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Effects of Taping on Wrist Extensor Force and Joint Position Reproduction Sense of Subjects With and Without Lateral Epicondylitis

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Abstract. [Purpose] The purpose of this study was to assess the effect of taping on wrist extensor force reproduction (FR) and wrist joint position reproduction (JPR) sense in subjects with and without lateral epicondylitis. [Subjects] Thirty workers in an automobile-parts manufacturing company participated: fifteen workers who had experienced pain with lateral epicondylitis and fifteen workers who had no history of lateral epicondylitis. [Methods] Taping was applied on the proximal forearm, starting from the medial, and tracking laterally. This was repeated two or three times.The FR error and JPR error of both groups (with and without lateral epicondylitis) were measured with and without taping. [Results] Without taping, the FR and JPR errors of the lateral epicondylitis group were significantly higher than those of the without lateral epicondylitis group.With taping, the FR error of the lateral epicondylitis group was significantly decreased from 1.24 kg to 0.49 kg. With taping, the JPR error of the lateral epicondylitis group was significantly decreased from 3.31 to 2.13 degrees. [Conclusion] The lateral epicondylitis group had significantly higher FR and JPR errors. Taping significantly improved force reproduction and joint position reproduction error.
Key words: Force reproduction, Joint position reproduction, Taping

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INTRODUCTION

Lateral epicondylitis (LE), commonly known as "tennis elbow", is a painful syndrome that occurs in the area of the lateral epicondyle, from which pain radiates proximally or distally depending on the severity of the condition[1,2)]. LE is equally common in both genders and usually develops between the ages of 30 and 50 years, although it is four times more frequent in individuals in their 40s[3)]. LE affects 3% of the general population, and this increases to 15% among people performing certain repetitive manual tasks. ECRB is implicated more frequently than any other muscle[7)]. The ECRB has a relatively small insertion into the lateral epicondyle, which is a poor biomechanical design for withstanding high loads[7)]. Morphological changes in the ECRB may reflect the cumulative effect of mechanical or metabolic overload, decreasing muscle performance in subjects with LE[6)].

Despite its common name, tennis elbow is also an occupational hazard for subjects other than athletes, primarily computer users, cooks, bricklayers, and other occupations that require repeated contraction of the extensor