

ORAL AND MAXILLOFACIAL SURGERY

An important impulse of using the platelet gel in oral surgery was given by Robert Marx, from the University of Miami School of Medicine, through his pivotal article published in 1998 (Marx RE et al. Oral Surg Oral Med Oral Pathol Oral Radiol Endod 1998;85:638-646). Major applications of the platelet gel in oral surgery include dental implant, alveolar clefts, sinus lift, mandibular or maxillary fractures, oral-nasal fistulas. In these conditions the platelet gel **shorten the recovery time, reduce the surgery-related swelling and pain, accelerates the repair of the soft tissues, increases the short-term bone regeneration and the bone density**. The platelet gel can be used alone: in this case the “*osteinduction*” (the ability to stimulate stem cells to differentiate into mature cells) and the “*osteogenesis*” (the ability to produce new bone from precursor cells in the area) are stimulated. More frequently, platelet gel is mixed with allograft or synthetic graft material providing a more bioactive bone graft material which sustains osteinduction, osteogenesis and “*osteoconduction*” (structured scaffold that allows for vascular and cellular migration). Treatment of a mandibular cyst is depicted in the following images. The bone cyst (square) is removed and the bone loss is replaced with particulate bone graft material and platelet gel (arrow). Histology demonstrates osteogenesis (new osteoblasts together with bone particulate (1), osteogenesis (2; lower magnification), and osteogenesis plus vasculogenesis (3) (from Pappalardo S et al. Implantologia Orale 2007;2:45-49).

