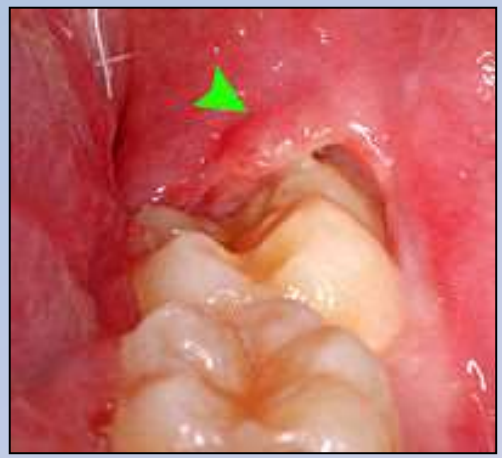
ACUTE GINGIVAL INFECTIONS

NUG

Primary herpetic gingivostomatitis



Pericoronitis

Dr. Sachin Bhagat

CONTENTS

- **Necrotizing ulcerative lesions**
  - Clinical features
  - Signs and symptoms
  - Predisposing factors
  - Clinical Course
  - Prevalence
  - Etiology
  - Differential diagnosis
  - Treatment
  - Recurrence

NECROTIZING ULCERATIVE GINGIVITIS (NUG)

- NUG is a microbial disease of the gingiva in a individual with impaired host response

Other names

- ANUG
- Trench mouth
- Vincent stomatitis
- Plaut – Vincent stomatitis
- Stomatitis ulcerosa
- Fusospirillary gingivitis
- Putrid stomatitis

CLINICAL FEATURES

- Punched out , crater like depressions at the crest of the interdental papillae
- Gray pseudomembranous slough covering the craters
- Pronounced linear erythema
- Spontaneous gingival haemorrhage
- Absence of pocket formation
- Fetid odor
- Increased salivation
- Occurs in patients with severe immunosuppression
- Sudden onset

Oral Symptoms

- Extremely sensitive to touch
- Metallic taste
- Pasty saliva

Extraoral signs and symptoms

- High fever
- Local Lymphadenopathy
- Increased pulse rate
- Loss of appetite
- General lassitude

PREDISPOSING FACTORS

Local

- Existing periodontal conditions
- Smoking or tobacco use

Systemic

- Nutritional deficiencies – Vitamin B & C
- Psychosomatic conditions - stress
- Debilitating conditions – Aids, Cancer

CLINICAL COURSE

NUG → **NUP**

Stages in progression of NUG are described by Pindborg and coworkers.

The lesion starts as:

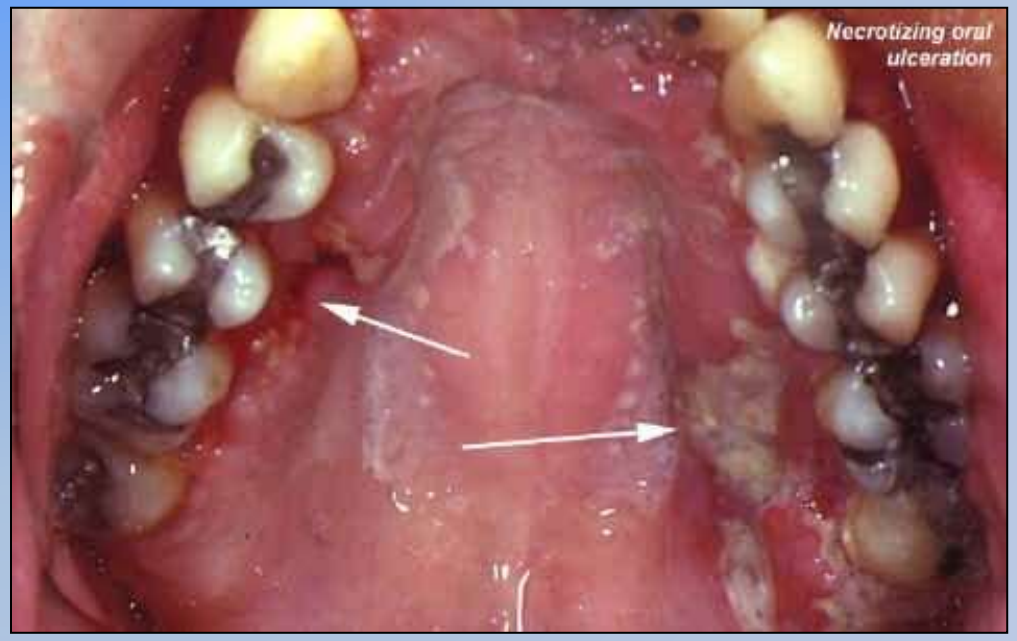
1. erosion of the tip of the interdental papilla
2. the lesion involving all of the papilla and also involving the marginal gingiva
3. the attached gingiva also get involved
4. exposure of the bone with complete loss of interdental papilla, marginal gingiva and the attached gingiva

