Effect of Acute Fixed Quantitative Traction Tension to the Microcirculation of Domestic Rabbit Median Nerve
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Through the establishment of living nervous tissue quantitative instant stress and strain simple traction animal model, this paper employed stereomicroscopy, ink granule labeling method and Saria's fluorescence method, to investigate the surface area density, length density, volume density, degree of vascular filling, effective blood volume and the permeability of blood vessels in the nerve under high tension conditions. From the results, it was found that: (1) Traction first influenced the venous return in the nerve, causing blood stasis, blood vessel distented, collateral circulation was opened, surface area density, length density and volume density were markedly increased. (2) Under tension 52.48±2.09g, the effective blood volume was higher than that of normal level. Following the continuous increase in tension, blood volume gradually decreased. Until the tension was 159.27±0.86g, blood volume became only 8% of the normal value. (3) When the tension was 127.40±3.15g, permeability of the capillary blood vessels began to increase markedly, approximately at 4 times of the normal value, following that, as ischemia increased, blood vessel permeability under high tension gradually reduced, indicating that ischemia caused source of exudation deficit. In the paper, possible mechanism of traction injury was also discussed, and raised the point that for mechanical traction, continuous compression and ischemia, maybe, are the main causative factors to acute traction injury.