

(Periodontology)
Treatment of
Acute Gingival Diseases

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The treatment of acute gingival disease entails the alleviation of the acute symptoms and elimination of all other periodontal disease, chronic and acute, throughout the oral cavity.

Treatment is not complete as long as periodontal pathologic changes or factors capable of causing them are present.

Acute Gingival Diseases:

- 1- Necrotizing ulcerative gingivitis (NUG).
- 2- Acute herpetic gingivostomatitis.
- 3- Periocoronitis.

Necrotizing ulcerative gingivitis (NUG).

Necrotizing ulcerative gingivitis (NUG) is a microbial disease of the gingiva in the context of an impaired host response. It is characterized by the death and sloughing of gingival tissue and presents with characteristic signs and symptoms

NUG is usually identified as an **acute disease**. the term “acute” in this case is a clinical description and should not be used as a diagnosis because there is no chronic form of the disease.

NUG often undergoes a diminution in severity without treatment, leading to a **subacute stage** with milder clinical symptoms.

Classification:

- Acute disease: Most often occurs.
- Subacute form: Mild and more persistent form .
- Recurrent Periods of remission and exacerbation.

NUG can cause tissue destruction involving the periodontal attachment apparatus, especially in patients with longstanding disease or severe immunosuppression. When bone loss occurs, the condition is called necrotizing ulcerative periodontitis (NUP).

NUG is characterized by:

- sudden onset
- after an episode of debilitating disease or acute respiratory tract infection
- protracted work without adequate rest
- poor nutrition
- tobacco use
- psychologic stress

Oral Signs of NUG:

- Characteristic lesions are punched-out, craterlike depressions at the crest of the interdental papillae, subsequently extending to the marginal gingiva and rarely to the attached gingiva and oral mucosa.

- The surface of the gingival craters is covered by a gray, pseudomembranous slough, demarcated from the remainder of the gingival mucosa by a pronounced linear erythema.
- In some cases the lesions are denuded of the surface pseudomembrane, exposing the gingival margin, which is : red shiny hemorrhaging.
- Spontaneous gingival hemorrhage or pronounced bleeding after the slightest stimulation are additional characteristic clinical signs.
- Other signs often found are fetid odor and increased salivation.

The characteristic lesions may progressively destroy the gingiva and underlying periodontal tissues, but NUG or NUP does not usually lead to periodontal pocket formation because the necrotic changes involve the junctional epithelium and a viable junctional epithelium is needed for pocket deepening so causing gingival recession rather than pocket formation, however,NUG can occur in otherwise disease-free mouths or can be superimposed on chronic gingivitis or periodontal pockets.

Extraoral and Systemic Signs and Symptoms

- Patients are usually ambulatory and have a minimum of systemic symptoms.
- Local lymphadenopathy and a slight elevation in temperature are common features of the mild and moderate stages of the disease.
- In severe cases, there may be high fever, increased pulse rate, leukocytosis, loss of appetite, and general lassitude.

Treatment of NUG:

A_First Visit.

1- At the first visit, the clinician should obtain a general impression of the patient's background, including information regarding recent illness, living conditions, dietary background, type of employment, hours of rest, and mental stress.

2-The patient's general appearance should be observed, as well as apparent nutritional status and responsiveness or lassitude, and his or her temperature should be taken.

3-The submaxillary and submental areas should be palpated to detect enlarged lymph glands.

4-Treatment during this initial visit is confined to the acutely involved areas, which are isolated with cotton rolls and dried. A topical anesthesia is applied, and after 2 or 3 minutes the areas are gently swabbed with a cotton pellet to remove the pseudomembrane and nonattached surface debris. Each cotton pellet is used in a small area and is then discarded; sweeping motions over large areas with a single pellet are not recommended.

5-After the area is cleansed with warm water, the superficial calculus is removed. Ultrasonic scalers are very useful for this purpose, since they do not elicit pain, and the water jet aids in the lavage of the area.

6-Subgingival scaling and curettage are contraindicated at this time because of the possibility of extending the infection to deeper tissues, and also of causing a bacteremia.

Unless an emergency exists, procedures such as extractions or periodontal surgery are postponed until the patient has been symptom

free for a period of 4 weeks, to minimize the likelihood of exacerbating the acute symptoms.

7-The patient is also told to rinse the mouth every 2 hours with a glassful of an equal mixture of warm water and 3% hydrogen peroxide. Twice-daily rinses with 0.12% chlorhexidine are also very effective. Pursue usual activities, but avoid excessive physical exertion or prolonged exposure to the sun as required in golf, tennis, swimming, or sunbathing. Avoid tobacco, alcohol, and condiments. Confine tooth brushing to the removal of surface debris with a bland dentifrice; overzealous brushing and the use of dental floss or interdental cleaners will be painful.