Stages in the progress of NUG BY PINDBORG et al

Horning and Cohen extended the staging as follows:

- Stage 1: necrosis of the tip of the interdental papilla (93%)
- Stage 2: necrosis of the entire papilla (19%)
- Stage 3: necrosis extending to the marginal gingiva (21%)
- Stage 4: necrosis of the attached gingiva (1%)
- Stage 5: necrosis involving the buccal and labial mucosa (6%)
- Stage 6: necrosis exposing alveolar bone (1%)
- Stage 7: necrosis perforating skin of the cheek (0%)

According to Horning and Cohen Stage 1 is NUG, Stage 2 may be either NUG or NUP because attachment loss may have occurred, Stages 3 and 4 would correspond to NUP, Stages 5 and 6 would correspond to necrotizing stomatitis, and Stage 7 would be noma.



Stage 6 - Necrotizing stomatitis

Stage 7 - NOMA

PREVALENCE

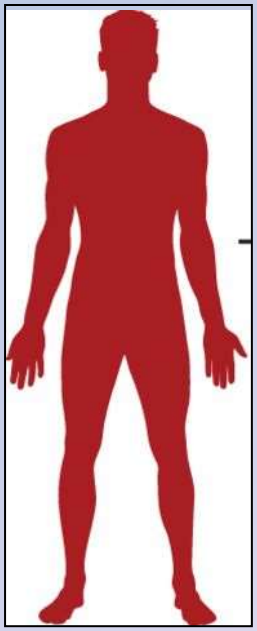
Lower socioeconomic status

Mental deficiencies – Downs syndrome

ETIOLOGY

bacteria

Host response



BACTERIA

Predominantly

- Spirochetes
- Fusiform bacilli

Others

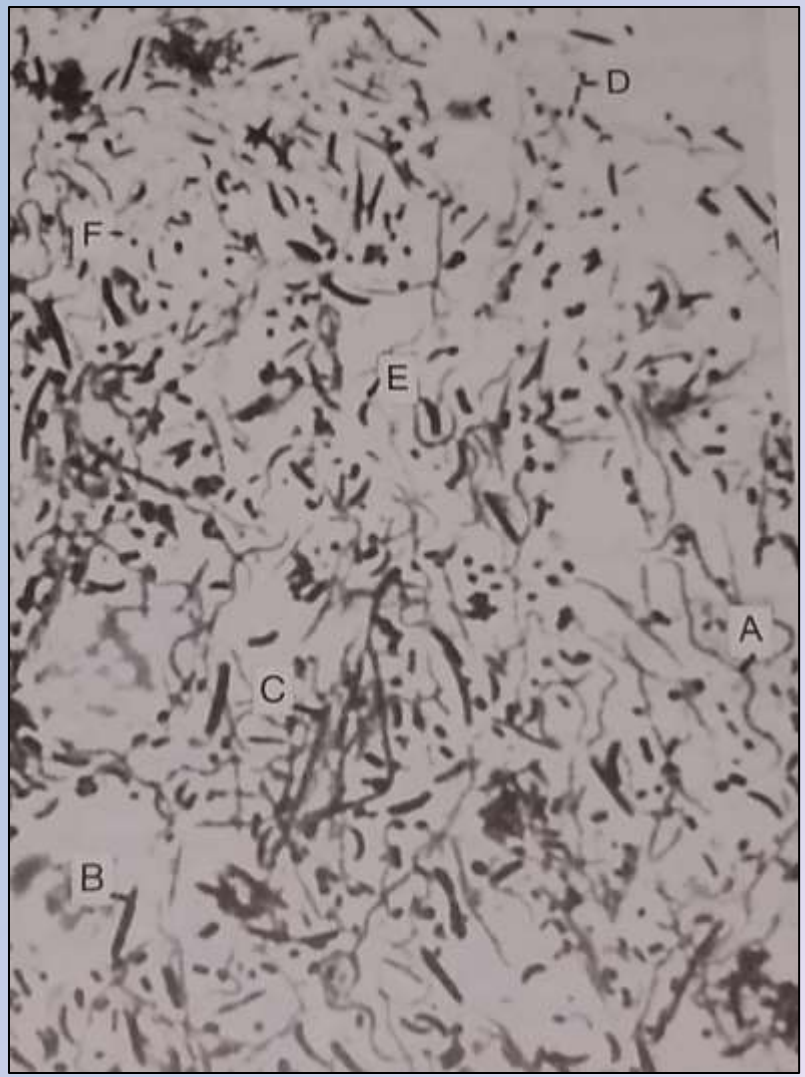
- Vibrios
- Filamentous organisms

Constant flora

- P. intermedia
- Fusobacterium
- Treponema
- Selenomonas

Variable flora

- Vibrios
- Cocci
- Filamentous organisms



Bacterial smear from NUG patient

RELATION OF BACTERIA TO THE NUG LESION

Lisgarten described the following four zones, which blend with each other and may not all be present in every case:

Zone 1: bacterial zone, the most superficial, consists of varied bacteria, including a few spirochetes of small, medium, and large type.

