Oral Immunologic Diseases

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Recurrent Aphthous Stomatitis (Canker Sores; R.A.S.)

- Aphtha=Ulcer
- Cause unclear; recur in episodes
- Minor, major, herpetiform
- 20% of general population
- More often in females
- Clinical appearance and location are important

Recurrent Aphthous Stomatitis

- Trauma can be precipitating factor
- Other factors include: food allergies, genetic predisposition, stress, nutritional deficiencies, hormonal influence, infectious agents, food (high acid content)
- **Systemic disease**: Inflammatory bowel disease (Crohn's disease & ulcerative colitis), Behcet's syndrome, leukopenia, allergy to gluten (gluten intolerance-sprue = celiac disease), cyclic neutropenia, immunocompromised status, MAGIC syndrome, PFAPA syndrome, Reiter's disease, Sweet syndrome, ulcus vulvae acutum

Systemic Diseases

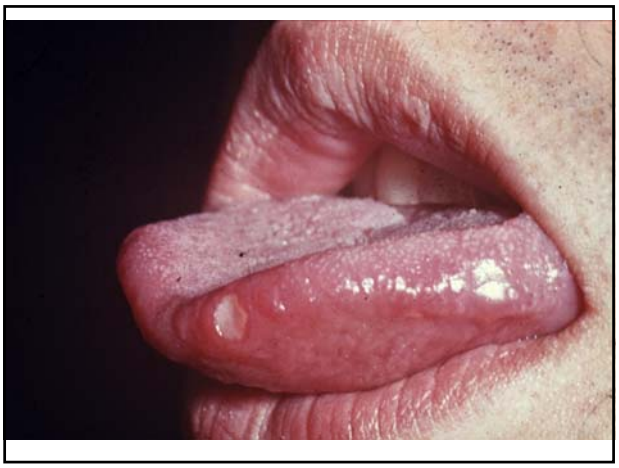
- MAGIC syndrome: Mouth and genital ulcers & inflamed cartilage
- PFAPA: Periodic fever, aphthae, pharyngitits and adenitis
- Sweet's syndrome: Acute febrile neutrophilic dermatosis
  - –Fever
  - –Neutrophilic leukocytosis
  - –Erythematous skin plaques or nodules
  - –Classic RAS
  - –Conjunction with malignant conditions, e.g. leukemia

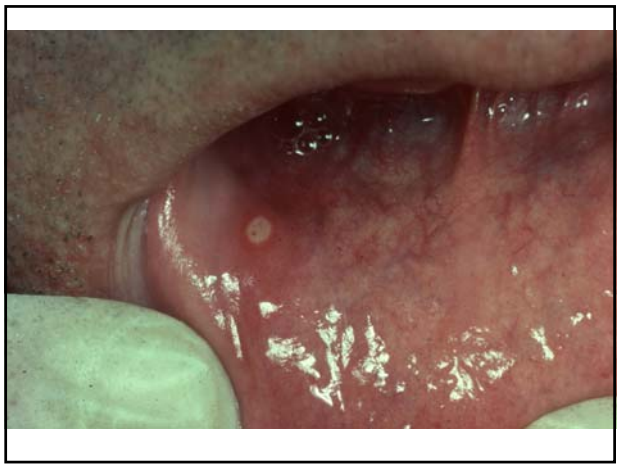
Recurrent Aphthous Stomatitis

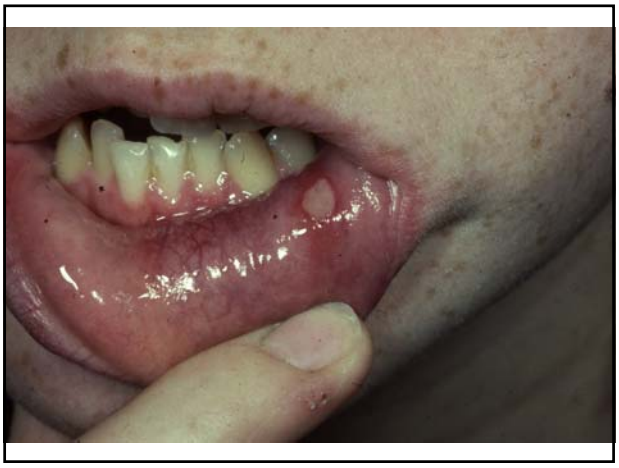
- **NO FORMATION OF VESICLES/BULLAE**
- Substantial evidence of an immunologic pathogenesis
- Slightly elevated levels of antibodies to oral mucous membranes
- Cell-mediated immunity
  - T-helper cells in the early stage
  - T-cytotoxic in ulcerative stage
  - T-helper in healing stage

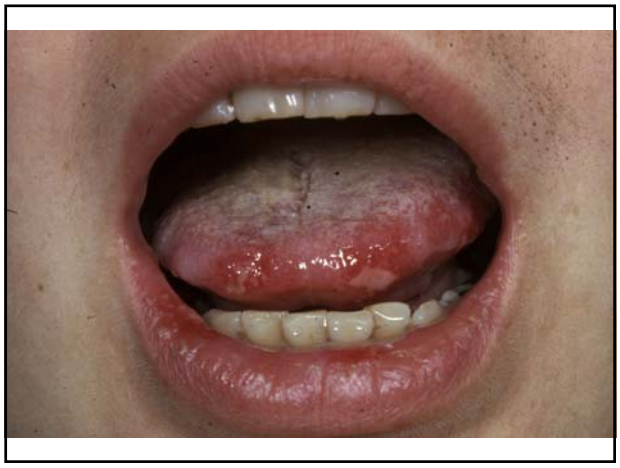
Minor Aphthae

- Most common
- Round oval ulcers up to 1 cm in diameter surfaced by yellow-white fibrin covering, surrounded by a halo of erythema
- Mucosa not covering bone, occasionally extending to the gingiva; anterior part of the mouth more often
- Early stage 1-2 days
- Burning sensation or soreness
- Heal in 7-21 days



