EuroSciCon

EuroSciCon Conference on

Dental & Dental Hygiene

March 26-27, 2018
Edinburgh, Scotland

J Den Craniofac Res 2018, Volume: 3
DOI: 10.21767/2576-392X-C1-003

IMPROVED AND MORE PREDICTABLE VERTICAL BONE AUGMENTATION FOR DENTAL IMPLANTS BY CONTROLLING BONE GRAFT SUBSTITUTE MICROSTRUCTURE

Zeeshan Sheikh[1,2]
[1]University of Toronto, Canada
[2]Lunenfeld-Tanenbaum Research Institute – Sinai Health System, Canada

The long-term success of implants depends upon the degree of osseointegration that can be achieved, which is largely determined by the volume and quality of bone available at the time of surgery. Bone height and volume is often diminished in patients due to the extended time after tooth loss and this is a major limitation impacting long term dental implant treatment success. Some of the commonly used surgical techniques for ridge augmentation are (i) Osteoperiosteal flap (OPF); (ii) Distraction osteogenesis (DO); (iii) Block grafting; (iv) Guided bone regeneration (GBR) using membranes; and (v) Subperiosteal tunnelling for minimally invasive approach to GBR. This talk discusses the development of bioceramics graft materials with controlled microstructure and superior biological properties to those currently available. Dicalcium phosphate cements, brushite and monetite, resorb faster in vivo than hydroxyapatite (HA). Monetite (unlike brushite) does not re-precipitate as HA in vivo and demonstrates superior osteoconductive properties. We have produced monetite disc grafts by varying processing conditions which alter their physical properties such as porosity, surface area and mechanical strength. Histological observations after 12 weeks of onlay grafting on rabbit calvaria reveal higher bone volume (38%) in autoclaved monetite grafts in comparison with the dry heat prepared monetite grafts (26%). The vertical bone height gained is similar for both the types of monetite grafts (up to 3.2 mm). This talk discusses and provides information regarding two types of monetite onlay grafts prepared with different physical properties that could be used for achieving more predictable vertical bone augmentation.

zesheikh@hotmail.com