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The effect of low-level laser on healing of jaw fracture: Experimental study

Khaled A Elhayes, Mohamed H El-Shamy, Radwa H Hegazy and Ahmed A Zaki
Cairo University, Egypt

Aim: The current study was conducted in an attempt to accelerate the healing process and minimizing the period of fixation of jaw fractures using low level laser therapy in respect to rate of callus formation.

Material & Methods: This study was performed on twenty dogs, all of them were subjected to intentional fracture in their mandibles in both sides (right and left) and then were fixed using intra-osseous wiring, they were divided into 2 groups. Group I (3weeks groups) has received low level laser therapy (LLLT) to their left sides for the area of fractures post-surgery for 9 sessions while the right sides not subjected to laser and served as a control. Group II (6weeks group) has received low level laser therapy (LLLT) to their left sides for the area of fractures post-surgery for 15 sessions, while the right sides not subjected to laser and served as a control. The left sides were subjected to diode laser of 980nm wavelength for 2 minutes touching the outer surface of skin towards the fracture line.

Results: There was a significant increase in bone density in the laser sides (left sides) of both groups comparing with the control sides (right sides).

Conclusion: Low level laser therapy was proved to have the ability to assist and accelerate the healing process of jaw fractures. It has a bio-stimulatory effect on osteoblast-like cells after laser irradiation and so shortens the duration of fixation of fractured bone.

Biography

Khaled A Elhayes is a Professor of Oral & Maxillofacial Surgery, Faculty of Oral & Dental Medicine, Cairo University and was a Consultant of Oral Maxillofacial Surgery and Dental Implantology at different well known hospitals of KSA, UAE and Qatar. He was a Chairman of OMFS Department, Faculty of Dentistry, 6 October University, Egypt. He has obtained his PhD degree in Oral & Maxillofacial Surgery (Orthognathic Surgery) in 2001 from Cairo University. He has many international publications in orthognathic surgery, maxillofacial traumatology, dental implants, TMJ, pain and laser applications in oral & maxillofacial region. He is a Member at Egyptian Association of Oral & Maxillofacial Surgeons (EAOMS) and Egyptian Dental Association (EDA).

pdkae@yahoo.com

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