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Thyroid function and root resorption

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ABSTRACT

The regulation of degradative activity such as phagocytosis and bone resorption in the periodontal region is greatly influenced by factors controlling general bone modeling. The purpose of this study was to determine if thyroxine has any influence on the occurrence of force-induced root resorption. Young male rats were divided into three groups: a group of normal rats, a control group in which appliances were placed, and an experimental group in which appliances were placed and l-thyroxine was administered (5 micrograms/kg bw for 12 days).

Root resorptions were induced by orthodontic force on the maxillary incisors. Fewer force-induced root resorption lesions occurred in the thyroxine group than in the control group. Alkaline phosphatase activity in the thyroxine group was significantly different from the normal and control groups. Thus, the decrease of resorptive lesions in the thyroxine group seemed correlated to a change in the bone modeling process, especially as related to the resorption activity.

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KEY WORDS: Alkaline phosphatase, Bone metabolism, L-thyroxine, Modeling, Remodeling, Root resorption, Thyroid.