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Focal Infections in Oral Cavity

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In 1923, upon some 25 years of researches, dentist Weston Andrew Price of Cleveland, Ohio, published a landmark book [1,2] and related article in the *Journal of the American Medical Association* in 1925 [3]. Price concluded that after root canal therapy, teeth routinely host bacteria producing potent toxins [1].

Several conditions must be met so that a pathologically restricted process can function as a focus. First of all, the pathological process should have a chronic course, be clearly restricted from the surrounding environment, with its agents which will be disseminated by blood or lymphatic pathways. The microorganisms found therein should be poorly virulent without the possibility of causing sepsis, the lesion should be poorly vascularized, and the immunological forces of the organism should be able to limit the process and balance the pathologic agents in it. Such processes can exacerbate and through their harmful agents cause focal diseases of distant organs and systems [4]. These focal infections can be found anywhere in the body, but the oral cavity is considered the environment where they are most commonly formed.

Dissemination of the pathologic agents from focal pathological process to distant organs and systems in human body is called focal infection. Potential focuses are activated under the influence of a particular factor, and a particularly significant role is attributed to the immune status of the human body. In the last year, a new causal model for focal infections is considered, which associates oral health with the risk factor for systemic disturbances [5].

All focal infections, depending on the localization, are divided into two groups, oral and extra-oral focal infections. The oral focal infections are very common in the human body due to the anatomical and histological structure of the oral cavity and the permanent presence of virulent microorganisms in it. All oral focal infections have infective nature, caused by the microorganisms from the dental plaque. They are most commonly formed in the alveolar bone and the apical part of the tooth (periapical granuloma, cysts, radix relicta, etc). The pathological process that occur in the course of parodontal disease, and occur at the level of the alveolar bone and other tissues of the periodontium also belongs to the group of oral focal infections [6]. The infections of the tonsils and paranasal spaces can also serves as a reservoir of bacterial pathogens for focal infections [7].

Extra-oral focal infections are most commonly localized in the locomotor system, urogenital organs, digestive organs and respiratory organs [8].The most common focal disorders of dental origin, which are reflected on the cardiovascular system are endocarditis, myocarditis, arrhythmias, tachycardias, cardiac palpitations, etc. In the locomotor apparatus mono and polyarthritis, spondylitis, etc., in the nephrological status-glomerulonephritis, in the digestive system gastritis, colitis, enteritis, etc. Recently, there has been a renewed interest in the relation between oral flora and respiratory infection among “at-risk” patients such as patients from intensive care units or frail older adults. Extra-oral focal infections are most commonly localized in the respiratory organs are bronchial asthma, allergic rhinitis, etc [9].

From the dermatological point of view, eczema, urticarias, alopecia, acne, are extra-oral focal infections located in skin. As we can see, the range of diseases that can arise as a result of the action of focal infection of dental origin is large.

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