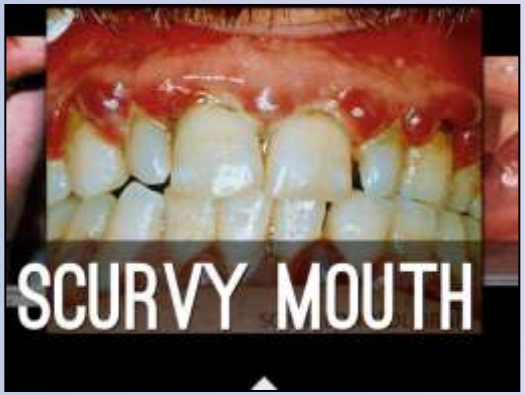
Zone 2: neutrophil rich zone contains numerous leukocytes, preponderant neutrophils with bacteria, including many spirochetes of various types between the leukocytes.

Zone 3: necrotic zone consists of disintegrated tissue cells, fibrillar material, remnants of collagen fibers, and numerous intermediate and large spirochetes with few other organisms.

Zone 4: zone of spirocheteal infiltration consists of well-preserved tissue infiltrated with intermediate and large spirochetes without other organisms.

Impaired Host response

- Nutritional deficiency
- Fatigue caused by chronic sleep deprivation
- Alcohol and drug abuse
- Psychosocial factors
- Systemic diseases



immunosupression

DIFFERENTIAL DIAGNOSIS

Necrotizing Ulcerative Gingivitis	Primary Herpetic Gingivostomatitis
Etiology: interaction between host and bacteria, most probably fusospirochetes	Specific viral etiology
Necrotizing condition	
Punched-out gingival margin; pseudomembrane that peels off and leaves raw areas	Diffuse erythema and vesicular eruption Vesicles rupture and leave slightly depressed oval or spherical ulcer
Marginal gingiva affected; other oral tissues rarely affected	Diffuse involvement of gingiva; may include buccal mucosa and lips
Uncommon in children	Occurs more frequently in children
No definite duration	Duration of 7–10 days
No demonstrated immunity	Acute episode results in some degree of immunity
Contagion not demonstrated	Contagion

