

THERAPEUTIC EXERCISES FOR DEVELOPMENT OF DYNAMIC STABILITY AFTER ELBOW DYSLOKATION

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Recent investigations shows that the main anatomical structures that provide stability in the frontal plane of the elbow are the medial and lateral collateral ligaments. Many cases of injury of one of these structures during trauma lead to elbow instability, which limit the ability of a person for sport activity, both for professional and recreational reasons. If there is significant instability due to complete rupture of one of these ligaments, surgical treatment will be provide for recovering the stability of the elbow. But if there is moderate or minimal instability (5 -10°) most of the surgeons state that there is no indication for surgery. That's why the only possible treatment of these conditions is an adequate therapeutic exercise program for developing compensatory muscle stabilization. The main purpose of this article is to evaluate the results of our concept for development of compensatory muscle stability of the elbow.

Subjects

Twenty-nine persons with elbow dislocation treated nonsurgical in the past two years are evaluated.

Methods

All the patients were evaluated 10 days and 6 months after the the removal of the immobilization. Between these two evaluations the patients were treated with our therapeutic exercise program both for restoring the normal range of motion and for development the active muscle stabilization of the elbow. We used the following testing procedures: manual muscle testing (Janda, 1957), test for ligamentous laxity of the elbow (Regan, 1991), functional rating index (Morrey, 1985) and subjective assessment of the feeling of instability and pain. Standard statistical tests (students T-test, ANOVA) were used to determine significant differences ($p < 0.001$).

Therapeutic exercise programm

Our therapeutic exercise program is based on a gradual development of the muscle control and stability in the elbow using rhythmic stabilization both in open and closed kinetic chain. The patients have passed five months physical therapy training program after restoring the functional range of motion:

Multiple-angle rhythmic stabilization (isometric contractions at multiple points in the ROM) for the elbow joint. Progression by increasing the resistance and increasing the speed of changing the direction of the resistance

Multiple-angle rhythmic stabilization in all planes for the shoulder with putting the manual resistance distally from the elbow. Progression as described above.

Manual resistance in diagonal extension and diagonal flexion pattern for the affected extremity.