Chronic High-Frequency Nerve Block with an Implanted Waveform Generator

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Abstract

High frequency alternating current waveforms have been used to produce reversible conduction block in mammalian peripheral nerves. However, there have been no reported studies evaluating the effects of chronic high frequency block of peripheral nerves. Six adult dogs were implanted with tripolar nerve cuffs on the bilateral peroneal nerves and the left radial nerve. The left radial nerve was chronically stimulated with a blocking waveform over 4 weeks. Clinically, the animals showed no signs of nerve damage. Histological samples were taken from each of the nerves and surrounding tissue at the end of the experimental period. There was a small increase in degree of fibrosis and inflammation in the nerve cuff area compared with surrounding nerve fiber. There was no gross histological evidence of damage to the nerve fascicles. The clinical and histological observations show evidence for long-term safety with use of high-frequency waveforms for peripheral nerve stimulation.

References


References

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