GINGIVITIS, AND CHRONIC PERIODONTAL DISEASE

Necrotizing Ulcerative Gingivitis	Desquamative Gingivitis	Chronic Destructive Periodontal Disease
Bacterial smears show fusospirochetal complex	Bacterial smears reveal numerous epithelial cells and few bacterial forms	Bacterial smears variable
Marginal gingiva affected	Diffuse involvement of marginal and attached gingivae and other areas of oral mucosa	Marginal gingiva affected
Acute history	Chronic history	Chronic history
Painful	May or may not be painful	Painless if uncomplicated
Pseudomembrane	Patchy desquamation of gingival epithelium	Generally no desquamation, but purulent material may appear from pockets
Papillary and marginal necrotic lesions	Papillae do not undergo necrosis	Papillae do not undergo noticeable necrosis
Affects adults of both genders and occasionally affects children	Affects adults, most often women	Generally found in adults, occasionally found in children
Characteristic fetid odor	No odor	Some odor present but not strikingly fetid

TREATMENT OF NUG

- Alleviation of acute symptoms
    - Reducing microbial load
    - Removal of necrotic tissue
- t/t of underlying chronic disease
- Alleviation of generalised sypmtoms – fever and malaise
- Correction of systemic conditions

Patients

Non-ambulatory

- generalized systemic complications

Ambulatory

- No serious systemic complications

FIRST VISIT

- Complete history is taken
  - Diet
  - Habits
  - Psychosocial parameters
  - Previous treatment
- Reduce microbial load
- Remove the necrotic tissue

Acute "necrotizing ulcerative gingivitis" (NUG)

- **Topical anesthetic** - 2-3 mins on acutely involved areas
- Moistened **cotton pellets** are used to remove pseudomembranes and non attached surface debris
- Area is cleaned with **warm water**
- **Ultrasonic scalers** – for superficial calculus removal
- Other treatments - postponed
- Severe cases with systemic signs and symptoms – **antibiotics** prescribed
  - Amoxicillin 500mg 6-10 days OR
  - Erythromycin 500mg QID OR
  - Metronidazole 500mg BID for 7days

Instructions to the patient

- Avoid tobacco, alcohol
- Mouth rinsing – 3% H2O2+warm water and/or 0.12% CHX
- Adequate rest
- NSAIDs – ibuprufen
- Severe cases – bed rest, increased fluid consumption

SECOND VISIT

- 1-2 days after first visit
- Assessment for reduction in signs and symptoms
- Check for areas of pseudomembranous slough
    - Primary incubation zones – pericoronal flaps of 3rd molars
- Further scaling

THIRD VISIT

- After 5 days of second visit
- Check for resolution of symptoms
- H2O2 mouth wash stopped but CHX continued
- Nutritional , habits, oral hygiene counseling done
- Plan for management of the chronic periodontal condition is made

ADDITIONAL TREATMENTS

NUG

Gingivectomy and gingivoplasty

Escharotic drugs should not be used

- Phenols
- Silver nitrate
- Chromic acid
- Potassium bicarbonate

RECURRENT CASES

- Reassessment of D/D
- Underlying systemic disease
  - Undiagnosed conditions
- Inadequate local therapy
  - Incomplete treatment
  - Presence of primary incubations zones
- Inadequate compliance
  - Poor plaque control
  - Continued tobacco habit
  - Ineffective stress management
  - Continued malnutrition

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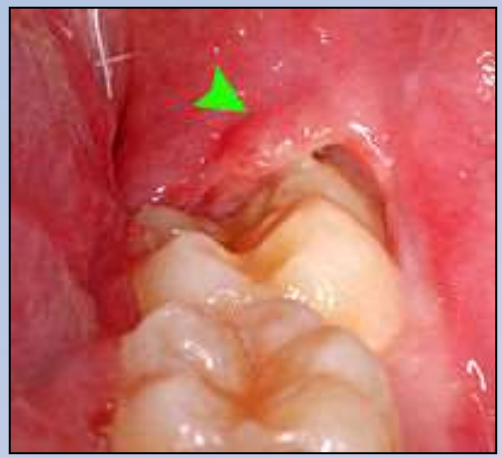

