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分米波对大鼠周围神经慢性卡压的作用机制

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摘要:

目的:探讨分米波对周围神经慢性卡压康复的作用机制。方法:选取SD大鼠90只,随机分成A(实验)、B(空白对照组)两组。制备Mackinnon坐骨神经卡压模型。A组术后第1d至术后12周,局部行分米波辐射,B组于A组治疗同时行空白对照。术后进行大体、光镜、电镜、免疫组化、轴突图像分析和神经电生理测定。结果:实验组较对照组再生有髓神经纤维数目多、髓鞘发育成熟,神经膜细胞中S-100蛋白的表达水平较高,神经传导速度快且波幅较高。结论:分米波可促进神经膜细胞增殖,提高再生神经中S-100蛋白的表达水平,有利于神经再生和功能恢复。

关键词:分米波 周围神经卡压 神经再生 S-100蛋白

Mechanisms of decimeter wave on peripheral nerve entrapment in rats

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Fund Project:

Abstract:

Objective: To investigate the mechanisms of decimeter wave on rehabilitation after peripheral nerve entrapment.Method: Sciatic nerve of SD rats were compressed by a silicone tube to form a nerve entrapment model of Mackinnon.After operation the experimental group were treated with decimeter wave.Nerves were exposed and observed on the 7th,14th,30th,60th and 90th day after operation and the samples were observed with lightmicroscope,electronmicroscope and immunohistochemistry.Image pattern analysis of axon and electro-physiology were done on the 90th day after operation.Result: The regenerated nerves of decimeter wave sides had more medullated fibers,larger mean axons diameters and thicker myelin sheath,shorter latency of compound muscle action potential,faster nerve conduction velocity and higher wave amplitude.The expression of immunologic reaction to S-100 protein in Schwann cell were higher than those of control sides.Conclusion: Decimeter wave can promote the expression of S-100 protein in Schwann cells.Decimeter wave could promote regeneration of peripheral nerve and functional recovery.

Keywords:decimeter wave peripheral nerve entrapment nerve regeneration S-100 protein

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