**Effectiveness of Removable Prosthesis Retained by 4 Implants-supported Locator Attachments: Implant survival rates**

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**BACKGROUND***:* The effectiveness of mandibular overdentures retained by 2 dental implants has been documented extensively over the past decades. According to recent systematic reviews, the implant survival rate of this oral rehabilitation concept reaches more than 95%. Many studies display high success rates of fixed implant-supported rehabilitations of the edentulous maxilla but these treatment options remain costly and are therefore reserved to a limited social category of patients.

**AIM**: The aim of this prospective study was to evaluate the implant success rates of removable prosthesis retained by 4 implants-supported Locator attachments after a follow-up period of 6 months.

**MATERIALS & METHODS**: The study included 30 patients with edentulous maxillae and at least one short span dentition (fixed) at the lower jaw. A CBCT was performed and was then evaluated by 2 independent surgeons to potentially exclude any patients presenting a lack of bone availability. Four regular or narrow diameter implants (Standard tissue level, Straumann, Basel, Switzerland) were placed and non-submerged. The implant positions were determined according to the bone availability. The conventional removable prostheses were adjusted after the surgery to avoid any contact with the implants. After 8 weeks, the conventional denture was connected to the implant with individual attachments (Locators®, Zestanchor,California,USA). The implant survival rate was assessed 6 months the connection of the prostheses on the implants. Additionally, post surgical complications and plaque and gingival index were recorded on each implants.

**RESULTS:** The patient mean age reached66.4 ± 7.7 years old. A total of 120 implants were placed in 30 patients. A single patient dropped out after one week and the statistics were based on the 116 implants remaining implants. After 6 months, 12 implants were lost in 9 patients, leading to an implant survival rate of 89.7% at the implant level. All failing implants were replaced successfully. Within the 2 months post-surgery until attachment connection, 76.7% of the patient showed peri-implant mucosa hyperplasia, associated with pain in 63.3% of the patients. Moreover, cover screw loosening occurred in 24% of the implants. At the 6 months follow-up, the gingival index displayed superficial inflammation in 23.3%) implants while the rest were healthy. Plaque was visible 7.8% of implants.

**CONCLUSION AND CLINICAL COMPLICATIONS:** The implant survival rate found in the present study is slightly higher than what is found in the literature for the upper maxilla. However, in such indication, implants can be easily replaced without compromising the prosthesis.

Considering the complications, post-surgical pain and peri-implant soft tissues hyperplasia were related to the discharge of the prosthesis leading to a diapneusy effect over the healing abutments.

Within the limit of the present study, the placement of four implant supported individual attachment to retain a maxillary denture seems to be an acceptable treatment option. However, placing a bone level implant in a submerged manner may reduce the number of post-surgical complications. Long-term evaluation should be conducted to show the effectiveness of such an implant treatment approach.