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Original article

Enhancing reparative processes of cartilage defects using He-Ne laser irradiation

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Abstract

So much remedies and medications were tried to induce healing of the cartilages and increase the rate of their recovery, from that were; hormones, herbals, electromagnetic radiations and also cold lasers. To assess the ability of Helium - Neon (He –Ne) laser on the reparative processes of cartilage defects. The experiment included of using 24 rabbits, 12 of them allocated as a group of standardization while the remaining were considered as a group of treatment with laser radiation. All the animals underwent a surgical operation included making a three sided incision in the skin of the inner side of the auricle, the skin is then folded temporally so that the cartilage below exposed, then a four equal sided incision was made in the cartilage and pealed out the skin incision to appear as a square shaped. The difference between the two groups that the animals of the group which was allocated to be irradiated with the He – Ne laser beam with 5 mW out put postoperatively and continued for seven days. To compile specimens from the site of the operation, the animals of both groups were divided in to 4 subgroups with 3 rabbits each, one subgroup from the both group was specified for collection of specimens at the weeks 1, 2, 4 & 6 post postoperative and sent to the laboratory to be examined histopathologicaly. Significantly well-developed cartilage growth with the both types of cartilaginous cells (mature - chondroblasts and immature chondrocytes) fill the operation site , there was also a raise in the connective tissue thickness at the same site which composed mainly of elastic fibers and fewer numbers of collagen fibers. Irradiation with cold or biostimulating lasers raised the mitotic activity of the cartilage cells, activated the reproduction processes likewise the intra and extra regenerative repair.

Keywords: Cartilage Lost, He-Ne Laser & Repair.

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