Bone allografts show promise as augmentation material

Brazil

Outcomes of a study that evaluated the use of fresh-frozen bone in the reconstruction of maxillary alveolar ridges to confirm the effective bone fill and support for the placement of dental implants, revealed that bone allografts can be successful as graft material for the treatment of maxillary ridge defects. The research, conducted by Dr Cintia Contar from Universidade Tuiuti do Paraná and Dr João Sarot from Universidade Federal do Paraná, in Curitiba, showed that if adequate surgical techniques are adopted, this type of bone graft can be safely used in regions of implant placement as a suitable alternative to autogenous grafts.

"The availability of adequate bone volume for dental implant placement is a problem for many patients. Insufficient alveolar contours may require bone grafting procedures to restore adequate bone volume before implant placement, and autograft is still considered as the gold standard in bone grafting. However it has some drawbacks such as donor site morbidity, increased blood loss and operative time, and insufficient quantity," Dr Contar explained. For her the use of bone allograft provides a reasonable alternative to meet the growing need for primary or supplementary material, as it offers decreased operative trauma and blood loss, absence of donor site morbidity and greater availability of bone.

In orthopedics there is currently a trend for surgeons to use allografts as substitutes for autografts, however the published oral and maxillofacial literature is limited in scope. Teachers and students in the specialization course in implantology at the Universidade Federal do Paraná have performed bone allografts procedures with good results. Contar and her team decided to study a group of patients in order to have available clinical and histological data to compare between their patients and the literature.

"I believe the results speak for themselves. Analyzing the allograft clinically you see a very good material with excellent tissue integration. None of the blocks dislodged at the time of implant placement. If you look to the reopening figure you can’t see any difference between the allograft and the patient’s own bone," Contar explained.

Another significant outcome is the lack of infection in the patients, even when early exposure occurred. Additional grafting was not necessary in any of the cases, suggesting a low resorption rate. “Histologically, we can observe a living bone with the same features of an autogenous bone. The reduced transoperative time and morbidity of the procedure when we compare it with autografts is another advantage,” she added. She believes this study brings a new perspective to oral and maxillofacial arena. “To our knowledge, it is the first study with a larger number of patients that evaluates the allograft procedure both clinically and histologically. Many oral surgeons still avoid using this material, because of prejudice and many ignore the extensive published data showing the excellent results in the orthopedics. Now they have one study in their own field which shows a very effective and safe option to offer to their patients,” she said.

There are many further studies to be done with this material, according to Contar. One of them is to evaluate the behaviour of this material after longer periods with occlusal loads. “Other issues we intend to study are: bone resorption rate, quantity and viability of bone morphogenetic proteins, and the optimal time for the reopening surgery,” she concluded.

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