

Panoramic Evaluation of Marginal Bone Changes in Different Dental Implant Systems

A Thesis

**Submitted to the Council of College of Dentistry
At the University of Baghdad
In Partial Fulfillment of the Requirements for the
Degree of Master of Science in
Oral and Maxillofacial Surgery**

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Iraq-Baghdad

2008

1429

Abstract

The dental implants are gaining an important role in substituting missing teeth and understanding its installation effect on the surrounding soft and hard tissues is important . The purpose of this study is to radiographically evaluate marginal bone changes around different dental implant systems according to flap design and type of bone during the period of osseointegration and early loading period till 12 months after the insertion of the implants .

Three dental implants systems (150 dental implants , 50 Friadent , 50 Tiolox and 50 Oraltronics) were used in this study . Forty eight healthy patients included in this study , twelve of them for prospective study and thirty six for retrospective study. The age of the patients range from (20 years old) to (57 years old) , with average age 38.5 years old . Radiographic examinations were carried out by digital panoramic radiographs (Dimax x-rays system) before the operation , and 1 month , 3 months , 6 months and 12 months of implants insertions.

The study shows an amount of mean marginal bone resorption for all implants systems occurring during the period of osseointegration and after uncovering and loading till 12 months after insertion , the first month particularly shows more marginal bone resorption . Also the implants inserted with flap operations show more mean marginal bone resorption than the implants inserted by flapless operations which is statistically highly significant . The implants inserted in the maxillary arch show more mean marginal bone resorption than the implants inserted in the mandibular arch which is statistically significant , while the anterior segments show more mean marginal bone resorption than the posterior segments but with non significance difference except for the first month mesially which is statistically significant . For the difference between the three implants systems , Oraltronics implants systems show higher mean marginal bone resorption followed by Tiolox then Friadent .