

팔씨름중 발생한 상완부 간부 골절: 표면 근전도를 이용한 어깨 주위 근육의 근전도 분석

Department of Orthopaedic Surgery, *Department of

In-Ho Jeon, Byung-Jin Song, Chul-Hyung Kim*, Hee-S

서론

Humeral shaft fractures during arm wrestling are rarely reported in the literature. We experienced three cases of spiral fracture of the humeral shaft during arm wrestling and this study aimed to examine the shoulder muscle activity patterns using surface EMG.

재료 및 방법

Ten male university students completed four trials. Surface EMG electrodes were used to monitor the deltoid (D), pectoralis major (PM), triceps (T), and brachialis (B) muscles. Average EMG levels during each phase of arm wrestling for each muscle were analysed.

결과

No major differences in the brachialis and triceps muscle activation pattern between the winners and the losers. Deltoid and pectoralis major muscles were more active in the winners compared to losers. Deltoid and Pectoralis major muscle activity pattern in the loser showed dramatic decrease in the critical period compared to that of the winners. Significant difference between sitting and half standing position in the muscle activities of the pectoralis major (1.3~2.0 times) and deltoid muscles (1.5-3 times). The co-activation of deltoid muscle may help to stabilise the shoulder during neutral and winning phase.

결론

The results showed the sudden fatigue of strong shoulder internal rotator and stabilizer against external rotation force might influence twisting torque in the distal humerus during arm wrestling with its geometric changes.