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DIFFERENTIAL DIAGNOSIS OF TUMOR-LIKE PERIODONTAL DISEASES

Abstract: Periodontitis presents a widespread and evolving challenge, making it difficult to establish clear diagnostic and treatment protocols. The complexity arises from the diverse etiologies, varying degrees of severity, nature of complications, individual health conditions, and genetic predispositions associated with periodontal disease. Comprehensive histological examination is crucial for accurate diagnosis and the development of effective treatment strategies for periodontal diseases.

Keywords: parodontal tissues, examination of a parodontal diseases, histological research.

Introduction. The diagnosis of periodontal diseases currently relies on a set of basic clinical examinations conducted in an outpatient setting. These assessments encompass evaluation of gingival health, measurement of periodontal ligament attachment loss, detection of supra- and subgingival deposits, and radiographic analysis of alveolar bone resorption. While patient history, clinical examination, and periodontal indices contribute to the diagnostic process, the lack of standardization among various periodontal indices has led to divergent opinions within the dental community regarding their utility. Consequently, many practitioners remain hesitant to fully embrace these indices in routine practice. Furthermore, simply assessing oral hygiene status and the extent of existing periodontal damage provides limited diagnostic value.

The purpose The primary goal of periodontal diagnosis is not simply to identify disease presence but to pinpoint the specific disease responsible for observable changes in periodontal tissues. A crucial aspect of this process involves distinguishing between diagnostic signs, which often share similar clinical presentations and symptoms. When focusing solely on inflammatory and degenerative changes within periodontal tissues, conventional examination methods are generally adequate for differentiating these conditions. However, when dealing with tumors and tumor-like diseases affecting the oral cavity and periodontium, traditional diagnostic approaches prove insufficient.

Furthermore, the constraints of outpatient settings in contemporary dental clinics often preclude the use of supplementary laboratory investigations, including histological analysis of biopsies obtained through surgical periodontal treatments.

The purpose of our work is to clearly demonstrate the need for a more complete and in-depth examination of a periodontal patient for diagnostic stage, including for identifying tumors and tumor-like periodontal diseases. This work analyzes the principles differential diagnosis of inflammatory dystrophic periodontal diseases. As is known, the main differential diagnostic. A sign for gingivitis, in contrast to other periodontal diseases, should be considered the absence of changes in the bone tissue of the alveoli, which is an integral part of the periodontal complex.

The severity of gingivitis is determined by the totality of general changes in the body identified on stage of history taking and the degree of gum involvement in pathological process. Differential diagnostics of chronic, catarrhal and hypertrophic (edematous form) gingivitis is associated with a certain commonality of the clinical picture: patients complain of bleeding gums, changes in the appearance of the gingival

margin. Usually, the proliferative process characteristic of hypertrophic gingivitis is preceded by catarrhal inflammation, therefore, on one jaw, one can observe the phenomena of catarrhal gingivitis, and on the other - hypertrophic. Distinctive signs come from the presence in the examined patients of various general somatic diseases that cause gingivitis: in catarrhal gingivitis, most often cardiovascular, gastrointestinal, infectious diseases, blood diseases (lymphocytic and myeloleukemia). In hypertrophic gingivitis — endocrine pathology, intake of certain medications, as well as blood diseases (leukemic reticulosis). Accordingly, the clinical picture will be different: swelling and hyperemia of the interdental papillae and gingival margin in catarrhal gingivitis; enlargement of the gingival papillae, pronounced deformation of the gingival margin, cyanosis, formation of false periodontal pockets — in hypertrophic gingivitis. Differential diagnostics of ulcerative necrotic gingivitis from generalized periodontitis in the acute stage is associated with the commonality of some symptoms: in both cases, the general condition of the patient suffers, signs of intoxication appear, and pain syndrome is pronounced. With these two pathologies, swelling and hyperemia of the gingival margin, lost scalloping of the gum, painful palpation, poor oral hygiene (large amounts of soft plaque and hard dental deposits), halitosis are determined. Sharp bleeding with trauma to the gingival margin, suppuration upon palpation Ulcerative necrotic gingivitis is characterized by necrotic plaque on the gums and flattened gingival papillae. Plaque removal is extremely painful and results in significant bleeding.