Pericoronitis

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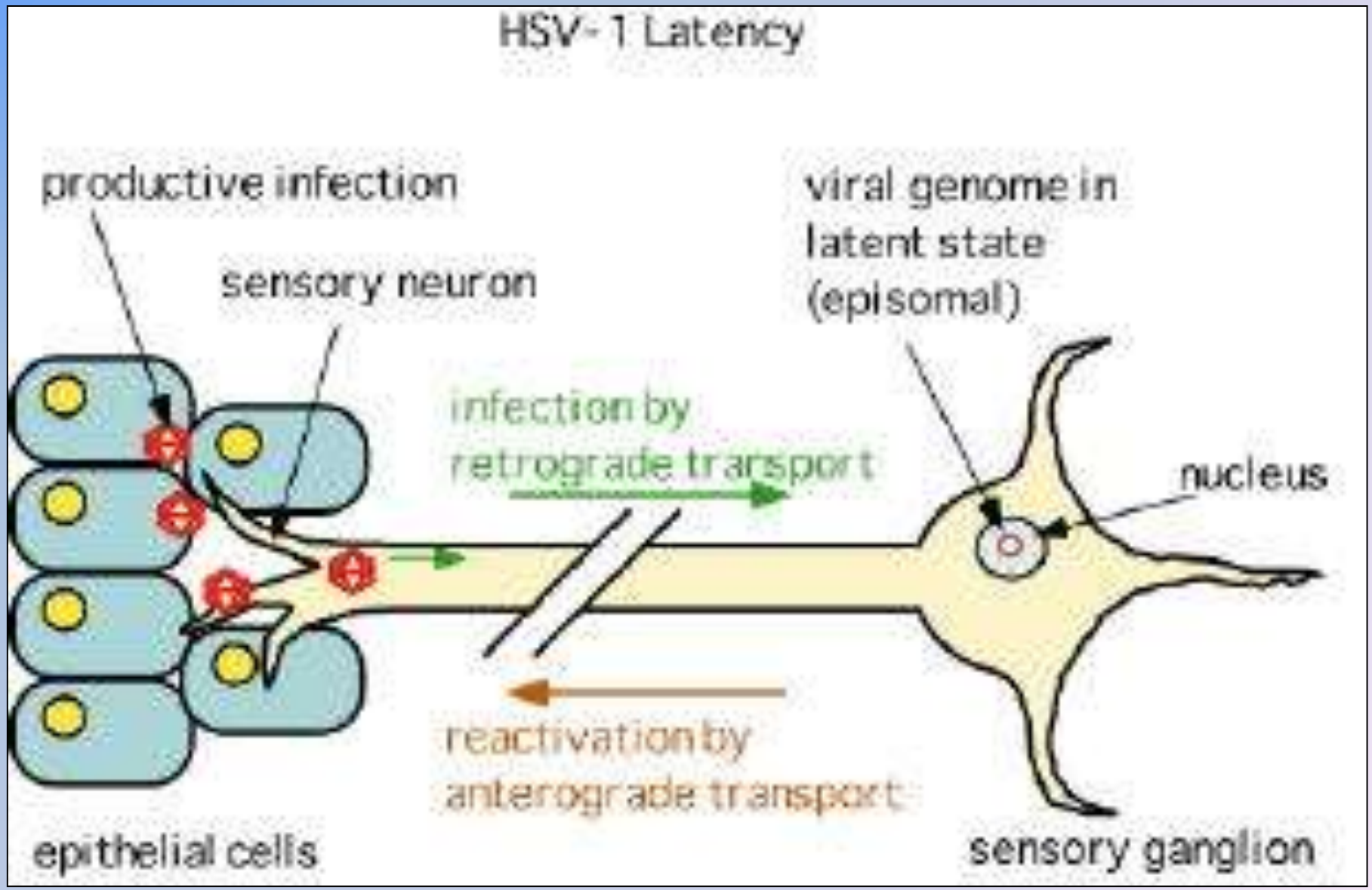
PRIMARY HERPETIC GINGIVOSTOMATITIS

- Caused by herpes simplex virus **(HSV – 1)**
- Most often in children **younger than 6 years** of age
- Mostly the primary infection is **asymptomatic**