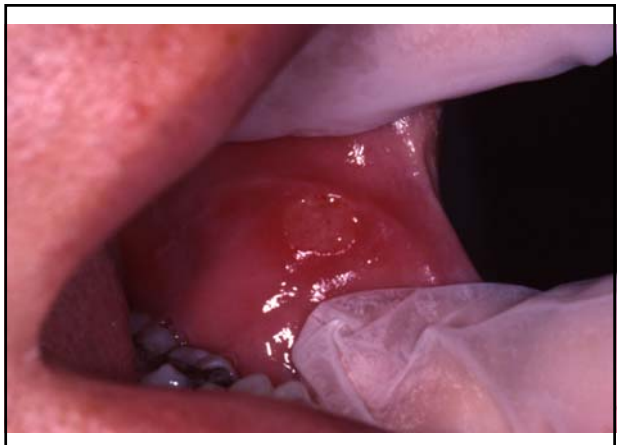


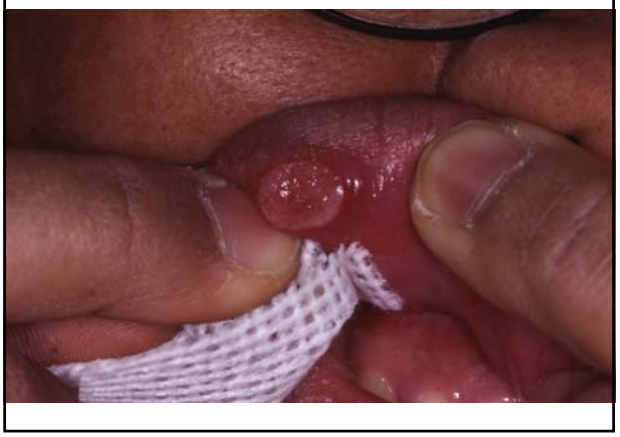


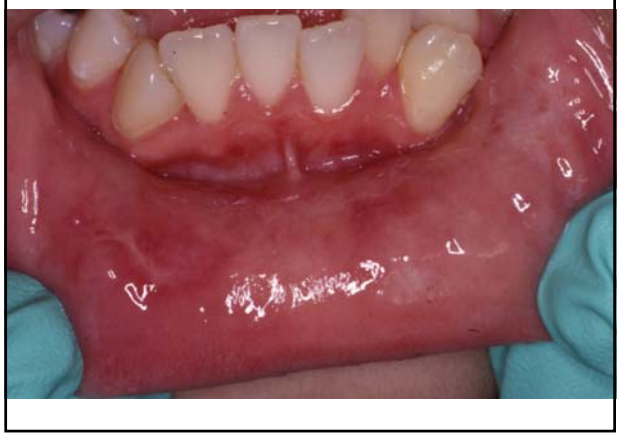


Major Aphthae

- Sutton's disease or periadenitis mucosa necrotica recurrens
- Larger than 1 cm
- Deeper and last longer
- Lips and posterior (faucial pillar, soft palate)
- May require biopsy
  - DD: Squamous cell carcinoma, fungal infection
- Heal with scarring

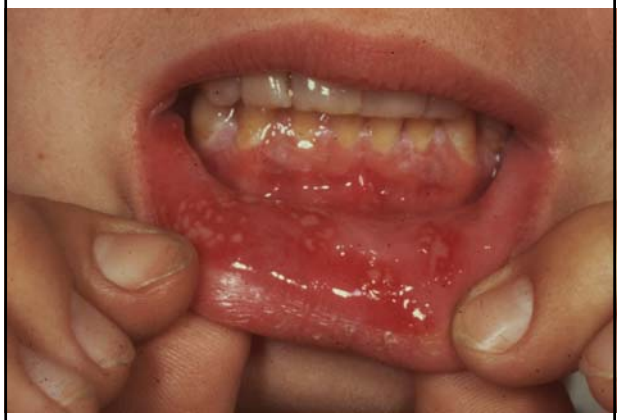


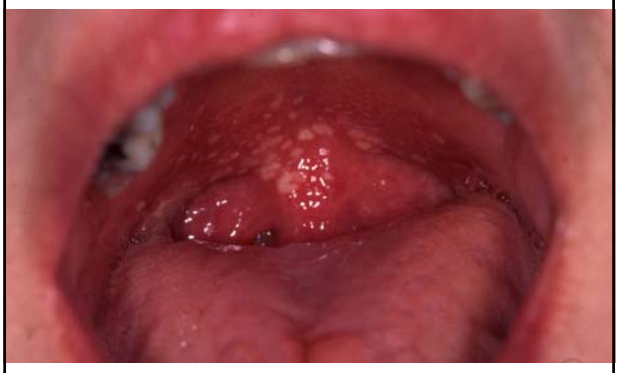




Aphthous Stomatitis Herpetiformis

- Demonstrate the greatest number; as many as 100
- 1-3 mm resembling herpes simplex virus ulcers
- Occur in groups and can coalesce
- Recurrences closely spaced
- Any oral site
- Female predominance