8- Patients with moderate or severe NUG and local lymphadenopathy or other systemic symptoms are placed on an antibiotic regimen of penicillin, 500 mg orally every 6 hours.

For penicillin-sensitive patients, other antibiotics, such as erythromycin (500 mg every 6 hours) are prescribed. Metronidazole (500 mg twice times daily for 7 days), is also effective.

Antibiotics are continued until the systemic complications or the local lymphadenopathy have subsided.

When used, systemic antibiotics also reduce the oral bacterial flora and alleviate the oral symptoms, but they are only an adjunct to the complete local treatment the disease requires and Patients treated by systemic antibiotics alone should be cautioned that the acute painful symptoms may recur after the drug is discontinued.

9-Patients are told to report back to the clinician in 1 to 2 days. The patient should be advised of the extent of total treatment the condition requires and warned that treatment is not complete when pain stops.

He or she should be informed of the presence of chronic gingival or periodontal disease, which must be eliminated to prevent recurrence of the acute symptoms.

B_Second Visit.

1- At the second visit, 1 to 2 days later, the patient's condition is usually improved; the pain is diminished or no longer present.

The gingival margins of the involved areas are erythematous, but without a superficial pseudomembrane.

2-Scaling is performed if sensitivity permits. Shrinkage of the gingiva may expose previously covered calculus, which is gently removed.

3-The instructions to the patient are the same as those given previously.

C_Third Visit.

1- At the next visit, 1 to 2 days after the second, the patient should be essentially symptoms free. There may still be some erythema in the involved areas, and the gingiva may be slightly painful on tactile stimulation

2-Scaling and root planing are repeated.

3-The patient is instructed in plaque control procedures which are essential for the success of the treatment and the maintenance of periodontal health. The hydrogen peroxide rinses are discontinued, but chlorhexidine rinses can be maintained for two or three weeks.

Subsequent Visits.

Unfortunately, treatment is often stopped at this time because the acute condition has subsided, but this is when comprehensive treatment of the patient's chronic periodontal problem should start.

1-In subsequent visits, the tooth surfaces in the involved areas are scaled and smoothed, and plaque control by the patient is checked and corrected if necessary.

2-Appointments are scheduled for the treatment of chronic gingivitis, periodontal pockets, and pericoronal flaps, as well as for the elimination of all forms of local irritation.

Patients without gingival disease other than the treated acute involvement are dismissed for 1 week.

If the condition is satisfactory at that time, the patient is dismissed for 1 month, at which time the schedule for subsequent recall visits is determined according to the patient's needs.

Gingival Changes with Healing

The characteristic lesion of NUG undergoes the following changes in the course of healing in response to treatment:

1. Removal of the surface pseudomembrane exposes the underlying red, hemorrhagic, craterlike depressions in the gingiva.
2. In the next stage the bulk and redness of the crater margins are reduced, but the surface remains shiny .
3. This is followed by the early signs of restoration of normal gingival contour and color.

4. In the final stage the normal gingival color, consistency, surface texture, and contour are restored. Portions of the root exposed by the acute disease are covered by healthy gingiva .

Primary Herpetic Gingivostomatitis

Primary herpetic gingivostomatitis is an infection of the oral cavity caused by the herpes simplex virus type 1 (HSV-1). It occurs most often in infants and children younger than 6 years of age, but it is also seen in adolescents and adults. It occurs with equal frequency in male and female patients.

The primary infection in most persons is asymptomatic, but as a part of the primary infection, the virus ascends through nerves, where it persists as latent HSV in neuronal ganglia that innervate the site, secondary manifestations result from various stimuli such as sunlight, trauma, fever, and stress. These secondary manifestations include herpes labialis , herpetic stomatitis, herpes genitalis, ocular herpes, and herpetic encephalitis.

Secondary herpetic stomatitis can occur on the palate, gingiva , or on the mucosa as a result of dental treatment that traumatizes or stimulates the latent virus in the ganglia innervating the area.

□ Oral Signs

□ Primary herpetic gingivostomatitis appears as a diffuse, erythematous, shiny involvement of the gingiva and the adjacent oral mucosa, with varying degrees of edema and gingival bleeding.

□ In its initial stage, it is characterized by the presence of discrete, spherical gray vesicles, which may occur on the gingiva, labial and buccal mucosae, soft palate, pharynx, sublingual mucosa, and tongue .

