Case report

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Necrotizing Gingivitis - Clinical Case

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Abstract

According to the American Academy of Periodontology, necrotizing gingivitis is one of the acute periodontal diseases. A clinical case is presented, in which an adequate diagnosis of the local and general status has been carried out consistently, as well as treatment of the acute phase of the disease and treatment of preceding periodontal diseases; gingival morphology has been assessed and recommendations have been given on the maintenance phase of the periodontal therapy. Necrotizing gingivitis is a condition requiring proper diagnosis, urgent and adequate treatment, through which the development of local and general complications can be prevented.

Keywords: *Necrotizing Gingivitis, Diagnosis, Treatment*

Introduction

According to the American Academy of Periodontology, necrotizing gingivitis is one of the acute periodontal diseases (1). When NG progresses and includes loss of attachment, it is defined as necrotizing periodontitis (NP), and the progression of necrosis to deeper tissues beyond the mucogingival line is likely to lead to the more severe form – necrotizing stomatitis (NS) (2, 3).

According to the Classification of Periodontal and Periimplant Diseases and Conditions, necrotizing gingivitis (NG) is a condition characterized by necrosis and ulceration of the interdental papillae, bleeding

and gingival pain. Secondary symptoms may include halitosis, pseudomembrane formation, regional lymphadenopathy, fever and sialorrhea (3).

Necrotizing periodontal diseases are considered to be one of the most severe inflammatory diseases associated with oral biofilm. Removal and control of bacterial plaque and local predisposing factors is of utmost importance for their treatment (3). Patients with NG are frequently predisposed to recurrence of the disease, mainly due to difficulties in controlling predisposing factors, as well as difficulties in controlling supragingival bacterial plaque and the presence of gingival craters that may be a consequence of previous NG (3).

Necrotic gingivitis can be mild or severe. In mild form, the lesion is located at the papilla tip and with increasing severity spreads to the papilla base and gingival margin (4). In mild gingivitis treatment healing without scarring may occur, while in severe gingivitis treatment interdental gingival craters may remain.

According to the current classification, necrotic periodontal diseases are divided into two groups, depending on the general condition of the organism in which they develop (2). In some cases, they occur on the background of severe systemic disease or condition, in chronic and severely compromised patients and are associated with possible progression to more severe forms and even to life-threatening conditions. In cases when the disease develops in temporarily and / or moderately compromised patients, necrotizing disease is not a life-threatening condition.

Clinical Case

Establishing Diagnosis

A 24-year-old patient is presented, a heavy smoker (20 cigarettes per day), reporting oral drug use. He has complaints of severe gingival pain and inability to eat. The submandibular lymph nodes are enlarged. The papillae in the area of the frontal part of the mandible and around the destroyed first molar on the left of the mandible have a typical 'punched-out' appearance and are covered with pseudomembranous deposit. Generalized marginal erythema of the gingiva and oedema are found on clinical examination. In contact with a probe in the area of the gingiva in the lower frontal area bleeding is revealed and the patient reports pain. The prevalence of bacterial plaque in the dentition (Full mouth plaque score – FMPS) is 100% and the prevalence of gingival bleeding (Full mouth bleeding scores – FMBS) is 86%. Clinical examinations are sufficient to diagnose necrotizing gingivitis – localized, with moderate severity (Fig. 1).

Fig. 1 Necrotizing gingivitis in the frontal area of the mandible.

Treatment of the acute phase of the disease

Since the patient may not know their HIV status, he was asked to take a quick HIV-infection test in a laboratory. The test showed a negative result. Treatment of the acute phase aims to stop the development

of the pathological process and tissue destruction, affect the general condition of the patient, reduce pain and discomfort, so that nutrition and conducting oral hygiene are possible.
Plaque and calculus removal was done in whole mouth with ultrasonic device, so that less soft tissue trauma in comparison to manual tools is achieved.
On the patient's first visit, a systemic antibacterial agent was administered orally (Ospamox 1g / twice a day, for 7 days), indicated by the affected general condition and moderate severity of localized necrotizing gingivitis.
Professional supragingival and subgingival plaque and calculus removal was performed in three visits taking place every other day. During this period the application of oral hygiene procedures by the patient was limited due to the possibility that they could lead to additional trauma, impair healing and cause pain.
During this period the patient was recommended to use chlorhexidine mouthwash (0.12%) for rinsing twice a day, as well as 3% hydrogen peroxide diluted 1:1 in warm water.
After the elimination of acute inflammation, the patient was given instructions for the application of personal oral hygiene and recommendations for stopping or reducing smoking and cessation of drug use.

