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### CL3 - STUDY OF RETENTION AND WEAR IN ATTACHMENTS USED ON IMPLANT SUPPORTED OVERDENTURES

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#### KEYWORDS

Overdenture, attachments, fatigue cycles

#### INTRODUCTION

According to OMS the population over 65 years of age in 2030 will double the current population and the use of mandibular complete dentures will be constant. The overdentures supported by implants significantly improve the function, efficiency, stability and retention compared with conventional dentures.

#### OBJECTIVES

Manufacture a testing machine to:

- Evaluate and compare the changes in retention amounts of commonly used attachments in overdentures implants
- Evaluate the wear produced in the components of attachments
- Evaluate the loss of retention of attachments
- Assess and quantify the complete loss, in time, of the attachments retention

#### MATERIALS AND METHODS:

Fabrication of a universal testing machine to simulate fatigue cycles during the insertion / detachment of attachments implants. Measure the wear of metal components found in the attachments by using digital micrometer. Using an scanning electron microscope (SEM) to register the wear of the attachments during the test cycles.

#### DISCUSSION

There is a need to find the ideal attachments because their components are always under forces that lead in a short time the loss of its purpose, ie, retention of implant prostheses. After the production of this machine we will be able to evaluate various systems of attachments (Locator®, Dalbo®, Dalbo Plus®, Preci Clix®...) and realize which the best system is,

over time, in terms of retention and durability.

#### CONCLUSION

The proposed scheme is feasible and would yield results until late 2011.

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## COMMUNICATION LIBRE

### CL3 - ÉTUDE DE LA RÉTENTION ET L'USURE DES ATTACHEMENTS UTILISÉS SUR LES PROTHÈSES ADJOINTES COMPLÈTES SUPRA-IMPLANTAIRES

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#### MOTS-CLÉS

Prothèse adjointe complète, attachements, cycles de fatigue

#### INTRODUCTION

Selon l'OMS la population de plus de 65 ans, en 2030, sera le double de la population actuelle et l'utilisation de prothèses complètes mandibulaires sera constante. Les prothèses sur implants améliorent de façon significative la fonction, l'efficacité, la stabilité et la rétention par rapport aux prothèses classiques.

#### OBJECTIFS

La fabrication d'une machine d'essai pour:

- Évaluer et comparer l'évolution des montants de rétention des attachements couramment utilisés dans la prothèse adjointe complète supra-implantaire;
- évaluer l'usure produite dans les éléments constitutifs des attachements;
- Évaluer la perte de la rétention des attachements;
- Évaluer et quantifier la perte totale, dans le temps, de la rétention des attachements.

#### MATÉRIELS ET MÉTHODES

Machine à essai universelle pour simuler les cycles de fatigue lors de l'insertion / détachement de attachements. Mesure de l'usure des composants métalliques trouvés dans les attachements en utilisant un micromètre numérique. En utilisant un microscope électronique à balayage (MEB) enregistrer l'usure des pièces jointes au cours des cycles d'essai.

#### DISCUSSION

Il est nécessaire de trouver les attachements idéals parce que leurs composants sont toujours soumis à des forces qui conduisent, dans un délai très court, à la perte de son objectif, à savoir, maintenir les prothèses attachées sur les implants. Après la

production de cette machine, nous serons capables d'évaluer les différents systèmes d'attachements (Locator®, Dalbo®, Dalbo Plus®, Preci Clix® ...) et de définir le meilleur système, au fil du temps, en termes de rétention et de durabilité.

#### CONCLUSION

Nous sommes sûrs que le système proposé est réalisable et donnera des résultats pendant l'année 2011.

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