

특강 III(Special Lecture III)

Surface Innovation and Osseointegration

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Over the last 10-15 years, great effort of surface innovation of clinical implants has been carried out, particularly on topographically altered 'rougher' surfaces such as plasma sprayed, acid-etched and blasted rough implants towards intermediary roughened surfaces. However, various surface oxide properties of oxidized played a role on significantly improved bone response. Sul have introduced implants with different surfaces chemistry such as Mg-incorporated, Ca - incorporated, S-incorporated, and P-incorporated implants and reported significant improvements of the bone response. Sul investigated the significance of surface chemistry of ions incorporated implants to bone tissue reactions and then proposed two action mechanisms of osseointegration of his oxidized implants, i.e. mechanical interlocking through bone growth in pores and biochemical bonding. In particular, bioactive surface chemistry of oxidized implants such as Mg-, Ca-, incorporated implants is of great importance for fast and strong integration of implants in bone. The hypothesis that is currently most favored for surfaces chemistry is biochemical bonding as an action mode of reinforced osseointegration.