

LUNG DISEASE: DIRECTLY PROPORTIONAL RELATIONSHIP TO ORAL HYGIENE CONDITIONS

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Abstract: Studies have indicated that there is a relationship between oral diseases and systemic manifestations arising from the oral microbiota. Nowadays, research indicates that PD is a possible risk factor for cardiovascular diseases, such as atherosclerosis, myocardial infarction, stroke, diabetes, premature birth and respiratory pathologies, such as chronic obstructive pulmonary disease (COPD). This is because microorganisms present in the oral cavity can migrate to the lungs through the bloodstream and cause infections. These respiratory changes result from the aspiration of oropharyngeal microflora into the smaller respiratory tract. The objective of this work was to elucidate the importance of frequent oral hygiene, which can avoid complications of the major and minor respiratory tracts.

Keywords: Oral health; lung diseases; oral hygiene;

INTRODUCTION

Studies have indicated that there is a relationship between oral diseases and systemic manifestations arising from the oral microbiota. It is believed that diseases of the oral cavity act as disseminators of pathogenic microorganisms with systemic repercussions. Therefore, immunosuppressed patients, such as those admitted to Intensive Care Units (ICU), are more vulnerable to these infections.

Not only do patients admitted to ICUs suffer from certain pathologies, but several lung diseases have an exacerbated effect when faced with periodontal pathogens. Periodontal disease (PD) is an imbalance between the aggression and defense mechanisms of the supporting and protective tissues of the dental element, the main determinant of which is dental biofilm. Periodontitis is associated with dozens of oral cavity pathogens. Among these, the most discussed and studied are: *Porphyromonas gengivalis*, *Actinobacillus*, *Actinomycetemcomitans*, *Tannerella forsythia*

(Moghadam et al, 2017).

Nowadays, research indicates that PD is a possible risk factor for cardiovascular diseases, such as atherosclerosis, myocardial infarction, stroke, diabetes, premature birth and respiratory pathologies, such as chronic obstructive pulmonary disease (COPD). This is because microorganisms present in the oral cavity can migrate to the lungs through the bloodstream and cause infections (Öztekin et al., 2014). These respiratory changes result from the aspiration of oropharyngeal microflora into the smaller respiratory tract. We also know that dental biofilm is a breeding ground for respiratory pathogens. This chronic inflammation can contribute to the development of respiratory inflammation, through mediators, which are released in saliva and reach the respiratory epithelium (Peter et al., 2013).

OBJECTIVE

The objective of this work was to elucidate the importance of frequent oral hygiene, which can avoid complications of the major and minor respiratory tracts, causing the worsening of the patient's pathological systemic conditions. In addition, it is necessary to observe the evolution and/or regression of such pathologies in relation to oral care.

MATERIALS AND METHODS

The present study was based on research carried out on articles from the Bireme, VHL platforms and electronic websites of honorable names, categorizing the research, this way, as a literature review.

The classification of reports was structured based on the incidence of cases, relevance to the dentist's knowledge and current dating. We chose articles with a wealth of information consistent with the objective of the review.

Based on the reports, the article was structured in such a way that the ideas, added

together, could elucidate the importance of oral hygiene, supporting the evolution of diseases, from the simplest to the most serious.

DISCUSSION

Currently, based on data, an association is suggested between periodontitis and chronic obstructive pulmonary disease (COPD), pneumonia, asthma and other upper respiratory diseases, which are closely associated with poor oral hygiene and immunological deficit (Mogadhan et al., 2017). COPD is defined as a progressive chronic disease, which causes, through obstruction, a decrease in airflow due to a chronic inflammatory response within the airways. The disease is an important cause of mortality and morbidities (Macedo et al., 2010).

The number of dental elements in patients with COPD is lower than in patients who do not have this pathology. The constant loss of attachment is also greater in these patients with COPD, thus proving the relationship between lung disease and periodontitis (Öztekin, 2014). Chronic obstructive pulmonary disease (COPD) becomes an opportunity for fungal infection, as in its treatment, we can observe steroids for long periods of use. These medications act to reduce salivary glands, favoring an environment for *Candida albicans* infections, for example. (Colgate, 2018).

Other authors report several other respiratory pathologies associated with poor oral hygiene, such as Septic Pulmonary Embolism (SPE), a serious disorder where thrombi carrying microorganisms in a fibrin matrix are transported through the venous system. These implantations occurs in the pulmonary vascular system, causing embolism, that is, obstruction of the channel. (Endo et al., 2015).

Some respiratory tract diseases can cause and exacerbate oral lesions, as the multitude

of drugs related to treatment can cause dryness and even some lesions in the oral mucosa. Some pathologies, such as asthma, include in their prognosis and treatment, some medications related to irritability of the oral mucosa, metallic taste coming from the lingual papillae, in addition to nausea. This last symptom can make daily oral hygiene difficult for the patient and lead to the onset of gingival pathologies, such as gingivitis and, later, periodontitis. Furthermore, corticosteroids indicated for the treatment of asthma can cause xerostomia and facilitate bacterial colonization. The disorganization of the oral flora can cause opportunistic fungal diseases, which are so recurrent and symptomatic. (Colgate, 2018).

Another respiratory condition is sinusitis, inflammation of the nasal sinuses that can cause a lot of pain and discomfort. This discomfort can generate referred pain, emitting sensations across the face, which can exacerbate pulsatile dental pain. Mouth breathing, caused by difficulty in nasal breathing, and the antihistamines used in treatment can cause dryness of the oral mucosa and predispose the patient to the development of caries disease due to hyposalivation. (Colgate, 2018).

In a study by Manger, et al, the presence of caries was associated with the development of pneumonia in a patient of moderate quality. Evidence to support this was mixed with two prospective cohort studies suggesting that higher plaque scores were associated with a prior history of respiratory tract infection.

CONCLUSION

Considering the present research on the proposed topic, there is a close relationship between poor oral hygiene and the worsening of systemic pathologies of the respiratory tract, thus making both directly proportional. Correct hygiene guidance and the participation of dental surgeons in the hospital setting can contribute to the reduction

of systemic aggravating factors. We know that pathogens found in the oral cavity are often disseminated, via the air and bloodstream, to the lungs, for example, with infection being a two-way street. Attention must be paid to the fact that some drugs used to treat respiratory conditions can cause oral reactions, such as xerostomia, ulcerations, opportunistic infections and also injuries, which must be treated correctly by the dentist.

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