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The role of free fibula flap in the mandibular reconstruction in case of ameloblastoma

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A soft tissue wound is a disruption of epithelial surface and may be associated with damage of the undelaying tissues. Hard tissues wound involve fracture of the human skeleton with associated soft tissue injuries. The management of wound healing has begun since ancient times beginning with ancient Egyptians methods of treating wounds, the Ayurveda knowledge in Indian civilization and use of herbs in Chinese medicine. All those techniques emphasize on infection control and supporting tissue regeneration. Today we understand that tissue regenerative principles are based on the tissue engineering triad comprising of the scaffold, cells and signaling molecules. Altering anyone of these elements may enhance wound healing. Studies have shown that delivering ultrasound energy to living cells enhances the cells activity following biomechanical stimulation. Bone injuries can be made to heal faster and more efficient by applying therapeutic ultrasound to the fracture site. Evidences using Low Intensity Pulsed Ultrasound (LIPUS) for bone healing have been proven both in vitro and in vivo animal experiments with encouraging results. Clinical application of LIPUS in dental implantology has recently been investigated. In this pilot study, LIPUS enhances bone formation around loose dental implants as confirmed by radiological investigations, torque value and RFA value. The study showed evidence that LIPUS may be utilized as treatment modality to save dental implant with questionable primary stability during stage-I implant placement with the aim of achieving adequate osseointegration and improves implant success. It is believed that ultrasound energy encourages the production of the growth factors and cytokine that stimulate osteoblasts to produce more osteoid that enable bone regeneration perhaps even in compromised wound healing sites.

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