

COLLAGENATED HETEROLOGOUS CORTICO-CANCELLEUS BONE MIX STIMULATED DENTAL PULP DERIVED STEM CELLS

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Collagenated heretologous cortico-cancellous bone mix (CHCCBM) is largely employed in maxillary and dental surgery for regeneration procedures, and is similar to human bone from chemical and physical point of view and promotes osteogenesis. In order to get more inside how this biomaterial induces osteoblast gene expression to promote bone formation, the mRNA levels of bone related genes were compared in human osteoblasts and dental pulp stem cells, using real time RT-PCR. The obtained results demonstrated that CHCCBM enhance stem cells differentiation and deposition of matrix by the activation of osteoblast related genes SP7, FOSL1 and SPP1.

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SURVIVAL AND SUCCESS RATE OF SPIRAL IMPLANTS INSERTED MANDIBLE

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The rehabilitation of the edentulous mandible is a relatively common clinical problem and dental implants are popular medical device routinely use in daily practice. Recently a new type of two-piece spiral implants has been introduced in the market. Here a retrospective study is reported. A total of 54 two-piece implants were inserted in mandible in the period between June and December 2017, 30 in female and 24 in males. The median age was 53 ± 8 . Implants replaced 11 incisors, 6 cuspids, 23 premolars and 14 molars. Implant' length was 10 mm, 11,50 mm and 13 mm in 16, 19 and 19 cases, respectively. Implant' diameter was 3.3 mm, 3.75 mm and 4.2 mm in 22, 13, 19 cases, respectively. Twenty two fixtures were placed in totally edentulous patient and 32 in partially edentulous subjects. There were 4 single crowns, 28 implants bearing two or greater bridges, 4 removable dentures and 18 supporting Toronto bridge. The overall mean follow-up was 13 ± 2 months. One implant was lost so that survival rate (SVR) was 98.15%. Then peri-implant bone resorption (success rate, SCR) was used to investigate peri-implant bone stability. No implant have a crestal bone resorption greater than 1.5 mm so that the implants studied are reliable devices for oral rehabilitation with a very high SCR and SVR.

IMPLANTS OUTCOME INSERTED IN DIFFERENT SITES

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Oral rehabilitation by means dental implants has high standards of success. Recently, a new type of two-pieces spiral implants has been introduced in the market. Since few reports focus of the efficacy of this medical device as a reliable tool for oral rehabilitation, here a retrospective study is reported. In the period June-December 2017 one hundred and two spiral fixtures were inserted, half in females and 51 in males. The median age was 56 ± 8 (min-max 36-73 years). Forty-eight implants were inserted in upper jawbone and 54 in mandible. Two implants were lost and thus survival rate (SVR) is 99.9%. Then peri-implant bone resorption was used to investigate the clinical success (success rate, SCR) over time. No implants have a crestal bone resorption greater than 1.5 mm in the first year follow up. No studied variable has an effect on clinical outcome. In conclusion the studied implants have high SCR and SVR so that they are good tools for oral rehabilitation.

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OSTEOGENESIS: HOW CAN IT BE STIMULATED?

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Biophysical therapy can be performed using inductive, capacitive, mechanic or implanted devices. The mechanism of action of physical stimuli is at a membrane level where the activation of calcium channels determines the enhancement of cell proliferation and the production of growth factors. Biophysical therapy should be performed using devices and modalities described in the literature. The biophysical stimulation of osteogenesis is effective in the enhancement of the biology of fracture healing in presence of a correct orthopedic treatment in terms of good alignment and stabilization at the fracture site. The choice of which method must be used depends on the segment of bone that has to be treated, the type of fracture and if it is possible to apply the device on the skin. The presence of internal or external fixation devices is not a contraindication.

RETROSPECTIVE STUDY ON FORTY-EIGHT FIXTURES INSERTED IN UPPER JAW

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It is generally accepted that maxilla has a less bone quality than mandible and this fact makes implant rehabilitation more complex. Recently a new type of spiral implants has been introduced in the global market. Since few reports are available a retrospective study was performed. A total of 48 two-piece spiral implants were inserted, 21 in female and 27 in males. The median age was 58 ± 8 . Implants replaced 10 incisors, 9 cuspids, 25 premolars and 4 molars. Implant' length was 10 mm, 11.5 mm and 13 mm in 13, 24, and 11 cases, respectively. Implant' diameter was 3.3 mm, 3.75 mm and 4.2 mm in 25, 17 and 6 cases, respectively. One implant was lost, survival rate (SVR) = 97.91%. Then peri-implant bone resorption was used to investigate success rate (SCR). The mean bone resorption was 0.3 mm after an average period of 1 year follow up. In conclusion the implants studied are reliable devices for oral rehabilitation with a very high SCR and SVR.

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IMPLANT SURFACE ACTIVATES FIBROBLASTS: AN IN VITRO STUDY

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Titanium (Ti) is that the most generally used material for dental, orthopedic and maxillofacial purposes thanks to its excellent biocompatibility and mechanical properties. Several data suggest that prosthesis anchorage to bone and soft tissue are often modulated by surface characteristics. Fibroblasts are the soft tissues cells concerned in producing extracellular matrix and collagen and their tight connection to implant neck is of paramount importance in preventing peri-implant infection. The aim of this work is to grow Human Fibroblast (HFb) for seven days in wells containing (or not) dental implants. The expression levels of some adhesion and traction-resistance related genes (COL11A1, COL2A1, COL9A1, DSP, ELN, HAS1, and TFRC) were analyzed using Polymerase Chain Reaction. Our results demonstrated that several genes encoding for extracellular matrix proteins are activated so giving more insight to the comprehension of the mechanism of cell to surface adhesion.