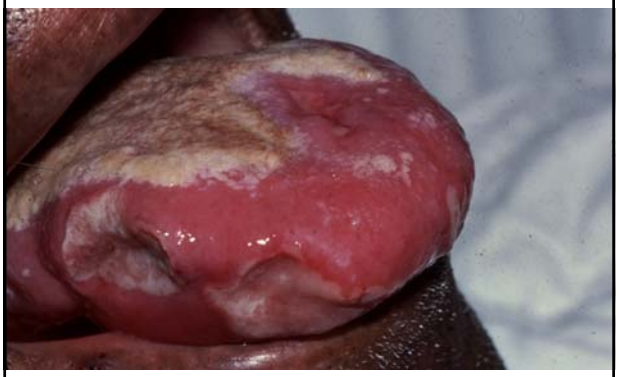


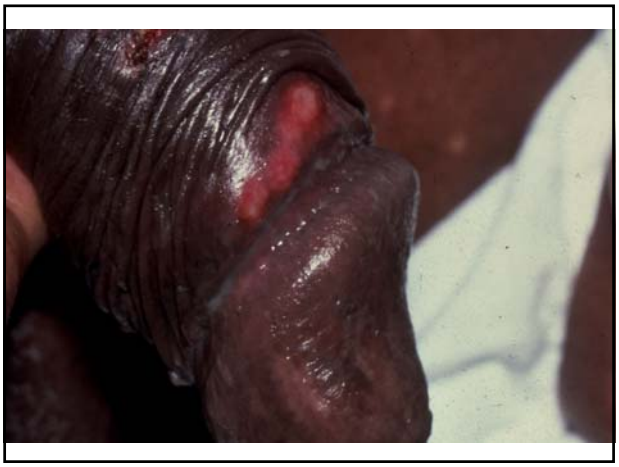
Treatment

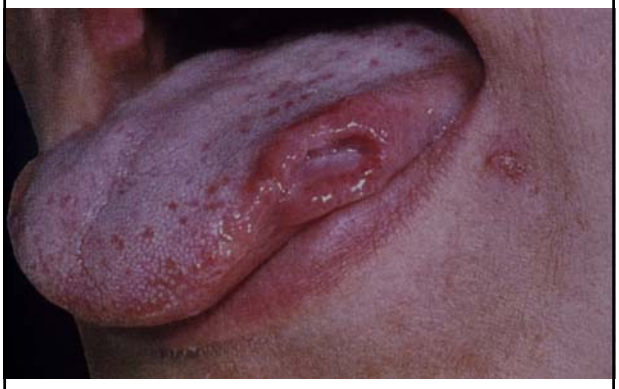
- No treatment
- Topical therapy for pain
- Systemic therapy for severe cases
- Topical steroids: betamethasone, fluocinonide, clobetasol propionate
- Many other therapies: colchicine, levamisole, dapsone, pentoxifylline,thalidomide, cytotoxic, MAO inhibitors, antibiotics, laser ablation
- Complex cases: Identification of the agent

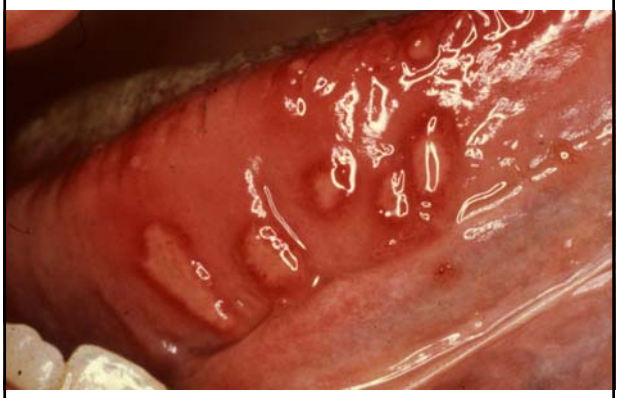
Behçet's Syndrome

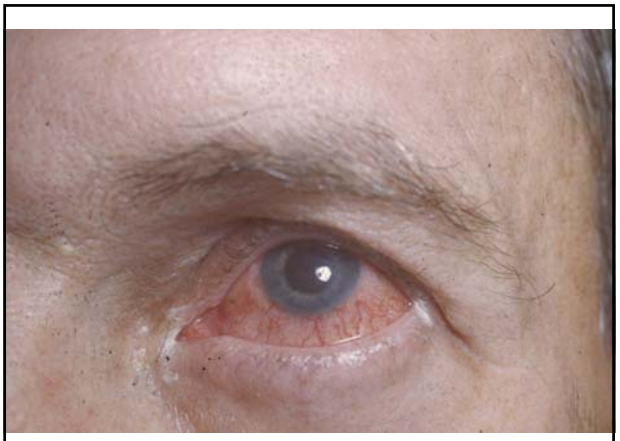
- Multisystem disease
- HLA-B51; bacteria, viruses, pesticides
- G.I. tract, cardiovascular system, C.N.S.(paralysis, dimentia), lungs, eyes (uveitis, conjunctivitis, cataracts, glaucoma), skin (erythema nodosum, pseudofolliculitis, acneiform nodules), and genitals (painful ulcers especially in men)
- Oral aphthae are a consistent feature
- Six or more; major aphthae high prevalence
- Pathergy testing











Sarcoidosis

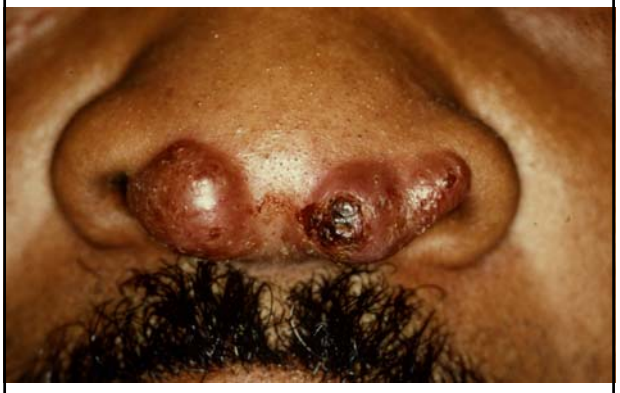
- Systemic chronic granulomatous disorder of unknown etiology (Mycobacterial infection ?)
- 10-15x in blacks, females, 20-40 years
- Dyspnea, chest pain, fatigue, arthralgia, weight loss
- Can arise insidiously; 20% of cases discovered after routine chest x-ray (hilar lymphadenopathy)
- Lungs: (Pulmonary hypertension & respiratory failure)
- Lymph nodes
- Skin: Lupus pernio, erythema nodosum
- Eyes: Keratoconjuctivitis sicca

