
 - iii. Concrecence
 - iv. Dilaceration
 - v. Enamel pearl
 - vi. Talon cusp
 - vii. Taurodontism
 - viii. Dens in dente
 - ix. Dens evaginatus
 - x. Supernumerary roots
- 14. Abnormalities in Tooth Structure
 - a. Enamel hypoplasia
 - b. Enamel hypocalcification
 - c. Endogenous staining
 - d. Regional odontodysplasia
- 15. Abnormalities of Tooth Eruption

- a. Impacted
 - b. Embedded
 - c. Ankylosed
16. Genetic disorders that affect the oral cavity
- a. Gross chromosomal abnormalities
 - i. Trisomy 21
 - ii. Trisomy 13
 - iii. Turner syndrome
 - iv. Klinefelter syndrome
 - v. Cri du Chat and Wolf-Hirschhorn syndrome
 - vi. Marfan syndrome
 - b. Inherited disorders affecting the gingiva and periodontium
 - i. Cyclic neutropenia
 - ii. Papillon-Lefevre syndrome
 - iii. Focal palmoplantar and gingival hyperkeratosis
 - iv. Gingival fibromatosis
 - c. Inherited disorders affecting the jaw bones and facies
 - i. Cherubism
 - ii. Cleidocranial dysplasia
 - iii. Gardner syndrome
 - iv. Basal cell nevus syndrome
 - v. Osteogenesis imperfecta
 - vi. Torus mandibularis
 - vii. Torus palatinus
 - viii. Maxillary exostosis
 - ix. Mandibulofacial dysostosis
 - x. Ellis-van Creveld syndrome
 - xi. Nevoid basal cell carcinoma
 - d. Inherited disorders affecting the oral mucosa
 - i. Cleft palate
 - ii. Cleft lip
 - iii. Hereditary hemorrhagic telangiectasia
 - iv. Multiple endocrine neoplasia
 - v. Neurofibromatosis of von Recklinghausen
 - vi. Peutz-Jeghers syndrome
 - vii. White sponge nevus
 - e. Inherited disorders affecting the teeth
 - i. Amelogenesis imperfecta
 - ii. Dentinogenesis imperfecta
 - 1. I
 - 2. II
 - 3. III
 - iii. Dentin dysplasia
 - 1. Coronal
 - 2. Radicular
 - iv. Ectodermal dysplasia
 - v. Hypophosphatasia
 - vi. Hypophosphatemic Vitamin D-resistant rickets
 - vii. Peg laterals or congenitally missing laterals
 - viii. Taurodontism
17. Oral cancer
- a. Description of neoplasia
 - i. Neoplasia
 - ii. Hyperplasia
 - b. Causes of tumors
 - c. Classification of tumors
 - i. Benign
 - ii. Malignant

- d. Names of tumors
 - e. Treatment of tumors
 - i. Excision
 - ii. Enucleation
18. Premalignant Lesions
- a. Leukoplakia
 - b. Erythroplakia
 - i. Speckled leukoplakia
 - c. Epithelial dysplasia
 - d. Oral submucous fibrosis
19. Tumors of Squamous Epithelium
- a. Papilloma
 - b. Squamous cell carcinoma
 - c. Verrucous carcinoma
 - d. Basal cell carcinoma
20. Salivary gland tumors
- a. Pleomorphic adenoma
 - b. Monomorphic adenoma
 - c. Adenoid cystic carcinoma
 - d. Mucoepidermoid carcinoma
21. Odontogenic tumors
- a. Ameloblastoma
 - b. Calcifying epithelial odontogenic tumor (Pindborg tumor)
 - c. Adenomatoid odontogenic tumor
 - d. Odontogenic myxoma
 - e. Calcifying and cementifying fibromas
 - f. Cementoblastoma
 - g. Ameloblastic fibroma-odontoma
 - h. Odontoma
 - i. Peripheral odontogenic tumor
22. Tumors of Soft Tissue
- a. Adipose Tissue
 - i. lipoma
 - b. Nerve Tissue
 - i. Neurofibroma
 - ii. Schwannoma
 - iii. Granular cell tumor
 - iv. Congenital epulis
 - c. Muscle Tissue
 - i. rhabdomyoma
 - ii. rhabdomyosarcoma
 - d. Vascular Tissue
 - i. hemangioma
 - ii. Lymphangioma
 - iii. Kaposi sarcoma
 - e. Tumors of Melanin-Producing Cells
 - i. Melanocytic nevus
 - ii. Malignant melanoma
23. Tumors of Bone and Cartilage
- a. Osteoma
 - b. Osteosarcoma
 - c. Chondroma
 - d. Chondrosarcoma
24. Tumors of Blood and Blood-Forming Tissues
- a. Leukemia
 - b. Lymphoma
 - c. Multiple Myeloma
25. Metastatic Tumors of the Jaws
26. Nonneoplastic Diseases of Bone

- a. Benign Fibro-Osseous Lesions
 - i. Periapical cemento-osseous dysplasia
 - ii. Focal cemento-osseous dysplasia
 - iii. Florid cemento-osseous dysplasia
 - b. Types of Fibrous Dysplasia
 - i. Monostotic
 - ii. Polyostotic
 - c. Paget Disease of the Bone
 - d. Central Giant Cell Granuloma
 - e. Osteomalacia
 - f. Aneurysmal bone cyst
27. Oral Manifestations of Systemic Disease
- a. Endocrine Disorders
 - i. Pituitary
 - ii. Thyroid
 - iii. Parathyroid
 - iv. Pancreas
 - v. Adrenal
 - b. Blood disorders
 - i. Erythrocytes
 - 1. Iron deficiency anemia
 - 2. Folic acid and vitamin B12 deficiency
 - 3. Pernicious anemia
 - 4. Celiac sprue
 - 5. Thalassemia
 - 6. Sickle cell anemia
 - 7. Aplastic anemia
 - 8. Polycythemia
 - ii. Leukocytes
 - 1. Agranulocytosis
 - 2. Leukemia
 - iii. Thrombocytes
 - iv. Bleeding disorders
 - 1. Hemostasis
 - 2. Platelet count
 - 3. Bleeding time
 - 4. Prothrombin time (INR)
 - 5. Thrombocytopenia purpura
 - 6. Nonthrombocytopenia purpura
 - 7. Hemophilia
 - 8. Petechiae
 - 9. Ecchymosis
28. Oral manifestations of therapy for oral cancer
- a. Radiation
 - b. Chemotherapy
29. Effects of drugs on the oral cavity
- a. Medication-related osteonecrosis of the jaw

Resources

Langlais, R.P., Miller, C.S., J. S. Gehrig. (2017) *Color Atlas of Common Oral Diseases*, Philadelphia: Wolters Kluwer.

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