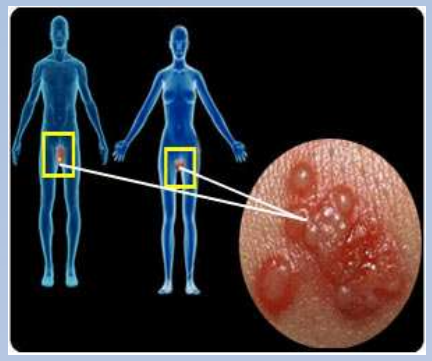

HSV-1 Latency
productive infection
sensory neuron
viral genome in
latent state
(episomal)
infection by
retrograde transport
nucleus
reactivation by
anterograde transport
epithelial cells
sensory ganglion

SECONDARY MANIFESTATIONS

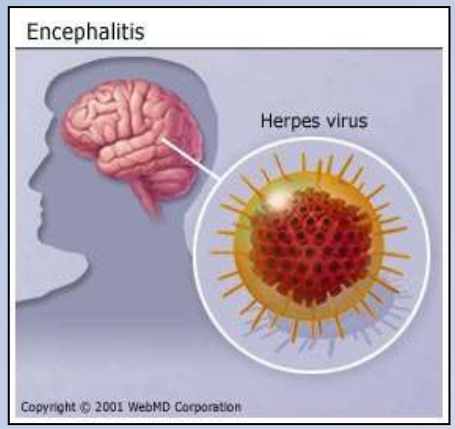
Herpes labialis

Herpes stomatitis

ocular herpes



Herpes genitalis



Herpes encephalitis

Herpetic whitlow

HERPES LABIALIS

Tingling, itching, or burning beneath the skin (usually around the mouth or nose) may begin. **The first sensation is the ideal time to begin treatment.**

Small red bumps begin to blister.

The blisters fill with fluid, forming a full-scale cold sore.

Blisters rupture, leaving shallow, reddish wounds. This is when cold sores are most contagious and painful.

The lesion collapses, leaving a yellowish crust. The crust falls away, leaving a red, tender area.

Redness and irritation fade as your immune system returns the cold sore to a dormant state.

courtesy,
Vardhman Dental Care
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CLINICAL FEATURES

Oral Signs

- **Diffuse, erythematous, shiny** involvement of gingiva and adjacent oral mucosa
- Initial stage – **vesicles** in the oral cavity
- After 24 hours – **vesicles rupture** and form painful small ulcers
- Ulcers have a red, elevated , halolike margin and a depressed , yellowish or grayish white central portion
- May be widely separated or form clusters
- Course – **7 to 10 days**
- **No scarring** of ulcerations