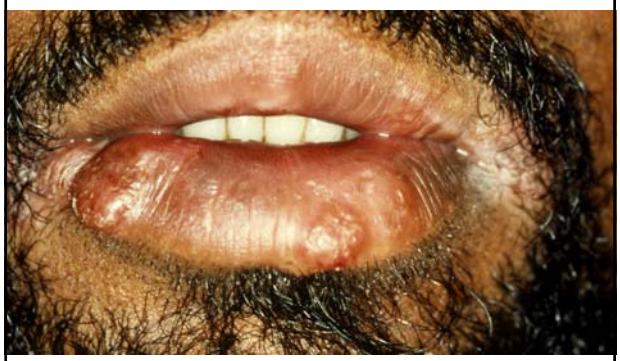
Sarcoidosis

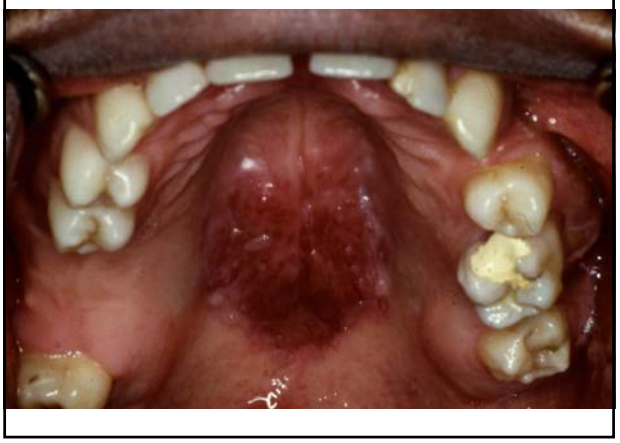
- Lupus pernio: violaceous indurated lesions of the skin (nose, lips, face)
- Heerfordt's syndrome (Uveoparotid fever)
  - Parotid enlargement
  - Anterior uveitis of the eye
  - Facial paralysis
  - Fever
- Löfgren syndrome
  - Erythema nodosum
  - Bilateral hilar lymphadenopathy
  - Arthralgia

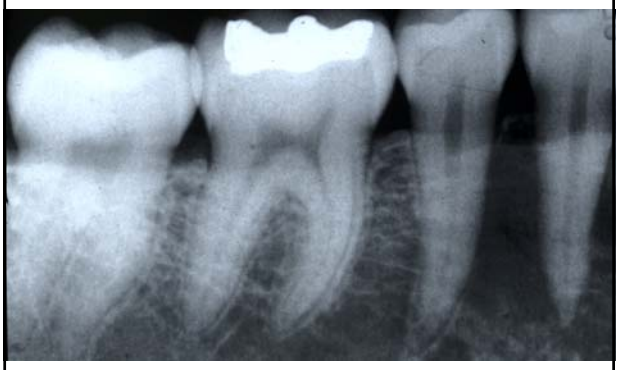
Sarcoidosis

- Oral involvement (can be first manifestation)
  - Isolated mass
  - Multiple nodular growths
  - Intraosseous lesions
    - Ill-defined radiolucencies
    - Localized periodontal disease
    - Can be first manifestation
  - Minor salivary gland involvement, mucoceles



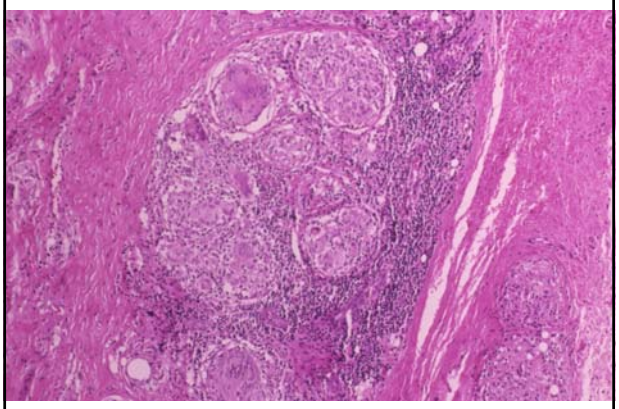






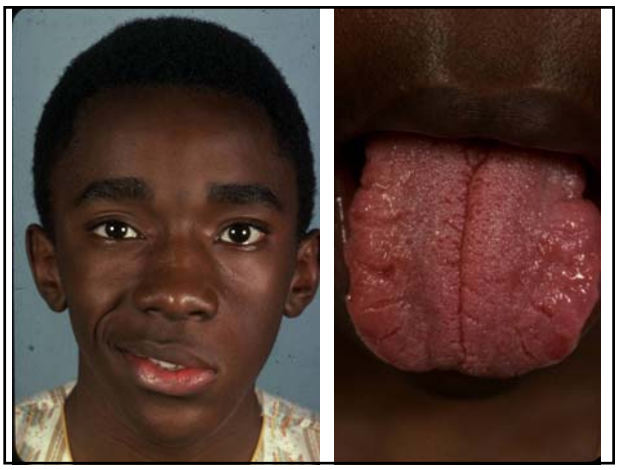
Sarcoidosis

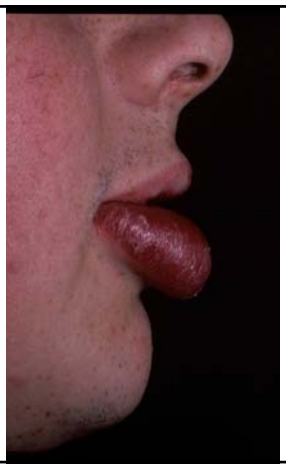
- Histopathology
  - Chronic granulomatous inflammation
  - Calcifications (Schaumann bodies)
  - Asteroid bodies
- Laboratory tests
  - Kweim test
    - Historic, 50-80% accuracy, false positive
  - Angiotensin Converting Enzyme
    - Elevated
- Treatment
  - No treatment
  - Corticosteroids, other immunosuppressant medications



