عنوان مقاله:

The Effect of the Silicone Ring Tourniquet and Standard Pneumatic Tourniquet on the Motor Nerve Conduction, Pain and Grip Strength in Healthy Volunteers

محل انتشار:

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خلاصه مقاله:

Background: The pneumatic tourniquet (PT) is routinely used in upper and lower limb operations by most orthopaedic surgeons. The silicone ring tourniquet (SRT) was introduced in clinical practice the last decade. Clinical as well comparative studies in volunteers concerning its safety and efficacy have been published. The aim of this study was to investigate the postoperative effect of the silicone ring tourniquet (SRT), primarily on the motor nerve conduction, and secondarily on the pain and grip strength, in comparison to the effect of the pneumatic tourniquet (PT) in healthy volunteers. Methods: Both tourniquets were applied in the forearm of the dominant arm in ۲۰ healthy volunteers and were kept on for ۱۰ minutes. Pain was measured using the visual analogue scale and grip strength was measured with a hand dynamometer. We evaluated the following parameters of median nerve conduction: motor conduction velocity (MCV), latency (LAT) and amplitude (AMP). Results: Pain score at the time of tourniquet application was higher in SRT group but the alteration in pain scores in PT group was higher, with statistical significance (P<۰.۰۵). The grip strength was reduced by the application of both tourniquets; however there was a significantly higher reduction in the SRT group (P<۰.۰۵). The conduction impairment of the median nerve was worse in

the PT group than in the SRT one, according to the changes in MCV (P<۰.۰۵). Conclusion: Median nerve conduction was affected more after PT application as compared to the SRT. Nevertheless, the reduction of grip strength was .higher after the SRT application

کلمات کلیدی:

Cuff, Nerve conduction, Pain, Silicone ring tourniquet, Tourniquet