New surgical techniques for a simplified approach to the bone regeneration

Clinical research in oral surgery and bone regeneration from the Department of Head, Neck and Sensory Organs, Oral Surgery and Implantology, Catholic University of the Sacred Heart (Università Cattolica del Sacro Cuore), Rome, Italy.

This special issue highlights clinical research conducted by the Oral Surgery and Implantology group of the Department of Head, Neck and Sensory Organs at the Catholic University of Sacred Heart in Rome, Italy.

The first two papers are retrospective studies describing the clinical performance of the Lamina Socket Sealing technique to preserve the alveolar ridge. The studies showed that the alveolar bone preservation technique using the flapless approach allowed not only the preservation of the damaged post-extraction socket, but also minimal ridge augmentation, maintaining adequate soft tissue and grafting of particulate xenogenic bone and cortical lamina and viable bone, according to the principles of guided bone regeneration.

The following three studies describe the clinical, histomorphometric and anatomical factors of a technique to manage the Schneiderian membrane perforation called the “Sinus Pack” technique. The studies show that the "Sinus Pack” technique was effective for managing perforations during sinus floor elevation surgery, allowing the completion of the surgical procedure even in cases of large perforations.

Another study described the clinical, radiological and histological outcomes of a transcrestal maxillary sinus floor elevation technique using injectable collagenic bone gel of xenogeneic origin. The study showed that the gel form was a minimally invasive technique that reduced the incidence of Schneider membrane perforations, making a widely used method, such as sinus floor elevation, safer and less operator dependent.

Two studies reported on the closure of large and small oroantral communication using heterologous biomaterials commonly used in guided bone regeneration techniques or biomaterials stabilized by porcine cortical lamina. The results showed that the use of a heterologous cortico-cancellous dual-phase graft covered with resorbable collagen membranes allowed effective closure of the large and small communications, preventing migration of pathological epithelia while increasing the bone ridge.

Two further studies describe the “Bone-in-Bone” and “Pack-into-Bone” techniques as alternatives to horizontal bone regeneration and alveolar bone augmentation. These techniques using resorbable heterologous collagenic biomaterials and without the use of retention devices for horizontal bone augmentation may be a viable alternative that is easily reproducible and has reduced morbidity for the patient.

All these studies have clinical applications relevant to oral surgery and bone regeneration, providing readers with current information for clinical practice.

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Editor