Orofacial Granulomatosis

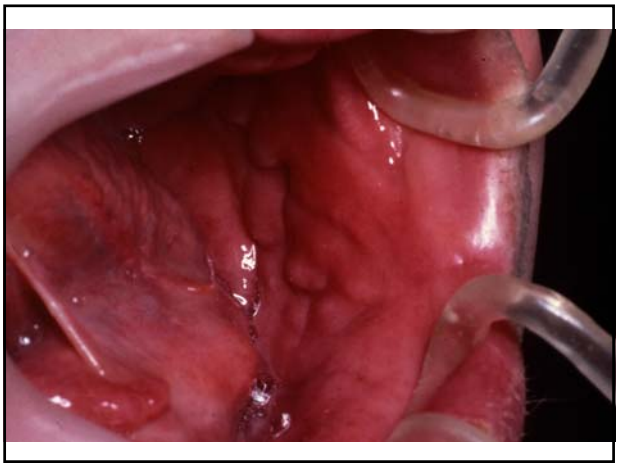
- Histologically: Non-specific granulomatous inflammation
- Includes Melkersson-Rosenthal syndrome and Miescher cheilitis
- Abnormal immune response





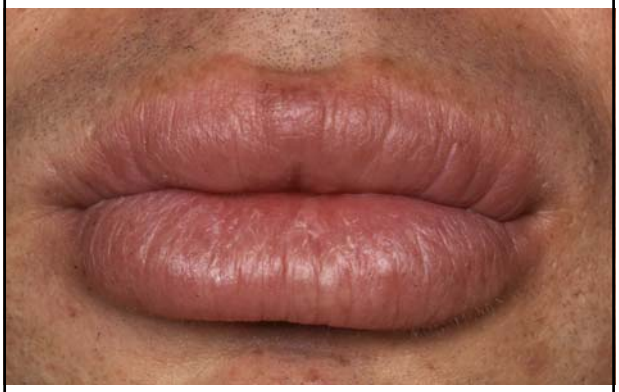
Systemic Diseases That May Mimic Orofacial Granulomatosis

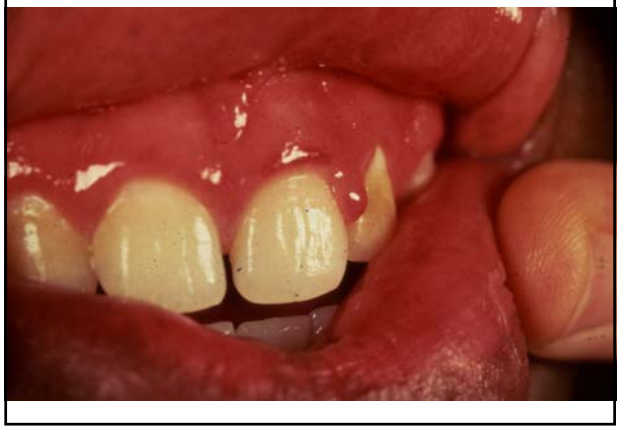
- Chronic granulomatous disease
  - X-linked, neutrophil microbicidal activity defective
  - Early life onset
  - Candidiasis, eczematous cheilitis, ANUG
  - Quantitative nitroblue tetrazolium test (-), neutrophilic leukocytosis, hypergammaglobulinemia
- Crohn's disease
- Sarcoidosis
- Tuberculosis

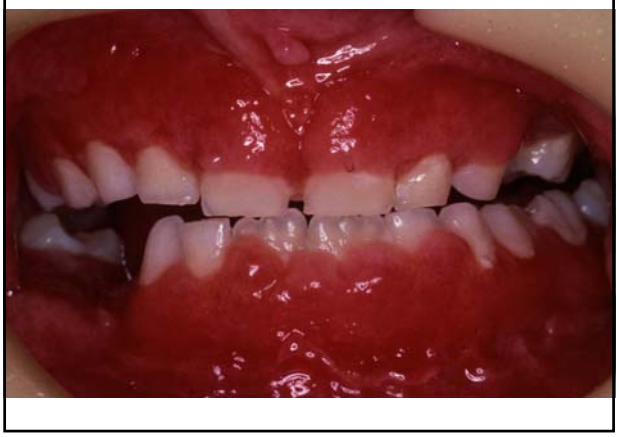


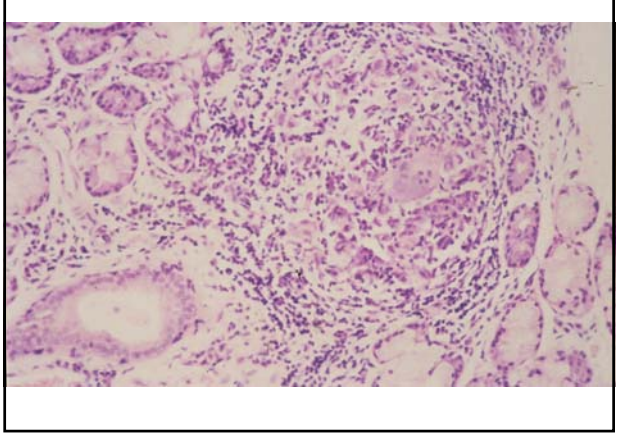
Local Processes That Can Present As Orofacial Granulomatosis