Oral Symptoms

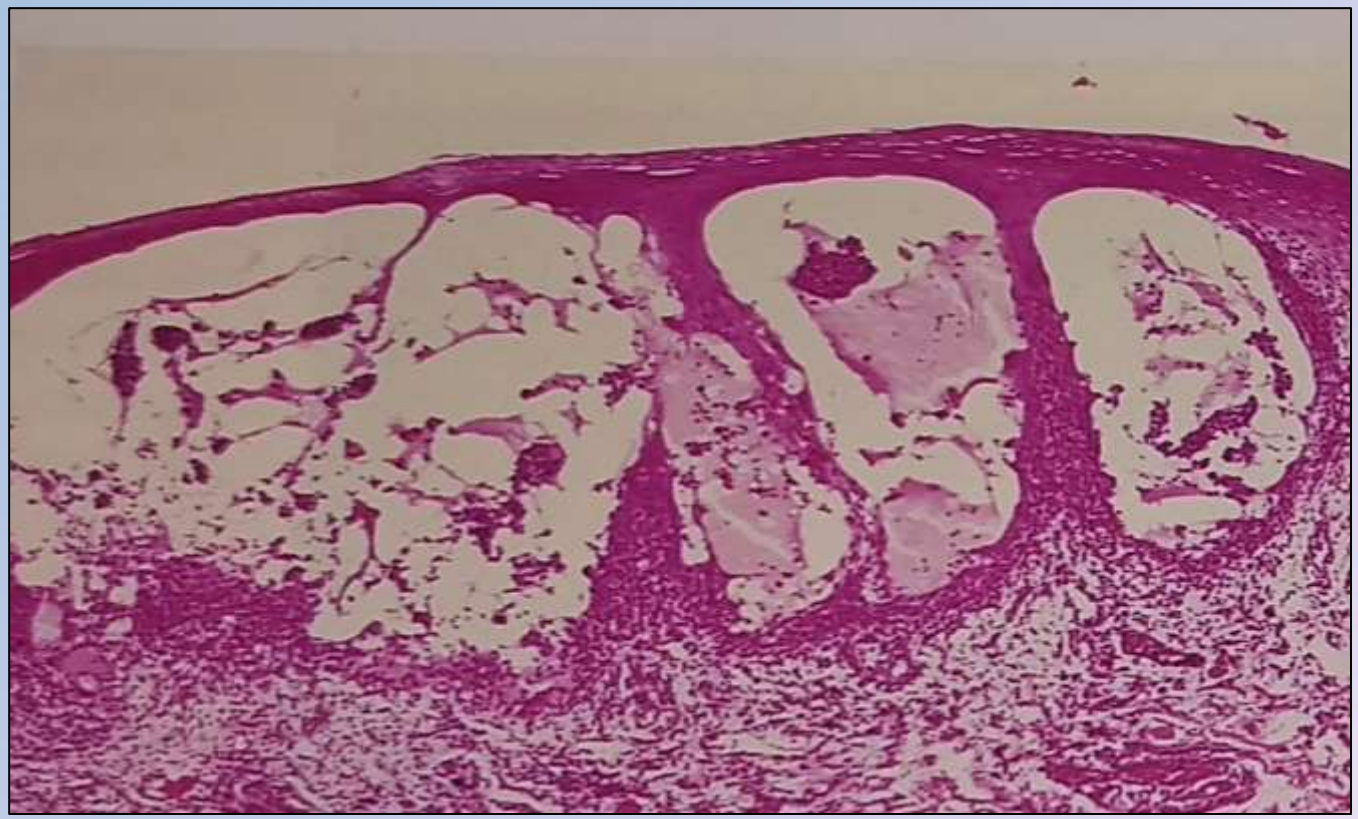
- Soreness of oral cavity
- Pain during eating, drinking and oral hygiene
- Children – Irritable and refuse to take food

Extraoral Signs and symptoms

- Fever - 101˚ F to 105˚F
- Cervical adenitis
- Generalised Malaise

HISTOPATHOLOGY

- Epithelial cells show **ballooning degeneration**
- Tzank cells - multinucleated giant cells



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No definite duration	Duration of 7–10 days
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TREATMENT

- Early diagnosis and immediate treatment of antiviral therapy
- **Diagnosis within 3 days**
  - acyclovir suspension – 15mg/kg 5 times daily for 7 days
- **Diagnosis after 3 days in immunocompetent individual**
  - Acyclovir therapy may not be very useful
  - Only palliative treatment
    - Fever and pain – **NSAIDs**

- **Topical anesthetics** – pain from ulcerations
- Removal of plaque and food debris
- **Local and systemic antibiotics** – to prevent opportunistic infection of the ulcers

PERICORONITIS

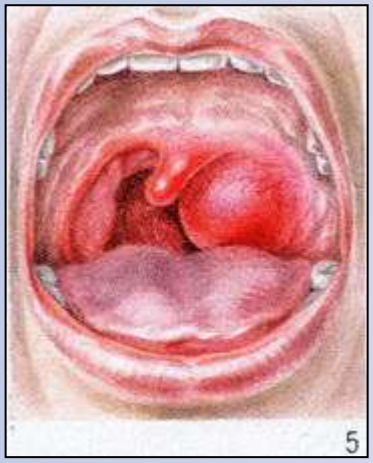
- Inflammation of the gingiva in relation to the crown of an incompletely erupted tooth
- Common sites – **Mandibular 3rd molars**
- Types – acute, subacute, chronic

