ORAL ULCERS

- Reactive Ulcers (*Riga Fede* in infants)
  Acute: Traumatic (Mechanical), Thermal, Iatrogenic, Therapeutic
  Chronic: Factitious, Traumatic Eosinophilic Ulcer, Necrotizing Sialometaplasia

- Infectious Ulcers
  Bacterial: Syphilis, Gonorrhea, Tuberculosis
  Fungal: Deep fungal infections, opportunistic fungal infections

- Immune-Mediated Ulcers
  RAS/Behcet Disease (DD)
  Erythema Multiforme
  Drugs: Contact Allergy
  Granulamatous Disorders: Oro-facial Granulomatosis, Sarcoidosis, Midline Granuloma, Wegner Granulomatosis

- Neoplastic
  Squamous Cell Carcinoma

LOCATION	
Gonorrhea	Mucous Membranes (genital, rectal, oral)
Tuberculosis	Oral Mucosa (secondary to pulmonary infection by sputum)
Opportunistic Fungal Infections	Nasal, Sinuses or Oro-pharynx
Deep Fungal Infections	Oral Mucosa (secondary to pulmonary infection by sputum)
Minor RAS	Non-Keratinized Mucosa
Major RAS	Mucosal Surfaces
Herpetiform RAS	Mucosal Surfaces
Behcet Disease	Mouth, Eyes, Genitalia, Skin, CNS, CVS (Oral ulcers precede others)
Erythema Multiforme	Mucocutaneous (Oral lesions 70% of cases)
Contact Allergy	Skin (rarely oral mucosa)
Oro-facial granulomatosis	Upper lip, lower lip then cheeks
Sarcoidosis	Lymphoid tissue, skin, eyes, salivary glands
Wegner Granulomatosis	URT, lungs, Kidneys

SYMPTOMS	
Deep fungal infections	Cough, fever, night sweating, weight loss
Behcet	Weakness, pharyngitis, generalized pain, headache, weight loss
Contact Allergy	Burning and Erythema

CAUSE	
Syphilis	Caused by treponema pallidum
Congenital Syphilis	Due to Spirochetemia that resulted from Secondary syphilis in mother
Gonorrhea	Caused by Nesisseria gonorrhea (g-ve)
Tuberculosis	Caused by acid-fast aerobic bacillus mycobacterium (M.Tuberculosis, M.Bovis, M.Avium, M.Intracellulare)
Deep Fungal Infections	Caused by four types (Histoplasmosis, coccidioidomycosis, blastomycosis, cryptococcosis)
Opportunistic Fungal Infections	Phycomycosis (mucormycosis) Aspergillosis
Recurrent Aphthus Stomatitis (RAS/Canker)	**Genetic** (HLA-A2 A11 B12 DR2) **Haematologic** (Iron, pernicious(b12), folic) **Cyclic Neutropenia** **GIT Disorders** (Coeliac, Crohn, Colitis, H. Pylori) **Hormonal** (Progesterone) **Allergy** (Food) **Stress**
Behcet Syndrome	Cross reactivity between epithelial proteins and bacterial proteins (Strep. Sangus) Relation with HSV, pesticide, foods and heavy metals **Genetic** (HLA-B51)
Erythema Multiforme	**Genetic** (HLA-B15 HLA-DQ3 HLA-DQB1) Immune Conditions Immune complex deposition in superficial microvasculature of skin and mucosa which in turn causes cell-mediated immunity in the area. Immune complexes are formed due to hypersensitivity to:
Contact Allergy	Drugs that are antigenic to body Or mast cell immune response to drugs Other allergens such as dental materials, oral hygiene products.
Midline Granuloma	Peripheral T-cell lymphona

Minor EM	**Major EM**
Micro-organisms (HSV, TB, Histoplasmosis)	Drugs (Antimicrobial, NSAID, Sulfonamide, Barbiturate, Anticonvulstants)
	Stevens-Johnson Syndrome

PATH	
Syphilis	Sexually Blood Transfusion Trans-placental
Gonorrhea	Sexually
Tuberculosis	Airborne
Deep Fungal Infections	Airborne
Opportunistic Fungal Infections	GIT (food) Airborne

DIAGNOSIS	
Syphilis	Darkfield examination of exudate from active lesion Silver Stain Serology
Gonorrhea	Swabs and gram stain and/or culture Serology Immuno-histochemistry
Tuberculosis	Ziehl Neelsen Stain or Fite Stain
Behcet	= RAS + two of the following: 1) Recurrent Genital Ulceration 2) Eye lesions (posterior uveitis) 3) Skin Lesions (erythema nodosum, acneiform nodules) 4) Positive pathergy test