- Chronic oral infection
- Foreign material
- Allergy







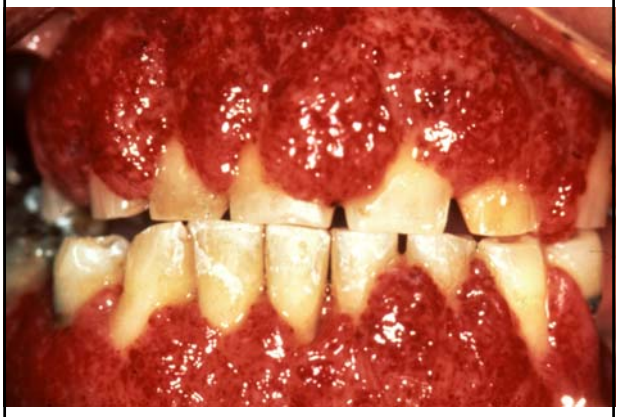


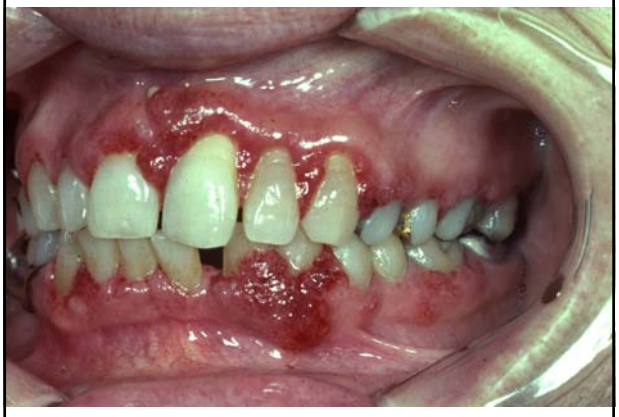
Wegener's Granulomatosis

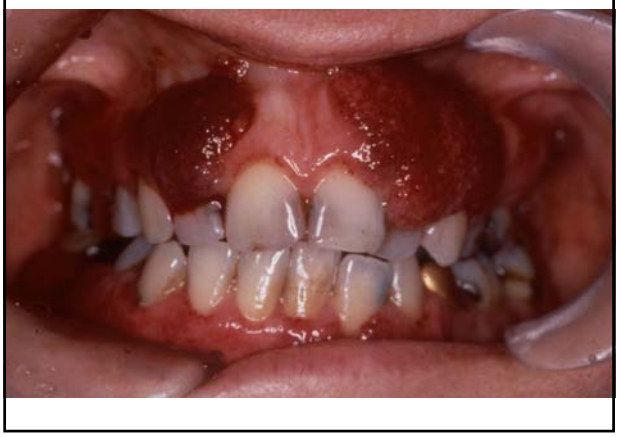
- Necrotizing granulomatous lesion
- Respiratory tract
- Necrotizing glomerulonephritis
- Systemic vasculitis of small arteries and veins
- Hypersensitivity response to inhaled antigen?
- Secondary reaction to an infection
- Three types
  - Classic
  - Limited
  - Superficial

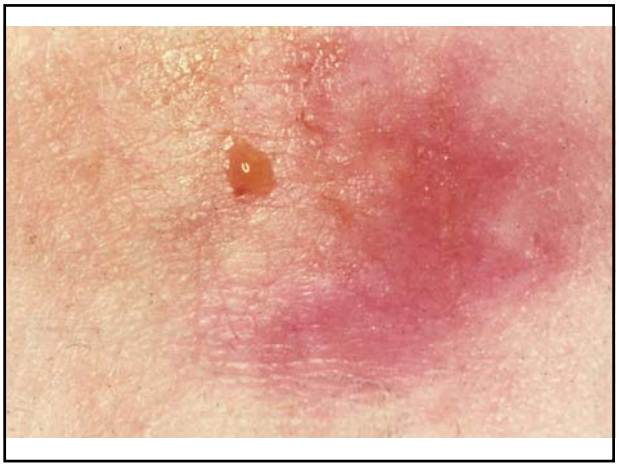
Wegener's Granulomatosis

- URT: Nasal discharge, otitis media, sore throat, epistaxis, destruction of nasal septum
- LRT: Dry cough, dyspnea, hemoptysis, chest pain
- Kidneys: Glomerulonephritis, proteinuria, RBC casts
- Mouth
  - Strawberry gingivitis (unique); early and only
  - Nonspecific ulcerations; late









Wegener's Granulomatosis Diagnosis

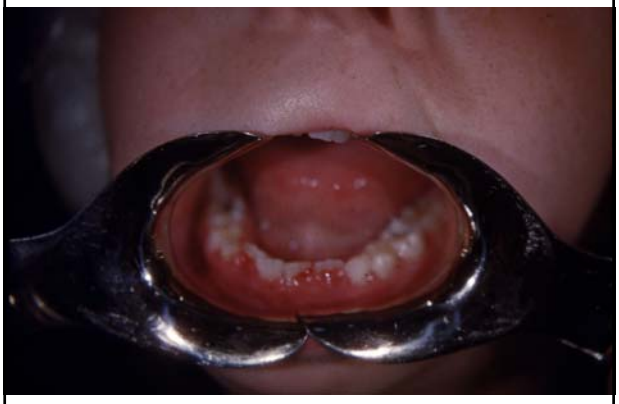
- Clinical findings
- Histopathologic findings
- Laboratory tests
  - c-ANCA: Cytoplasmic antineutrophil cytoplasm Ab
    - 1:80 (NL: 1:40)
    - 90-95% (+) for acute generalized
    - 60% for localized
    - A rising titer during treatment indicates relapse
  - c-ANCA/anti proteinase 3 Abs
    - 97% specific; 90% sensitive
  - p-ANCA: Perinuclear
  - Elevated ESR, WBC, normocytic normochromatic anemia