CLINICAL FEATURES

- **Red, swollen suppurating** lesion which is tender
- Pain can **radiate** to ear, throat and floor of the mouth
- Extremely uncomfortable – inability to close the mouth
- Trismus
- Swelling of the cheek
- Lymphadinitis
- Systemic signs
  - Fever
  - Leukocytosis
  - malaise

COMPLICATIONS

- Infection may spread
  - Posteriorly – oropharyngeal area
  - Medially – base of the tongue



Peritonsillar abscess

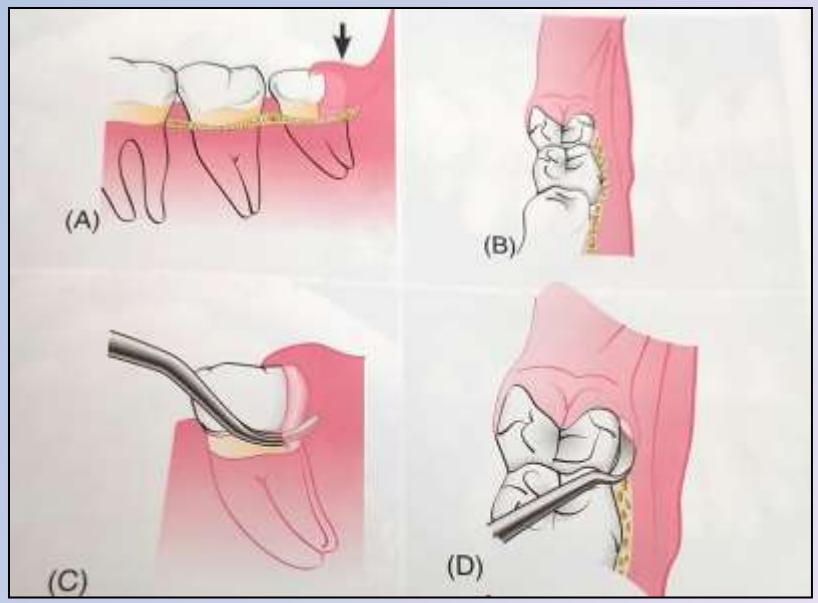
Pericoronal abscess

Cellulitis

Ludwig's angina

TREATMENT

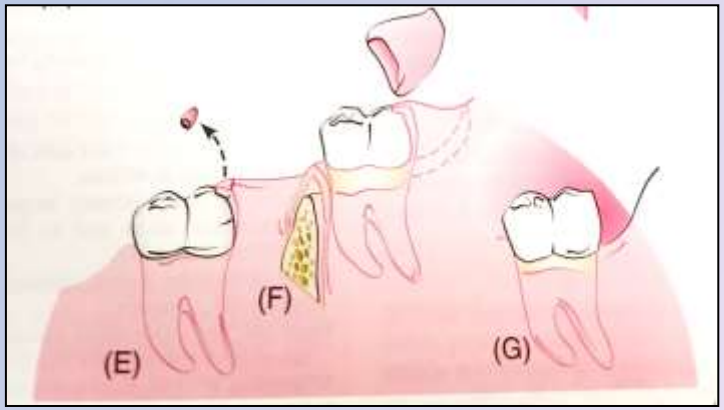
- Symptom free pericoronal flap
  - Removed to prevent acute involvement
- **Acute pericoronitis**
  - Flushing with warm water
  - Swabbing with antiseptic
  - Assesment of opposing tooth
    - Reduce soft tissue and/or
    - Adjust opposing tooth
  - **Antibiotics** - severe cases
  - **Incision and drainage** – pericoronal abscess
  - Decision to retain the tooth is taken after the acute symptoms subside



Retain the tooth

Extract

- Impacted
- Incorrect angulation
- Bone loss and caries distal to 2nd molar
- Absence of opposing 3rd molar



operculectomy

IMPORTANT QUESTIONS

Viva

- Classical clinical features of NUG
- Stages of Progression of NUG
- Primary incubation zones

Short notes

- Zones in a necrotizing ulcerative lesions
- t/t of of NUG
- Differential diagnosis of NUG

Long Answer Questions

- Enumerate different acute gingival infections and describe NUG in detail along with its treatment

THANK YOU