Gradual Loss of Partial Denture Retentive Forces

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A partial denture can be oppropriately accommodated physiologically on the denture base only with good understanding of the stomatognathic system biostatics. A force can either act as a physiological stimulus or can lead to pathological alterations in supporting tissue, wich depends on a great number of factors.

The aim of the study was to determine the initial retentive force values of cast clasps, anchors and magnets as wel as their gradual loss of force after a certain number of retentive elements, extraction and insertion cycles.

Measurement were carried out at the Materials Department, School Engineering and Naval Architecture, University of Zagreb. The examined specimens were made of materials and ready-made elements in accordance with the manufacturer's declaration. They satisfy the DIN 13912 and DIN 13906-1 criteria and comply with other international standards. The device for retentive force measurement can periodically both include and exclude retentive elements thus continually collecting measurement data.

Gradual loss of the examined retentive element forces was analysed by these measurings. The obtained values of the examined retentive elements qualitative analysis are presented in graphs and tables.

In the course of analysis it was dicovered that the retentive force value of both clasps and anchors gradually decreases whereas the magnetic force of the alloys remains unchanged.

The key factors which have a great impact on the retnetive force value are wear and material fatigue. A clasp in a wet environment (saliva) has less retentive force, but due to decreased wear the retnetive force decrease will progress more slowly.

Vertikalne frakture krune s amalgamskim ispunom

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Amalgam se kao restorativni materijal rabi već više od 150 godina. Mehaničko opterećenje može rezultirati dimenzijskim promjenama dovodeći do nastanka rubnih pukotina i fraktura tvdoga zubnog tkiva.

Svrha rada bila je utvrditi čestoću i lokaciju takvih fraktura kod zuba s amalgamskim ispunom. Ispitano je 30 ispitanika (21 muškog i 9 ženskog spola) u dobi od 16. do 42. godine. Kliničkim pregledom u 23 od 30 ispitanika (159 zubi) ustanovljene su frakture.

Rezultati su pokazali da: 1. 48% fraktura postoji kod primarnih amalgamskih restauracija, 2. frakture su lokalizirane bukalno (31%) i disto-aproksimalno (26%), 3. gotovo polovica ispuna I. i II. razreda ima frakture, 4. najčešće su kod gornjih molara (75%), osobito kod prvoga molara (80%), 5. u 61% ispitanika frakture su locirane disto-aproksimalano, 6. nema statistički znatne razlike između muškoga i ženskoga spola po čestoći fraktura, 7. čestoća fraktura raste s godinama starosti. Frakture su uvjetovane svojstvima amalgama, utjecaju opterećenja na amalgamsku restauraciju i drugim čimbenicima.

Ovo ispitivanje navodi nas na zaključak da svaki drugi pacijent s amalgamskim ispunom ima frakturu te je potrebna točna dijagnoza i zamjena ispuna kako bi se spriječila daljnja napuknuća tvrdoga zubnog tkiva.

Vertical Fractures of the Tooth Crown With Amalgam Filling

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Amalgam has been used as a restorative material for 150 years. Mechanical loading can lead to dimensional changes resulting in marginal gaps and cracking of the hard dental tissue.