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Osseoperception: a clinical study on 24 patients

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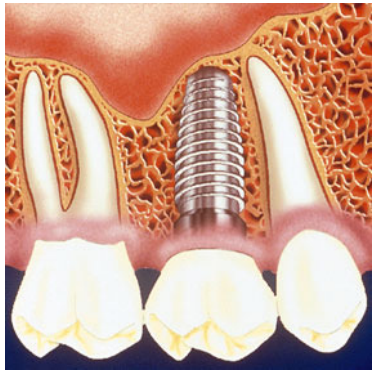
BACKGROUND: Between 1950 and 1960, Branemark established that bone is a dynamic living tissue. The importance of nervous fibers accompanying the bone vessels was recognized only 10 years later. These fibers, among other things, release neuropeptides like CGRP and s(P), which orchestrate bone remodeling processes and influence the activity of the immune system.
"Osseoperception" is a recent term indicating any physical sensation interpreted in the light of experience. It allows to increase feedback control of implant prostheses, compared with mucosa-supported prostheses.
Intra-dental and periodontal mechanoreception of natural teeth, allows to perceive a few micron of thickness. With the loss of all teeth, complete denture restoration is a compromise replacement which only partially restores function (perceptive sensibility: 80-100 micron). Implant-supported prostheses restore jaw function more appropriately, with improved psychophysiological discriminatory ability and oral stereognosis (15-20 micron).

MATERIALS AND METHODS: We selected 24 patients with mucosa-supported total prosthesis for more than 5 years. Patients were asked to report on a Visual Analogue Scale (VAS) their everyday perception of the interposition of foreign bodies like food between the arches. Then, patient rehabilitation was performed through Toronto prostheses. Other VAS measurements were taken 3, 6, 12 months after placement of the definitive prosthesis.

RESULTS: Patients with mucosa-supported total prosthesis had a statistically-significant lower average perception of foreign bodies between the arches than patients with implant prostheses. Their perception tends to increase after 3 months, and reaches the peak on the twelfth month.



DISCUSSION AND CONCLUSIONS: Osseoperception is often disregarded, but its importance is crucial. Implant-supported prostheses restore jaw function more appropriately, with improved psychophysiological discriminatory ability and oral stereognosis, because of the neurosensorial fibres of the medullary spaces.

Osteoperception should be numbered among the main advantages of implant prostheses, in comparison with mucosa-supported prostheses.

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