- After approximately 24 hours, the vesicles rupture and form painful, small ulcers with a red, elevated, halolike margin and a depressed, yellowish or grayish white central portion. These occur either in widely separated areas or in clusters where confluence occurs.
- Occasionally, primary herpetic gingivitis may occur without overt vesiculation. The clinical picture consists of diffuse, erythematous, shiny discoloration and edematous enlargement of the gingivae with a tendency toward bleeding.
- The course of the disease is limited to 7 to 10 days.

Scarring does not occur in the areas of healed ulcerations

Extraoral and Systemic Signs and Symptoms

- Cervical adenitis, fever as high as (38° C to 40.6° C), and generalized malaise are common.

Treatment :

consists of palliative measures to make the patient comfortable until the disease runs its course.

1-Plaque, food debris and superficial calculus are removed to reduce gingival inflammation, which complicates the acute herpetic involvement.

Extensive periodontal therapy should be postponed until the acute symptoms subside to avoid the possibility of exacerbation .

2-For symptomatic relief, especially before meals, topical local anesthetic, such as lidocaine hydrochloride viscous solution can be applied to the affected areas. Before each meal the patient should rinse with 1 tablespoon of this solution.

3- If the patient is experiencing pain of longer duration, aspirin or a nonsteroidal anti-inflammatory agent can be given systemically.

4-Local or systemic application of antibiotics is sometimes advised to prevent opportunistic infection of ulceration. This is especially true in the immune compromised individual.

If the condition does not resolve within a 2-week period, the patient should be referred to a physician for medical consultation.

Comparison between NUG and primary herpetic gingivostomatitis :

NUG	Primary herpetic gingivostomatitis
Etiology:interaction between host and bacteria	Specific viral etiology
Necrotizing condition	Diffuse erythema and vesicular eruption
Punched-out gingival margin; pseudomembrane that peels off leaving raw areas	Vesicles rupture and leave slightly depressed oval and spherical ulcers
Marginal gingiva affected,other oral tissues rarely affected	Diffuse involvement of gingiva; may include buccal mucousa and lips
Uncommon in children	Occur more frequently in children
No definite duration	Duration of 7-10 days
No demonstrated immunity	Acute episodes result in some degree of immunity
Contagion not demonstrated	Contagion

Pericoronitis

The term pericoronitis refers to inflammation of the gingiva in relation to the crown of an incompletely erupted tooth.

It occurs most frequently in the mandibular third molar area. It may be ACUTE, SUBACUTE or CHRONIC.

Clinical Features

- The partially erupted or impacted mandibular third molar is the most common site of pericoronitis.
- The space between the crown of the tooth and the overlying gingival flap (operculum) is an ideal area for the accumulation of food debris and bacterial growth.
- Acute inflammatory involvement is a constant possibility and may be exacerbated by trauma, occlusion, or a foreign body trapped underneath the tissue flap.
- The inflammatory fluid and cellular exudate increase the bulk of the flap, which then may interfere with complete closure of the jaws and can be traumatized by contact with the opposing jaw, aggravating the inflammatory involvement.
- The resultant clinical picture is a red, swollen, suppurating lesion that is tender, with radiating pains to the ear, throat, and floor of the mouth.
- The patient is extremely uncomfortable because of a foul taste and an inability to close the jaws, in addition to the pain.
- Swelling of the cheek in the region of the angle of the jaw and lymphadenitis are common findings.
- Trismus may also be a presenting complaint.

□ The patient may also have systemic complications such as fever, leukocytosis, and malaise.

The treatment of acute pericoronitis consists of

1-gently flushing the area with warm water to remove debris and exudate and

2- swabbing with antiseptic after elevating the flap gently from the tooth with a scaler. The underlying debris is removed, and the area is flushed with warm water .

3-Antibiotics can be prescribed in severe cases.

4-If the gingival flap is swollen and fluctuant, an anteroposterior incision to establish drainage is made with a #15 blade.

After the acute symptoms have subsided, a determination is made as to whether the tooth is to be retained or extracted.

If it is decided to retain the tooth, the pericoronal flap is removed using periodontal knives or electrosurgery .

It is necessary to remove the tissue distal to the tooth, as well as the flap on the occlusal surface. Incising only the occlusal portion of the flap leaves a deep distal pocket, which invites recurrence of acute pericoronal involvement.

After the tissue is removed, a periodontal pack is applied.

The pack may be retained by bringing it forward along the facial and lingual surfaces into the interproximal space between the second and third molars.

The pack is removed after 1 week.