Morse taper implants and platform switching, the new paradigm in oral implantology

Dental implants have achieved long-term success due to the osseointegration of highly biocompatible titanium integrating to the surrounding bone. Following the establishment of osseointegration, the implant system depends on the mechanical and chemical stability of the contacting metal joints, which must sustain proper torque originated from the friction between contacting surfaces. Through the development of novel techniques on surface treatment, as well as enhanced implant design, modern implants have improved the prognosis of the long-term osseointegration and performance of dental implants.

Considering the novelty in technology on dental implant joints, Jokstad et al. noted the development of internal connections showing improved results regarding esthetic outcomes and mechanical stability. Currently, common examples of internal implant-abutment connection designs are the internal hexagonal and the Morse taper connection. A unique design feature of the Morse taper implant abutment connection is an internal joint design between two conical structures. This connection was developed by Stephen A. Morse, in 1864, and since has been globally used to connect drilling machines to a removable rotating drill piece. In implant dentistry, a conical “male” abutment is tightened into a “female” conical implant design. This internally tapered design creates significant friction via the high propensity of parallelism between the two structures within the joint space. The Morse taper angle is determined according to the mechanical properties of each material. For instance, titanium-based structures have an ideal relationship between contacting surface angles and coefficient of friction.

Biography

Oswaldo Villa Campos graduated from UNAM University National Autonomous of Mexico in 2007. He worked for Westhill University in 2010 and ISO (Instituto Study Odontoiatrici). He obtained the Master Degree in ULA (Latin-American University) and is a member of ITI (International Team For implantology since 2008), Member of ADA and world member of Leading implant centres. He was selected as speaker of Manohay Mexico (straumann/Neodent) and since 2014; he was guest speaker in several Universities and in programs of oral implantology. He has participated in conferences in Mexico, Colombia and Venezuela.

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