



The validity of a method for detecting cuspal interferences during chewing function

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Objective : The occlusal adjustment of a crown/bridge is usually carried out using articulating papers during the tapping and border movements before cementing. Since border movements and chewing movements have different pathways, a patient sometimes complains some difficulties to chew after insertion of the prosthesis. The complaints mostly result from the cuspal interference that is defined as the contact of cusps that interfere with the pathway of the mandible during functional movements. We previously reported that the cuspal interference is likely to result in anteriorly deviated chewing pathways before reaching the intercuspal position. It is therefore important to detect cuspal interferences which possibly still remain after the conventional occlusal adjustments of a crown/bridge and to effectively remove them before cementing it. The objective of this study was to evaluate the validity of a clinical examination for detecting the possible cuspal interference.

Methods : Subjects consisted of healthy individuals with natural dentition (n=30, mean 27.2 yrs) and with prostheses except for implant or removable prostheses (n=30, mean 35.1 yrs). Horizontally projected

closing jaw movements during gum chewing were recorded using Sirognathograph® (Canopus) and classified according to the presence of anterior deviation before reaching the intercuspal position. Teeth contacts were recorded with T-Scan II® (Tekscan) during the simulated closing chewing pathways manipulated by the examiner. The relation between jaw movement and teeth contact was evaluated using multiple linear regression analysis and discriminant analysis using SPSS 12.0J® for Windows.

Results : Multiple linear regression analysis revealed that the non-working side first premolar and the first and second molars were likely to contribute to the presence of the anterior deviated pathways. Discriminant analysis revealed that the teeth contacts obtained with this method had the sensitivity of 0.78 and the specificity of 0.71 in discriminating the anterior deviated pathways.

Conclusion : It was concluded that the method described in this study was valid in clinically detecting the cuspal interference that might affect the closing chewing pathways.