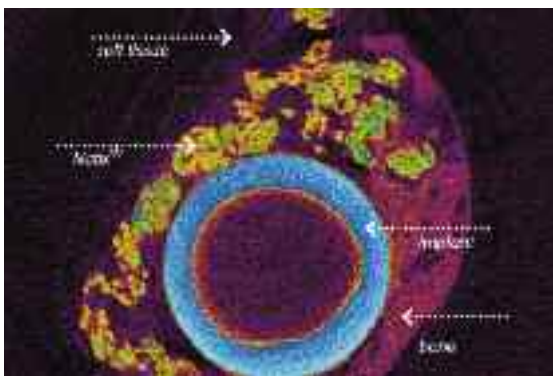


Treatment of periodontitis class II-furcations

Promising Results

Since the innovation by Per-Ingvar Brånemark more than 40 years ago, titanium has been successfully used for dental implants. Lately, Tigran Technologies in Sweden has shown that titanium also may be used for bone regeneration. By filling a cavity with porous, non-resorbable titanium granules, bone cells use the granules as scaffolding, and new bone grows through, around and between the granules.



Tigran has proved to be able to generate positive results in controlled studies or individual cases within the areas of peri-implantitis, sinus lift and other bone regeneration applications. Tigran currently investigates if porous titanium granules also may be used in osseous defects in periodontitis class II furcations.

Periodontitis in various forms affects up to 90 percent of the adult population [1]. There are currently no good treatment options within the area of class II furcations, but it is Tigran's ambition to demonstrate through studies that titanium granules can be used to regenerate lost alveolar bone also within this application.

Porous titanium granules – an optimal scaffolding for bone cells

The granules are manufactured from 100 percent commercially pure titanium and have an irregular shape and porosity of approximately 80 percent. It is the properties of the granules that give them their special characteristics, and which form the basis of all applications. When liquids such as blood or saline are added, the granules adhere through capillary forces, which means that they form a coherent mass that can easily be applied with an instrument. When the granules come into contact with the bone defect, they are released from the instrument as the amount of available liquid increases. Their irregular shape has

an interlocking effect and forms a stable structure, providing long-term stability for the growth of new bone and for fixation of implants and prostheses. The porous structure of the granules means that blood and nutrients can pass through them so that new bone can easily grow into, around and between the granules. Titanium is also a thrombogenic material, which means that the blood coagulates when it comes into contact with the granules, which stabilizes the coagulum and ensures excellent primary graft stability.

Drilling and fixation of implants

When healing is completed, the grafted area contains a mix of bone and porous titanium and behaves like ordinary bone. This bone can be treated like ordinary bone, i.e. normal drilling techniques can be used and screws can be fixed. Apart from being an optimal product for patients who have experienced bone loss for various reasons, the granules also have the characteristic of allowing immediate and long-term fixation of implants. The individual granules interlock when the implant is placed in position and form a stable foundation against the bone. The granules are non-resorbable, and the material filling the cavity retains a constant volume, which is an advantage when compared with the majority of competing products that are wholly or partially resorbable and thus loose volume during the healing phase. ■

[1] Birgitta Söder et al, Tandläkartidningen [The Swedish Dentists' Journal] no. 7/2008.

More Information

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