TREATMENT	
Traumatic Eosinophilic Ulcer	Remove Irritant | Keep area clean
Necrotizing Sialometaplasia	Mouthwash
Syphilis	Penicillin
Gonorrhea	Penicillin
Tuberculosis	Antibiotics and Chemo agents (Isoniazid, ethambutol, streptomycin)
Deep Fungal Infections	Azole Group Amphotericin B
Opportunistic Fungal Infections	Amphotericin B Surgical Debridement
Minor RAS (recur)	Heals alone in 1 week without scarring
Major RAS (recur)	Heals alone in 10-40 days with chance of scarring
Herpetiform RAS (recur)	Heals alone in 10 days with scarring
RAS Treatments (So it does not recur)	Remove systemic causes Topical / Systemic/ Intralesion Corticosteroids Tetracycline/Nystatin Mouthways Immunosuppressants
Erythema Multiforme	If viral induced → Acyclovir Plasmapheresis might be indicated in severe EM Refer to ophthalmology and dermatology

CHARACTERISTIC FEATURES	
Traumatic Eosinophilic Ulcer	Eosinophilic Presence
Factitious Ulcer	Linked to psychological disorder
Necrotizing Sialometaplasia	Necrosis of salivary glands
Congenital Syphilis	Deafness, mulberry molars and notched incisors
Tuberculosis	Caseous Necrosis Langhan Cells Multi-nucleated Giant Cells
Deep Fungal Infections	Might cause abscess (blastomycosis)
Opportunistic Fungal Infections	Can perforate palate, nasal cavity and orbit
Recurrent Aphthus Stomatitis (RAS/Canker)	Pre-ulcerative presence of CD4+ cells Ulcerative presence of CD8+ cells Surrounded by erythematous halo Floor is white(CT) → yellow (fibrin) → grey (granulation tissue)
Herpetiform RAS	All stated above + Multiple minute pinhead ulcers which coalesce into large ragged ulcers
Behcet Syndrome	Vasculitis (Immune-complex related) Abnormal CD4/CD8 ratio Increased Cytokine Activity Posterior in mouth Ragged Edges
Erythema Multiforme	Apoptosis of basal cells Blistering Vasculitis
Contact Allergy	Lichenoid Reaction Plasma Cell Infiltrate
Wegener Granulomatosis	Vasculitis Orally has a strawberry appearance (Red and granular masses affecting gingiva) Might cause respiratory or kidney failure (due to replacement of lung parenchyma or necrosis of kidney cells)
Midline granuloma	Affect midline of oro-nasal structures Manifestation of T-cell lymphoma

- Ulcers that show <u>vasculitis</u>
  1) Behcet Disease
  2) Erythema Multiforme
  3) Wegner Granulomatosis

- Ulcers that has <u>pseudo-epitheliomatous hyperplasia</u>:
  1) Necrotizing Sialometaplasia
  2) Deep Fungal Infections
  3) Erythema Multiforme

- Ulcers that present as indurated, deep with rolled over edges, sharply demarcated, large and non-healing:
    1) Factitious Ulcers (Linked to psychological disorders)
    2) Traumatic Eosinophilic Ulcer
    3) Necrotizing Sialometaplasia
    4) Tuberculosis
    5) Deep fungal infections

- Ulcers that cause granulation tissue formation:
    1) Traumatic Eosinophilic Ulcer
    2) Tuberculosis
    3) Deep Fungal Infections
    4) All types of Recurrent Aphthus Stomatitis (Minor/Major/Herpetiform Aphthae)
    5) Oro-facial Granulomatosis
    6) Sarcoidosis
    7) Midline Granuloma
    8) Wegener Granulomatosis

- Ulcers that cause necrosis:
    1) Necrotizing Sialometaplasia – Salivary Glands Necrosis
    2) Syphilis – Epithelial necrosis by bacterial toxins
    3) Tuberculosis – Caseous Necrosis
    4) Opportunistic Fungal Infections – (Nasal, sinuses or oropharynx)
    5) Recurrent Aphthus Stomatitis (RAS/Canker)
    6) Erythema Multiforme
    7) Wegener Granulamatosis
    8) Midline Granuloma

- Ulcers that have female predilection
    1) Recurrent Aphthus Stomatitis (RAS/Canker)
    2) Oro-facial Granulomatosis
    3) Sarcoidosis
- Ulcers that have male predilection
    1) Behcet Syndrome
    2) Erythema Multiforme
- Ulcers that affect young adults
    1) Behcet Syndrome
    2) Erythema Multiforme
    3) Oro-facial Ganulomatosis
    4) Sarcoidosis