Acute periodontitis presents with pus-filled pockets, potential abscesses, smoothing of the gum line, swelling, pulsation upon touch, and possible fistula formation. X-rays reveal mixed bone resorption, with vertical resorption and cavity formation in areas of active inflammation. Bone pocket depth corresponds to the severity of periodontitis. Notably, ulcerative necrotic gingivitis does not show bone structure changes on X-ray. Differentiating chronic (catarrhal and hypertrophic) gingivitis from mild chronic generalized periodontitis involves identifying specific clinical features. Both conditions share symptoms like bleeding gums, swollen and red gums, soft and hard plaque buildup, and abnormal periodontal indices. The Schiller-Pisarev test is positive in both cases. However, periodontitis exhibits periodontal pockets up to 4 mm deep and bone resorption of the interalveolar septum by up to one-third its length. Functional examination methods like rheoparodontography and polarography are not helpful for differential diagnosis. Localized hypertrophic gingivitis and epulis share characteristics such as localized gum overgrowth around 1-2 teeth. However, epulis presents a distinct leaf or mushroom shape with a reddish-brown or bluish hue. Bone changes, including thinning at the base of the epulis, are also observed. Epulis often displays periodontal involvement near the causative tooth.

Periodontitis, as an independent disease entity within periodontal diseases, involves inflammatory and destructive processes affecting all periodontal tissues.

Differentiating between acute and exacerbated chronic periodontitis relies on identifying shared symptoms such as general malaise, tooth pain (especially during chewing or jaw clenching), redness and swelling of the alveolar process lining, and often an abscess. Key distinguishing factors include periodic appearance of single abscesses in different locations with a 5-7 day interval. These abscesses are located at the attached gum, unconnected to periodontal pockets, frequently draining through fistulas, and X-rays reveal predominant vertical bone pocket resorption in the alveolar processes. The diagnosis of chronic periodontitis can be complex due to overlapping symptoms with other conditions.

Distinguishing Chronic Periodontitis from Other Conditions:

Periodontosis Complicated by Inflammation: Both conditions share signs like gum redness and swelling, periodontal pockets, plaque and tartar buildup, and tooth mobility. However, in periodontosis complicated by inflammation, receding gums without pockets and wedge-shaped bone defects are observed radiographically, alternating areas of increased and decreased bone density.

Desmodontosis: Similar to chronic localized periodontitis, this condition presents with tooth displacement, gaps between teeth, loosening, and periodontal pockets, as well as vertical bone loss. However, desmodontosis lacks a clear local cause, involves symmetrical gum inflammation, primarily affecting the front incisors and molars. Eosinophilic Granuloma: This condition shares symptoms of bleeding gums, mobility of premolars and molars, and periodontal pockets with chronic generalized periodontitis. However, eosinophilic granuloma lacks a local cause, presents without pus drainage from the pockets, progresses rapidly over 1.5-2 months, and shows characteristic oval or round bone resorption patterns on X-rays near tooth roots, jaw angle, or ascending branch.

Severity Assessment: The severity of periodontitis is assessed based on the extent of alveolar bone loss and the degree of tooth mobility.

Periodontosis vs. Involutional Changes:

Both conditions involve receding gums, tooth mobility, and bone loss. However, in involutional processes, which occur with aging, gum recession and tooth mobility are uneven, varying in severity. Additionally, tooth wear is present, and there's no evidence of widespread or localized bone thinning (osteoporosis) in the jawbone on X-rays. This paraphrased version aims to clarify the diagnostic challenges posed by overlapping symptoms while highlighting key distinguishing features for each condition. In diagnosing periodontal diseases, it is crucial to consider not only oral health but also systemic factors such as blood disorders and infectious diseases like syphilis and tuberculosis. While advancements in diagnostic tools, particularly functional methods, have greatly enhanced our understanding of periodontal pathology, these methods often lack the specificity to differentiate between various forms of the disease.

Quantitative indices commonly used in periodontology provide limited insight into the complex interplay of factors contributing to periodontal disease, including oral hygiene, gum inflammation, vascular health, and bone changes. These indices primarily serve administrative purposes related to insurance claims.

Furthermore, diagnosing tumor-like conditions within periodontal tissues presents a significant challenge due to the necessity of histological confirmation. This requires the collection and analysis of tissue samples by specialized laboratories, posing logistical difficulties for individual dental practices.

Conclusion. The microscopic analysis of tissue samples plays a crucial role in the comprehensive evaluation of patients with periodontal disease. This procedure is essential for determining the most appropriate and effective treatment strategy for these oral health conditions.

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