Evaluation of results after treatment of the acute condition and treatment of previous periodontal disease

The assessment of plaque and gingival bleeding prevalence made at this stage showed FMPS = 70% (dental surfaces without plaque) and FMBS = 30%. After a detailed periodontal examination and orthopantomography deep periodontal pockets were not detected (probing depth ≤ 4 mm), but places with loss of attachment (CAL) were found: on tooth 15 – distally CAL = 4 mm; on tooth 17 – medially CAL = 4 mm; on tooth 47 – distally CAL = 2 mm, as well as radiographically expressed bone loss in these sites (Fig. 2). We associate these losses of periodontal tissues with the presence of local factors – extraction of adjacent tooth 16 and a deep carious defect of tooth 47, but not with the diagnosis of periodontitis. Clinical examination revealed a deep carious defect on tooth 25. On segmental radiography, tooth 36 was found to have no perspective treatment due to the destruction of hard dental tissues, involving the pulp chamber floor and bone loss in furcation region (Fig. 3). In the bone, in the area of teeth 36 and 37, a weak shadow is observed radiographically reaching the mandibular canal caudally. It has sharp, in places arcuate outlines, with no relation to the roots of adjacent teeth.

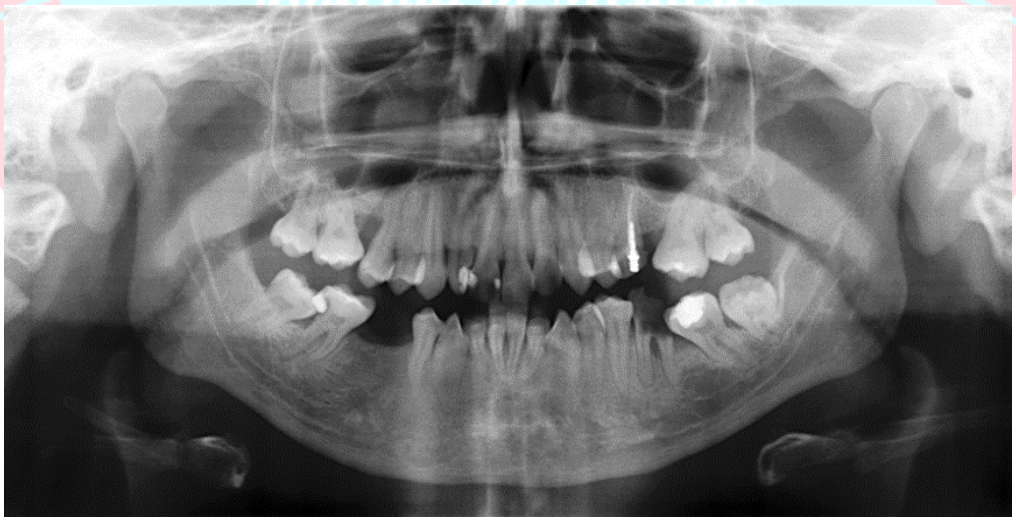

Fig. 2. Orthopantomography.

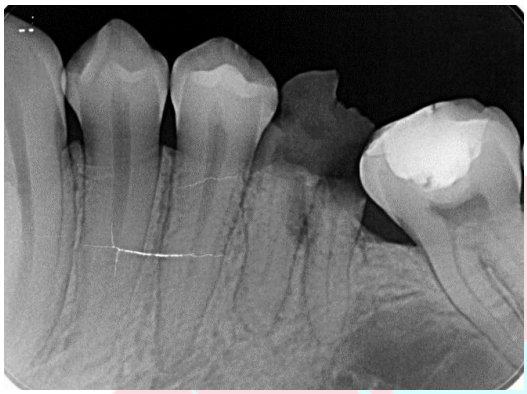

Fig. 3. Segmental radiography.

The treatment of plaque-induced gingival disease continued controlling plaque removal by the patient in order to achieve gingival health (FMBS < 10% and probing depth ≤ 4 mm).

