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# Conservative Management Of Necrotizing Gingival Disease- A Case Report.

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***Abstract:***
*Necrotizing gingivitis (NG) is a specific and distinctive entity of periodontal diseases that is characterized by acute onset, rapid necrosis of the tissues, painful and bleeding gingiva, and foul smell from the oral cavity. The clinical presentation with profuse bleeding gums accompanied by oral malodor, systemic symptoms such as lymphadenopathy and malaise could be noticed. Predisposing factors such as psychological stress, anxiety, nutritional deficiencies, dysfunctions, tobacco smoking, pre-existing gingivitis, trauma, poor oral hygiene, and HIV-infection plays a major role in the pathogenesis of NG. The treatment of NG is provided immediately to minimize patient discomfort and pain.. Maintenance phase allows to stabilization of the outcome of the treatment provided. The present case report describes the diagnostic approach and conservative management with an outcome of NG in a 32‐year‐old male patient.*

***Key Word:*** *necrotizing gingivitis, Diagnosis, treatment*

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## I. Introduction

Necrotizing gingivitis {NG} affecting the gingiva which is characterized by acute onset, rapid necrosis of the tissues, painful, bleeding gingiva and foul smell from oral cavity.[1] NG has been recognized for centuries. It has been given many names: trench mouth, trench gums, phagedenic gingivitis, acute ulcerative gingivitis, acute ulcerous gingivitis, Vincent's disease, Vincent's gingivitis, Vincent's infection, Vincent's stomatitis, Vincent's periodontitis, Vincent's angina, plaut- Vincent's stomatitis, stomatitis ulcerosa, stomatis ulcero-membranacea, fusospirochetal gingivitis, necrotizing gingivitis, and acute NUG.[2]

Initial documentation of NG was among military personnel during World War II .[3.] The various predisposing factors include psychological stress, anxiety, nutritional deficiencies, dysfunctions, tobacco smoking, pre-existing gingivitis, trauma, poor oral hygiene and HIV-infected patients.[1]

Untreated NUG may progress to Necrotizing ulcerative periodontitis (NUP) in which the disease may spread to adjoining soft tissue with intra-septal sequestration of alveolar bone, and further can result in noma or cancrum oris.

NG with appropriate measures can heal without clinical sequelae. Resolution of signs and symptoms can be achieved by medical treatment, mechanical debridement or combination of both.

Cuurent case report details with, the clinical diagnosis noninvasive therapeutic approach which resulted in successful resolution of necrotizing gingivitis.

## II. Case Report

A 32-year old male patient reported to the department of periodontology with the chief complaint of bleeding gums and foul breath. History revealed bleeding from gums while brushing with tenderness and difficulty in mastication. Medical history revealed episodes of fever and malaise, for which he was hospitalized, treated and reffered to the department after recovery for management of the bleeding gums. Personal history revealed stress due to excessive work pressure and no deleterious habits. The frequency of brushing was once a day using the horizontal scrub technique. On extraoral examination, palpable lymph nodes were detected in submental region. The patient was otherwise systemically healthy and on intraoral examination, oral hygiene was found to be poor. Gingival examination showed reddish pink, soft and edematous, exaggerated scalloped gingival architecture. There was profuse bleeding on probing with pseudomembranous slough present w.r.t. upper and lower anterior region. The intra-oral examination also showed grade III gingival recession (millers)

and grade 1 mobility was seen wrt 31, 32, 33, 41, 42, 43. A provisional diagnosis of necrotizing gingivitis with pre-existing localized periodontitis was made.

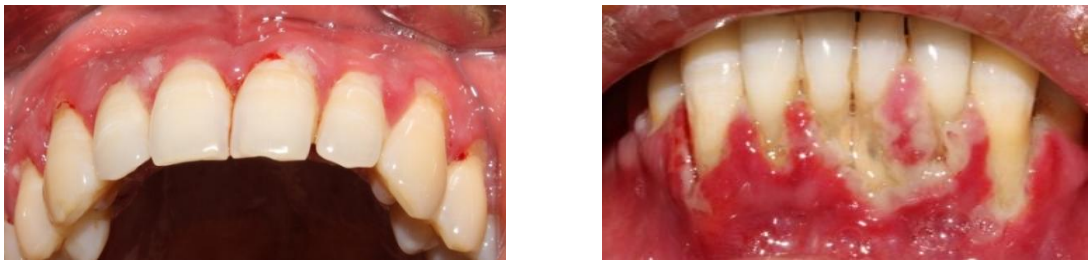

**Fig. 1 maxillary(left) and mandibular(right) anterior region with pseudomembranous slough during 1st visit**

## III. Treatment

The pseudomembranous slough was removed using a sterile cotton swab containing 3% hydrogen peroxide. The patient was prescribed with oral antibiotic ( Amoxicillin 500mg and metronidazole 400 mg every 8 h for 7 days) and oral mouth rinse (3% hydrogen peroxide with warm water every 2 hrs). Patient was advised to use ultrasoft brush he was also advised adequate rest and to avoid excessive physical activity. Oral prophylaxis was not performed during the first visit. After 1 week, patient reported back with reduced pain and clinical examination revealed no pseudomembranous slough. Supragingival scaling was performed using hand and ultrasonic scalers, oral hygiene instructions were reinforced and 0.2% CHX was prescribed.. On the 15th day reduction in the inflammation of the gingival tissue was observed following which scaling and root planing was performed using ultrasonic scalers and currettes. Patient was recalled for further followup.

