

Morphological Studies on Crushed Sciatic Nerve of Rabbits with Electroacupuncture or Diclofenac Sodium Treatment

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Abstract: Sciatic nerves of 15 rabbits were crushed by Halsted straight mosquito hemostat with 8-11 Newton force for 60 seconds on a point 5 mm above the knee joint, and then the rabbits were equally divided into three groups. The acupuncture group was treated by electroacupuncture on Huan Tiao and Wei Zhong points (25 minutes/day) for 7 days. The medicine group was treated with intramuscular administration of diclofenac sodium (15 mg) daily for 7 days. The control group was not treated. After treatment, the distal parts of crushed nerve were examined under light microscope, the densities of normal myelinated fibers in 0.126 mm^2 were counted, and the diameters of 20 normal myelinated fibers were measured for each animal. The results showed that the mean densities were 176.2 ± 5.953 in the acupuncture group, 118.2 ± 10.878 in the medicine group and 101.4 ± 8.548 in the control group. The mean values were significantly different between the acupuncture and medicine groups ($p < 0.01$) and highly significant difference between the acupuncture and control groups ($p < 0.001$); but there was no significant difference between the medicine and control groups ($p > 0.05$). There are more small myelinated fibers ($0-9 \mu\text{m}$) in the acupuncture group than in the medicine and control groups ($p = 0.0028$). The results revealed and confirmed that acupuncture promotes nerve regeneration; diclofenac sodium did not show such an effect. The present study demonstrates the positive effect of acupuncture on regeneration of a crushed sciatic nerve in the rabbits. And acupuncture is a better treatment for regeneration of crushed nerve than diclofenac sodium.

Keywords: Morphological Study; Crushed Sciatic Nerve; Rabbit; Electroacupuncture; Diclofenac Sodium.