

Developmental Disturbances of Oral & Paraoral structures-1

DEPARTMENT OF ORAL PATHOLOGY AND
MICROBIOLOGY

Purpose Statement

✿ At the end of the lecture student should describe--

- genetic classification of various oral and paraoral disorders
- etiological factors in congenital developmental anomalies
- classification of oral and paraoral structures depending on location

Learning Objectives

S.N.	Learning Objectives	Domain	Level	Criteria	Condition
1	Enumerate clinical features	Cognitive	Must Know	All	
2	Write classification	Cognitive	Must Know	All	
3	Write pathogenesis	Cognitive	Must Know	All	
4	Write radiographic features	Cognitive	Must Know	All	
5	Write histologic features	Cognitive	Must Know	All	
6	Enumerate differential diagnosis	Cognitive	Nice to Know	All	
7	Write treatment & prognosis	Cognitive & Psychomotor	Must Know	All	

Contents

- Introduction
- Classification
- Etiological factors in congenital developmental anomalies
- Classification of developmental disturbances of oral and paraoral structures

Introduction

- Disease
- Congenital diseases- Diseases present at birth
- Hereditary diseases- Diseases which are inherited
- Principle of Dominance & Recessive
- Principle of segregation- Subsequent separation and reappearance of characters in the offspring & is a feature of inheritance

CLASSIFICATION

Depending on the role of genetics, Witkop classified them as

- **Heritable defects in dentition without generalized defects**
 - Hypoplasia of enamel
 - Hypocalcification of enamel
 - Hypomaturation of enamel
 - Pigmented hypomaturation of enamel

- Local hypoplasia of enamel
- Dentin dysplasia
- Dentinogenesis imperfecta
- Missing lateral incisors, third molars, cuspids, premolars
- Fused mandibular incisors
- Familial dentigerous cysts

- **Heritable defects in dentition with generalized defects**
 - Dentinogenesis imperfecta with osteogenesis imperfecta
 - Enamel hypoplasia in vitamin D resistant rickets
 - Enamel hypoplasia with epidermolysis bullosa dystrophica
 - Local hypoplasia of enamel with Fanconi syndrome

- Missing teeth with anodontia
- Retarded eruption with cleidocranial dystosis
- Missing lateral incisors with ptosis of eyelid
- Missing premolars with premature whitening of hair

- **Heritable defects in oral structures without generalized defects**
 - Ankyloglossia
 - Elephantiasis gingivae
 - Harelip
 - Harelip with cleft palate

- **Heritable defects of oral structures with generalized defects**
 - Alveolar bone changes in sickle cell disease
 - Gingival hemorrhage in hemophilia and Christmas disease
 - Oral hematomas with Ehlers Danlos syndrome
 - Micrognathia with Pierre Robin syndrome
 - Neurofibroma and pigmentation in neurofibromatosis

- Hypercementosis in paget's disease
- Circumoral pigmentation with gastrointestinal polyposis
- Facial deformity in gargoylism
- White spongy nevus of mucous membrane
- Osteosclerosis in Albers Schonberg disease
- Hypoplasia of maxilla with achondroplasia
- Periodontitis with agammaglobulinemia

Etiological factors in congenital developmental anomalies

- **Genetic factors**
 - Inherited
 - Mutagenic
- **Environmental factors**
 - Physical injuries
 - Pressure, Temperature changes, Radiations
 - Hormones
 - ACTH, Cortisone, Diabetes mellitus, Hyperthyroidism, Hypothyroidism

- Nutrition
 - Deficiencies of Vitamin A, B₁, B₂, B₆, Niacin, Folic acid, B₁₂, D, E, K, Proteins, Amino acids, Potassium, Hypervitaminosis A
- Respiration
- Hypoxia, Carbon dioxide excess, Carbon monoxide, Gaseous Anesthesia
- Drugs & Chemicals
 - Salicylates, Quinine, Tetracyclines, Thalidomides, Pilocarpine, Boric acid, Nicotine, Chloroquine, Sulfanomaides, Selenium, Trypan blue

- Maternal diseases and defects
 - Uterine tumors, Uterine inflammation, Uterine malformation, Defects in implantation, Age, Emotional disturbances, Stress, multiple pregnancies
- Embryonic defects
 - Abnormalities of the ovum, Abnormalities of the semen, Antigen- Antibody reaction

Classification of developmental disturbances of oral and paraoral structures

- **Developmental Disturbances of Jaws**

Agnathia

Micrognathia

Macrogathia

Facial hemihypertrophy

Facial hemiatrophy

Abnormalities of dental arch relations.

- **Developmental Disturbances of Lips and Palate**

Congenital lips and commissural pits and fistula

Double lip

Cleft lip and palate

Cheilitis glandularis

Chelitis granulomatosa

Hereditary intestinal polyposis syndrome

Labial and oral melanotic macule.

- **Developmental Disturbances of Oral Mucosa**

Fordyce granules

Focal epithelial hyperplasia (Heck's disease)

- **Developmental Disturbances of Gingiva**

Fibromatosis gingivae

Retrocuspid papilla.

- **Developmental Disturbances of the Tongue**

Microglossia

Macroglossia

Ankyloglossia

Cleft tongue

Fissure tongue

Median rhomboid glossitis

Benign migratory glossitis

Hairy tongue

Lingual varices

Lingual thyroid nodule.

- **Developmental Disturbances of Oral Lymphoid Tissue**

- Reactive lymphoid aggregates

- Lymphoid hamartoma

- Angiolymphoid hyperplasia with eosinophils

- Lymphoepithelial cyst.

- **Developmental Disturbances of Salivary Glands**

Aplasia

Xerostomia

Hyperplasia of palatal gland

Atresia

Aberrancy

Developmental mandibular salivary gland depression.

- **Developmental Disturbances of Size of Teeth**

Microdontia

Macrodontia.

- **Development Disturbances in Shape of Teeth**

Gemination

Fusion

Concrescence

Dilaceration

Talon's cusp

Dens in dente

Dens evaginatus

Taurodontism

Supernumerary roots.

- **Developmental Disturbances in Number of Teeth**

Oligodontia

Anodontia

Supernumerary teeth

Predeciduous dentition

Post permanent dentition.

- **Developmental Disturbances in Structure of Teeth**

Amelogenesis imperfecta

Dentinogenesis imperfecta

Dentin dysplasia

Regional odontodysplasia

Dentin hypocalcification.

- **Disturbances of Growth (Eruption) of Teeth**

Premature eruption

Delayed eruption

Multiple unerupted teeth

Embedded and impacted teeth

Ankylosed teeth.

- **Fissural (inclusion, developmental) Cyst of Oral Region**

Median maxillary cyst

Median palatal cyst

Globulomaxillary cyst

Median mandibular cyst

Nasoalveolar cyst

Palatal cyst of the neonate

Thyroglossal tract cyst

Benign cervical lymphoepithelial cyst

Dermoid and epidermoid cysts.

SUMMARY

- ✿ By the end of the lecture student should be able to understand the
 - genetic classification of various oral and paraoral disorders
 - etiological factors in congenital developmental anomalies
 - classification of oral and paraoral structures depending on location

Bibliography

- Shafer's text book of oral pathology 5th & 6th edition
- Oral and maxillofacial pathology Neville, 2nd edition
- Color atlas of oral diseases Cawson, R. A.
8th edition

THANK YOU!