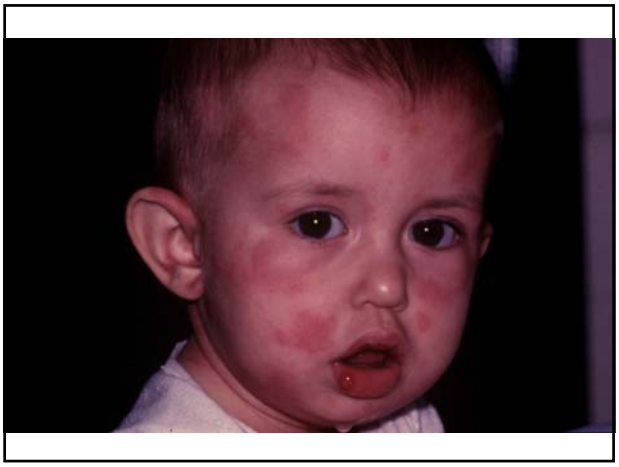
Wegener's Granulomatosis Treatment

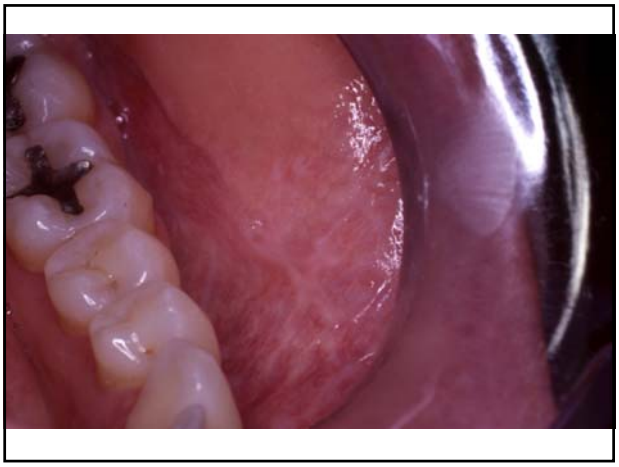
- Lethal without treatment
  - Mean survival: 5 months
  - 80% dead at one year
  - 90% dead by two years
- Cyclophosphamide (2mg/kg/day) and prednisone (1 mg/kg/day)
- Beclomethasone nasal spray
- Trimethoprim-sulfamethoxazole
  - Bacterial challenge for URT
- Cyclosporine

Stomatitis Medicamentosa

- Erythema multiforme
- Anaphylactic stomatitis
- Fixed drug eruption
- Lichenoid drug reaction
- Lupus erythematosus-like reaction
- Pemphigus-like eruption
- Non-specific vesiculoulcerative lesions







Stomatitis Medicamentosa

- Detailed medical history
- Identify medications that have been associated with allergic responses
- OVER-THE-COUNTER MEDICATIONS
- Association may be acute and obvious or it may be delayed
- If more than one medication is suspected serial elimination may be indicated
- DO NOT WORK ALONE

Stomatitis Venenata

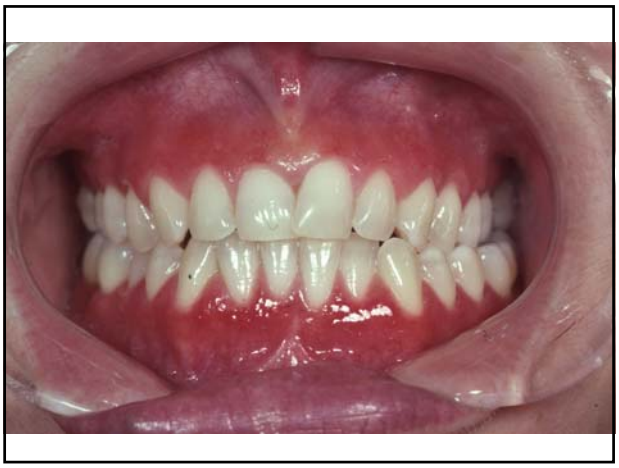
- a.k.a. Contact stomatitis
  - Acute and chronic
- Food and food additives, chewing gums, candies, mouthwashes, glove material (latex), anesthetics, dental impression material, denture adhesive preparations
- Rare because
  - Contact is brief
  - Saliva dilutes and removes antigens
  - Rapid dispersal and absorption
  - Allergen may be not recognized

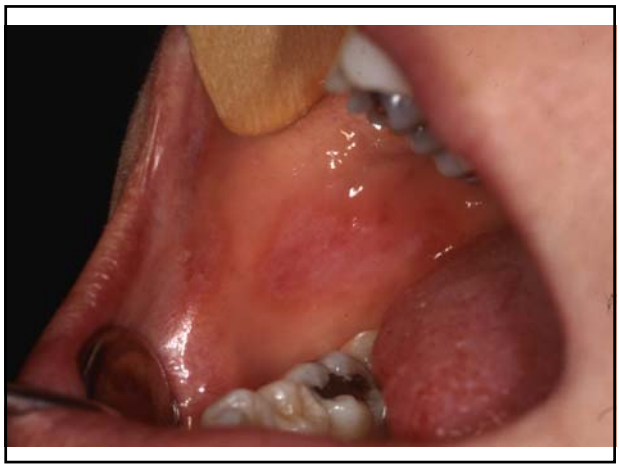
Stomatitis Venenata

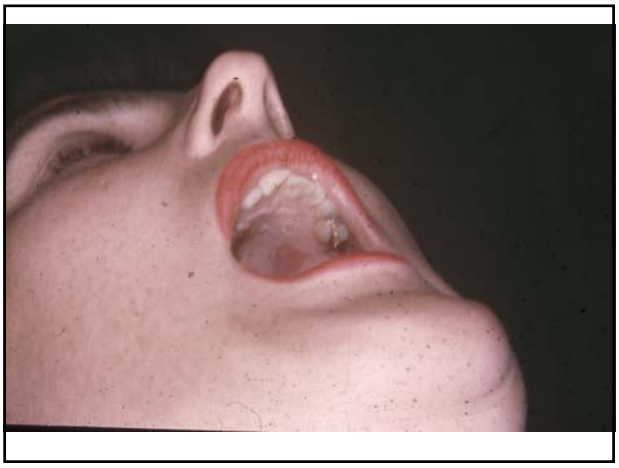
- If skin is sensitized, mouth may or may not demonstrate reaction
- If mouth is sensitized, skin usually demonstrates reaction
- Female predominance
- Small vesicles, aphthae, itching, edema, hyperkeratotic lesions, erythema and epithelial desquamation

