**Necrotizing Ulcerative Periodontitis**

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Oral Pathology 2021

Monday Section

**Overview:**

Necrotizing ulcerative periodontitis is known to be the aggressive sibling of necrotizing ulcerative gingivitis. They have similar etiologies and clinical manifestations which led to the further combination of the two to be just known as necrotizing periodontal disease. The line is drawn between the two right when alveolar bone is lost, which is an indicator of periodontal disease rather than gingivitis. I will be discussing the periodontal stage of the necrotizing disease.

**Etiology:**

Necrotizing ulcerative periodontitis is a sub-term alongside necrotizing ulcerative gingivitis for necrotizing periodontal disease. The condition tends to present as a manifestation of any underlying systemic conditions like HIV and diabetes mellitus, meaning that they are immunosuppressed. The immunosuppression results in the decrease of polymorphonuclear leukocytes, antibody response, and lymphocyte mitogenesis, which increases the susceptibility to ulcerative periodontitis. Other risk factors include physiological stress, smoking, poor oral hygiene, malnutrition, and any preexisting oral disease like gingivitis.

**Clinical Presentation**

Necrotizing ulcerative periodontitis presents excruciating pain, patients tend to skip meals, have home oral hygiene, and sometimes sleep from this pain. As per objective findings, oral hygiene is poor with heavy plaque and calculus deposit buildup, spontaneous bleeding, and suppuration. The gingiva appears with a thin pseudomembranous along the attached gingiva. Necrosis and ulceration are also seen. This influences the interproximal papilla, making them look like they are punched out and crated leading to root exposure. Attachment loss, periodontal ligament destruction, and alveolar bone loss are the main objective findings on determining if the disease is either necrotizing ulcerative gingivitis or periodontitis.

**Demographic**

Geographically relevant to developing countries. The young children in these developing countries suffer from malnutrition, which would affect the immune response to disease due to the lack of proper nourishment of vitamins and protein intake needed. It isn’t a concrete relationship to causing necrotizing ulcerative periodontitis but the predisposing risk factor like smoking and having poor oral hygiene in these lower socioeconomic countries would play into the disease. Sex/age/race is not prominently relevant to the disease.

**Biopsy / Histology / Radiographs**
Necrotizing ulcerative periodontitis is clinically diagnosed. There is no need to biopsy the tissue since it will result in just another non-specific inflammation. Clinical findings like tissue necrosis, spontaneous bleeding, and pain. Halitosis and the presence of pseudomembrane are also seen in some cases.

Histologically, there is a presence of bacteria that can coexist in chronic periodontitis; *Porphyromonas gingivalis, Prevotella intermedia, Fusobacterium nucleatum,* and *Candida albicans* can be seen when biopsied.

Radiographs are used to view the extent of how much bone has been lost, which further lets us understand the extent of the disease and its severity.

**Differential Diagnosis**

* Benign Mucosal Membrane Pemphigoid
* Gingival squamous cell carcinoma
* Primary herpetic gingivostomatitis
* Recurrent aphthous ulcers.
* Acute leukemia
* Invasive fungal disease.

**Treatment**

Treatment includes an in-office procedure of debridement of the lesion to remove any necrotic tissue, in addition to scaling on the needed areas. For the removal of the pseudomembrane, 0.12% chlorhexidine is used. When scaling or any debridement procedure is being done it is advised to utilize an analgesic before the procedure to reduce the patient’s pain once going forward with the procedure. The patient can partake in the use of amoxicillin or metronidazole as an antibiotic rinse that can be prescribed for a week of use, along with a soft-bristle toothbrush with gentle rolling strokes. Once the inflammation subsides, the use of a sulcular motion can be done for oral irrigation. The use of systemic antibiotics in immunosuppressed patients can present with candidiasis, which is when an antifungal like nystatin could be prescribed and advised to be used. A recommended 3-month recall is ideal.

**Prognosis**

Recurrence is uncommon. It is recommended to have regular dental cleanings to keep track of any changes and signs of future disease. Since recurrence is uncommon, the main goal is to focus on managing risk factors that contribute to the disease. Smoking cessation, nutrition, reducing stress, continuing the habit of maintaining and improving oral hygiene health, and therapy for any underlying condition. The focus is to reduce the susceptibility of disease in these immunosuppressed patients, further improving their prognosis.

**Professional Relevance**

Necrotizing ulcerative periodontitis is relevant for dental hygienists to acknowledge because it isn’t seen much but it is important to note the complications and severity that come from this disease. We always focus on how we can surround our patient’s treatment plan based on the clinical findings. Based on the findings we can narrow down what the findings indicate. We might see it as periodontal disease, but subjective findings would tell us otherwise. Dental cleaning should not be painful, for patients with NUP who feel a lot of pain from the gingival inflammation, we should focus on utilizing proper pain management for these patients. As well as, how we should be treating them and how we should be educating them about managing their oral health. To conclude, correct diagnosis, effective treatment, monitoring, and patient education—dental and health-related in maintaining disease condition health is our main focus as health care providers.

**Citations**

G, Pauly, et al. “The Debatable Dilemma- a Case of Anaesthetic Dental Trauma in a Syndromic Patient: Unavoidable or Negligence?” Austin Journal of Dentistry, 2021, https://austinpublishinggroup.com/dentistry/fulltext/jd-v3-id1048.php.

HIV and It's Periodontal Sequele: Review. https://www.oraljournal.com/pdf/2021/vol7issue1/PartC/7-1-15-120.pdf.

Kwon, Eun-Young, et al. “Effective Management of Acute Necrotizing Ulcerative Gingivitis with Proper Diagnosis and Immediate Treatment.” Journal of Korean Dental Science, vol. 9, no. 2, 2016, pp. 81–89., https://doi.org/10.5856/jkds.2016.9.2.81.

Silvestre-Rangil, J., et al. “Necrotizing Periodontitis in the Context of Takayasu S Disease: Report of a Case.” Journal of Clinical and Experimental Dentistry, 2011, https://doi.org/10.4317/jced.3.e408.

Storrer, Carmen Lucia, et al. “Benign Mucosal Membrane Pemphigoid as a Differential Diagnosis of Necrotizing Periodontal Disease.” Case Reports in Dentistry, vol. 2020, 2020, pp. 1–4., https://doi.org/10.1155/2020/8885158.

Umeizudike, Kehinde Adesola, et al. “Severe Presentation of Necrotizing Ulcerative Periodontitis in a Nigerian HIV-Positive Patient: A Case Report.” Medical Principles and Practice, vol. 20, no. 4, 2011, pp. 374–376., https://doi.org/10.1159/000324872.