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Comparison of surface roughness and elemental analysis of different mini implant systems

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Mini implant systems are used for orthodontic anchor and planning of Anchorage is very important for the success of orthodontic treatment. surface chemistry, surface topography and roughness of mini implant. Not only changes in the design of mini implant affect stability and but only properties and unwanted material contamination on implant surfaces affect of osteointegration, stability and success on function. Six types mini implants from six major companies were included in the study. Mini implants were analyzed with scanning electron microscopy (SEM), energy dispersive X-ray spectroscopy (EDS) and infinite focus microscopy (IFM). All mini implants showed a well implant-shape, surface and acceptable surface morphology. However, at the higher magnification, small cavities and protrusions were observed on surfaces of some mini implant systems. Various elements which are not related to the metal composition of the mini implant were detected on mini implants. Statistically significant differences were found in terms of amounts of elements among mini implant brands. In additional, roughness examinations were performed and except one system (Abso Anchor), all mini implant brands had smooth surfaces. Surface characteristics were affected by the mechanical manufacturing, packaging, sterilization and handling process. The purpose of this study is to compare different mini implant systems including the surface morphology, elemental composition of surfaces and roughness.

Biography

Turker Yucesoy has completed his PhD from Erciyes University and he started his Post-Doctoral studies in Oral&Maxillofacial Surgery Department at Bezmialem Vakif University in 2017.

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