The patient was recommended extraction of tooth 36 and restoration of tooth 25 and tooth 47, as they are local plaque-retentive factors and increase the risk of recurrence of gingival disease. A consultation with a maxillofacial surgeon was recommended in relation with the bone finding. Prosthetic treatment of defects in the dentition was recommended, as well.

Assessment of the gingival morphology after reaching gingival health

One month after the treatment FMPS = 70%, FMBS = 8% and probing depth < 4 mm were reported. The detailed periodontal examination did not detect severe morphological changes in the gingiva, so no gingival corrective surgical procedures were proposed (Fig. 4).

Fig 4. Gingival health condition 1 month after active periodontal therapy.

Recommendations on the maintenance phase of treatment.

Due to the risk of recurrence, the visits in this phase of treatment are recommended to be done every 3 months. The aim of such visits is professional control of oral hygiene and control of possible predisposing for gingival disease factors.

Discussion

The diagnosis necrotizing gingivitis was established on the basis of the characteristic clinical signs – necrosis and ulcers in the area of papillae with typical look of “punched-out”, gingival bleeding that appears in contact with a periodontal probe and gingival pain (3).

Plenty of oral diseases can present single or multiple ulcers. They can be of different genesis – infectious, traumatic, autoimmune, malignant, etc. (5, 2). In the case considered, the clinical picture is typical of necrotizing gingivitis, but differentiation should be made in relation to the subgroups regarding the patient’s general condition (2). If the patient is chronically and severely compromised, his condition necessitates clarifying before the local treatment, and the treatment should be done urgently and in collaboration with relevant medical specialist. In the case described, the patient is moderately compromised by the factors of tobacco smoking and possible oral use of narcotic substances, due to which bacterial plaque led to severe

inflammation and necrosis. The treatment of the necrotizing gingival disease is urgent in order to limit its local progression and rapid loss of periodontal tissues.
After the acute symptoms subside, a complete periodontal examination is recommended to be performed and the previous periodontal disease to be treated. It is important to eliminate or control local and common predisposing factors (3). Control of bacterial plaque is associated with the implementation of daily oral hygiene procedures, with the extraction of the non-perspective for treatment tooth, and restoration of the tooth with a defect. The corrective phase of treatment is performed in case of residual gingival craters, which are a local plaque-retentive factor, and surgical correction is most frequently performed by gingivectomy and / or gingivoplasty (3). The case described does not necessitate such a procedure.
Smoking is a major risk factor for necrotizing diseases, which is explained by the mechanisms of polymorphonuclear leukocyte and lymphocyte functions suppression and vasoconstriction of gingival blood vessels (3). Eliminating or reducing such a risk factor is particularly important in the patient described. Control of bacterial plaque as well as control of predisposing factors in the maintenance phase of treatment are important to prevent recurrence (6).

Conclusion

Necrotizing gingivitis is an acute condition requiring proper diagnosis, urgent and adequate treatment, through which the formation of gingival craters and development of local and general complications can be prevented.

References

1. American Academy of Periodontology. Parameter on acute periodontal diseases. J Periodontol. 2000; 71:863–866.
2. Herrera D, et al. Acute periodontal lesions (periodontal abscesses and necrotizing periodontal diseases) and endo-periodontal lesions. J Periodontol. 2018 Jun;89 Suppl 1:S85-S102. doi: 10.1002/JPER.16-0642. PMID: 29926942.
3. Herrera D, Alonso B, de Arriba L, Santa Cruz I, Serrano C, Sanz M. Acute periodontal lesions. Periodontol 2000. 2014 Jun;65(1):149-77. doi: 10.1111/prd.12022. PMID: 24738591.
4. Rateitschak, Klaus H., Rateitschak, Edith M., Wolf, Herbert F., Hassell, T. M.Color Atlas of Periodontology. Stuttgart; New York: Thieme, 1985, p. 321.
5. Krasteva A., A Kisselova, V. Panov, B. Girova, A Krasteva, A Bobeva. Oral lesions. 2011, Sofia, Ivan Sapundjiev – EOOD, 296 p.
6. Malek R, et al. Necrotizing Ulcerative Gingivitis. Contemp Clin Dent. 2017 Jul-Sep;8(3):496-500.

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