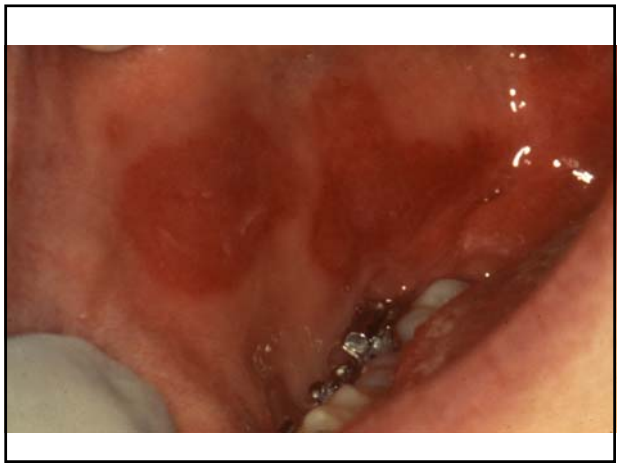
Stomatitis Venenata

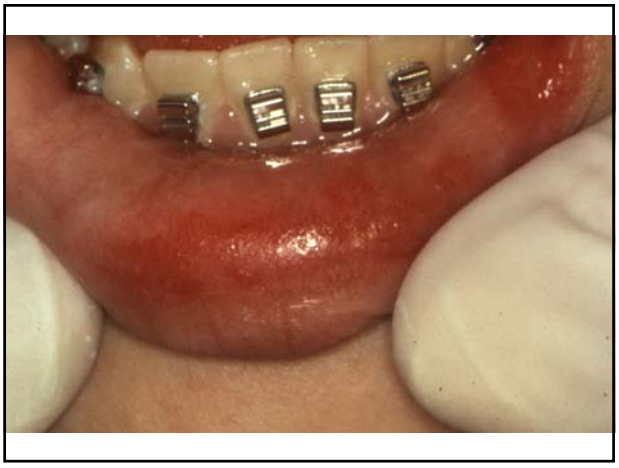
- Types
  - Exfoliative cheilitis or perioral dermatitis
  - Plasma cell gingivitis
    - Cinnamon, other herbs
  - Contact stomatitis due to cinnamon and mint
    - Shaggy hyperkeratosis and erythema
  - Contact stomatitis due to dental amalgam
    - Lichenoid lesions opposite to restoration









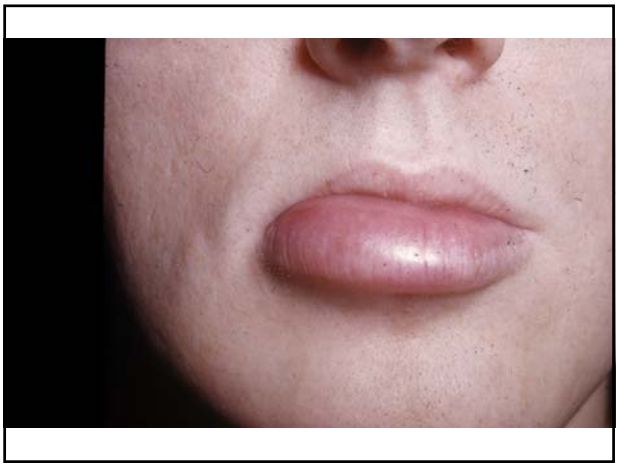


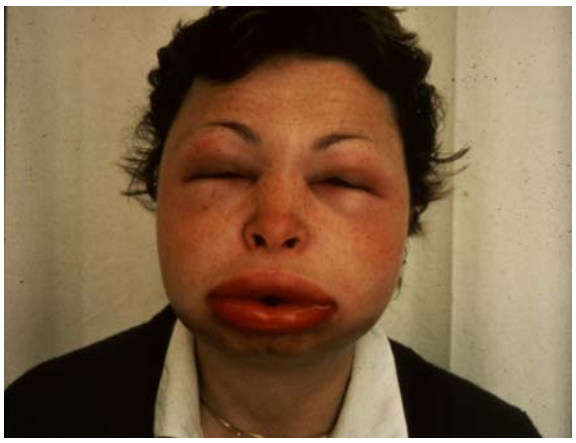
Perioral Dermatitis

- Corticosteroids worsen the lesions
- Tartar control toothpastes, bubble gum moisturizers, night creams, cosmetic products; in adults ~90% women
- Irritant or skin occlusion and flora proliferation
- Zone of spared skin adjacent to vermilion
- Perinasal, periorbital lesions
- Circumoral dermatitis

Angioedema (Angioneurotic edema)

- Patients are not neurotic
- Mast cell degranulation
- ACE inhibitors (captopril, enalapril, lisinopril) drug reactions
- Activation of complement
  - Hereditary
    - Quantitative reduction in the inhibitor that prevents transformation of C1 to C1 esterase
    - Dysfunctional inhibitor
  - Acquired
    - Lymphoproliferative disorders; formation of autoantibodies; minor trauma
    - Lupus erythematosus
    - Peripheral eosinophilia





Angioedema (Angioneurotic edema)

- Antihistamines
- Intramuscular epinephrine
- Intravenous steroids
- ACE inhibitors should be avoided if implicated
- C1-INH deficiency
  - Avoid vigorous exercise and trauma
  - Danazol or stanozolol (adrogens)
  - Corticosteroids