**Fig. 2 maxillary(left) and mandibular(right) anterior region 1week after removal of pseudomemberenous slough**

**(a)**

**(b)**

**(c)**

**Fig. 3 (a) and (b) maxillary; mandibular labial view ;(c) lingual view after 15 days of oral prophylaxis**

## IV. Outcome And Follow-Up

Patient-reported back after 6 months, clinical evaluation revealed no signs of recurrence of infection, overall oral hygiene was satisfactory, gingival recession beyond mucogingival junction with no zone of attached gingiva and patient had difficulty in maintaining the oral hygiene so further scaling and root planing was carried out and gingival augmentation procedure was planned. Oral hygiene instructions were reinforced and interdental brush was prescribed.

**(a)**

**(b)**

**(c)**

**Fig. 4 (a) and (b) maxillaryand mandibular buccal view ; (c) mandibular lingual view showing 6 months follow up without recurrence before oral prophylaxis**

**(a)**

**(b)**

**(c)**

**Fig. 5 (a) and (b) maxillary and mandibular buccal view ; (c) lingual view showing 6 months follow up after oral prophylaxis**

## V. Discussion

NG was classified in several classification systems with different names initially, it was published by Black in 1886 as a painful form of gingivitis.[4] In 1885 Jean Hyacinthe Vincent an army physician did an extensive study on gangrene, its clinical features, and bacteriology. During this period he observed the occurrence of fusospirillary infections of the throat among soldiers of active warfare. In 1892 he recognized the clinical entity of an ulceromembranous angina which came to bear his name as Vincent Angina. In 1942, Orban has included vincents angina under the inflammatory entity. [5] Until 1986 NUG was not classified as a specific entity then AAP has included it as Necrotizing ulcerative gingivo-periodontitis. Since 1993 NUG was included in all classification systems. World Health Organization included NUG in linear gingival erythema in the group of periodontal disease- related pathologies in HIV- positive patients. After that, in the 1999 American Academy

of Periodontics classification system, NUG was classified as necrotizing periodontal disease, along with NUP.[6] Recent classification system of 2017 world workshop classified necrotizing periodontal diseases as necrotizing gingivitis, necrotizing periodontitis, and necrotizing stomatitis.[7]

Necrotizing ulcerative gingivitis term is used when only the gingiva is affected, the term 'necrotizing ulcerative periodontitis' is used when the attachments of the teeth are disrupted. ' Necrotizing ulcerative stomatitis' is used when the necrosis involving buccal and labial mucosa and exposing the alveolar bone. When the necrosis is perforating skin of cheek the term 'cancrum oris,' or'noma', is used.

Among general population the prevalence of NG was 0.51 to 3.3%, where as in military personnel it ranged from 3.96–20.6% by the end of the World War II. In Chilean students between 12 and 21 years, it was from 0.9 to 6.7%.[8]

The diagnosis in the present case was made based on the presence of primary clinical features: "punched out" interproximal gingiva, pseudomembranous slough, linear erythema. Secondary clinical features are intense pain, oral halitosis, gingival bleeding with little or no provocation. Lymphadenopathy, fever, and malaise are the systemic symptoms. Lymphadenopathy is an infrequent finding. Its presence is probably related to the severity of the disease since it is usually observed in advanced cases. In the present case scenario the subject had primary, secondary, and systemic clinical symptoms.

The down regulation of the host immune response predisposes to NG by facilitating bacterial pathogenicity. Psychological stress and insufficient sleep, poor diet, alcohol and tobacco consumption, inadequate oral hygiene, pre-existing gingivitis, and systemic condition especially HIV infection are factors that aggravate the disease condition. In the present case scenario, the subject showed two risk factors that are stress due to excessive work pressure, inadequate oral hygine maintanence along with preexisting chronic periodontitis.

There are varied conditions such as primary herpetic gingivostomatitis, hand foot mouth disease mimicking the features of NG but the prevalence of the above conditions is mainly seen in children. In Varicella zoster, secondary syphilis, drug allergies the skin lesions are also seen but in the present case, it was not evident. Aphthous stomatitis, chronic toothbrush trauma may also lead to ulceration might be a differential diagnosis in this particular scenario.

Treatment of NUG involves careful removal of pseudomembranous slough by 3%hydrogen peroxide, which is critical in the management of NG. After the acute phase subside, the preexisting periodontitis must be treated using surgical therapy. Oral hygiene instructions and motivation must be reinforced. Treatment of local factors by correction of overhanging restorations and wide embrasures must be performed. Systemic predisposing factors including smoking, inadequate sleep, stress. These should be managed adequately by smoking cessation centre, medical and psychiatric counseling .

Finally, if proper maintenance is not carried out, relapses are likely to occur. Adequate oral hygiene maintanence is required to ensure optimal gingival health.[1, 6, 9, 10] In the present case there was no recurrence and overall oral hygiene was maintained satisfactorily.

## VI. Conclusion

NG is an acute periodontal disease. The diagnosis is based on features such as papillary necrosis, bleeding, pain and the identification of risk factors that alter the host response. Treatment should be organized and systematic. By treatment of acute phase which is provided immediately, followed by controlling and stabilizing other pre disposing factors, the results may be more satisfactory and sustained outcome.

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