

Thesis Title Motor Point of the Intrinsic Muscles of Hand
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ABSTRACT

The purpose of this study is to delineate the motor point of the intrinsic muscles of the hand in order to aid in placing of electrodes in electrical stimulation of the hand especially of those with nerve injury. The study was performed on forty cadaveric hands. Nineteen muscles in each hand were categorized into three groups: thenar, hypothenar, and midpalmar group. To find out the position of the motor point, the hand was dissected along two reference lines, the reference transverse line and the reference axial line. Subsequently, the data were analyzed in term of mean, standard deviation, standard errors and the confidence interval. The results indicated for each intrinsic muscle of hand as follows : the motor point of the abductor pollicis brevis muscle was found at (1.91 ± 0.47 , 2.89 ± 0.45) cm., the motor point of the opponens pollicis muscle at (2.16 ± 0.56 , 3.50 ± 0.57) cm., the motor point of the flexor pollicis brevis muscle at (1.79 ± 0.57 , 4.27 ± 0.52) cm., the motor point of the abductor digiti minimi muscle at (-2.48 ± 0.46 , 2.51 ± 0.59) cm., the motor point of the opponens digiti minimi muscle

at (-2.51 ± 0.56 , 3.27 ± 0.67) cm., the motor point of the flexor digiti minimi muscle at (-2.13 ± 0.52 , 3.72 ± 0.65) cm., the motor point of the first lumbrical muscle at (1.74 ± 0.37 , 6.28 ± 0.70) cm., the motor point of the second lumbrical muscle at (0.72 ± 0.30 , 6.38 ± 0.71) cm., the motor point of the third lumbrical muscle at (-0.65 ± 0.41 , 6.16 ± 0.74) cm., the motor point of the fourth lumbrical muscle at (-1.78 ± 0.34 , 6.01 ± 0.81) cm., the motor point of the first dorsal interosseous muscle at (2.16 ± 0.52 , 5.70 ± 0.75) cm., the motor point of the second dorsal interosseous muscle at (0.73 ± 0.39 , 5.17 ± 0.69) cm., the motor point of the third dorsal interosseous muscle at (-0.08 ± 0.33 , 5.05 ± 0.63) cm., the motor point of the fourth dorsal interosseous muscle at (-1.39 ± 0.40 , 4.65 ± 0.69) cm., the motor point of the first palmar interosseous muscle at (2.53 ± 0.63 , 4.66 ± 0.83) cm., the motor point of the second palmar interosseous muscle at (1.39 ± 0.52 , 5.43 ± 0.77) cm., the motor point of the third palmar interosseous muscle at (-0.86 ± 0.41 , 4.88 ± 0.69) cm., the motor point of the fourth palmar interosseous muscle at (-1.78 ± 0.70 , 4.31 ± 0.58) cm., the motor point of the adductor pollicis transverse head muscle at (1.09 ± 0.46 , 5.27 ± 0.59) cm. and the motor point of the adductor pollicis oblique head muscle at (1.09 ± 0.41 , 4.44 ± 0.66) cm. The information obtained from this study would then, shed the light to the possibility of more accuracy of locating the electrode at the proper place during electrical stimulation of the intrinsic muscles of the hand. Furthermore, it can also be used in educational programme of electrotherapy as well.