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REHABILITATION OF POST-TRAUMATIC DEFORMITIES OF THE UPPER EXTREMITIES

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Introduction: Rehabilitation of the upper extremities after injury is a complex process aimed at restoring the functions of the arm and shoulder girdle. The main methods include physical therapy, manual therapy, massage, physiotherapy, mechanotherapy, as well as psychotherapy to support the psychological state of the patient. The effectiveness of rehabilitation depends on an individual approach to each case, the regularity of the procedures and the active participation of the patient in the recovery process. It is important to start rehabilitation activities as early as possible after an injury and follow the recommendations of specialists to achieve the best results.

After injuries, orthopedic and neurological diseases, 75% of patients with shoulder joint pathology need adequate prosthetic orthopedic correction.

Keywords:Rehabilitation, shoulder joint, bandage, deformation, treatment, correction.

Introduction. After injuries, orthopedic and neurological diseases, 75% of patients with shoulder joint pathology need adequate prosthetic orthopedic correction.

Goal. To develop a brace on the shoulder joint to correct deformity of the upper limb. To evaluate the dynamics of pain syndrome when applying a bandage using a visual analog pain scale (VAS) and the amplitude of movements in the shoulder joint.

Materials and methods. In 32 people, a modified bandage was used to correct deformity of the upper limb during the restorative treatment of motor disorders after injuries and diseases of the upper limb. When using a bandage, the dynamics of pain syndrome was assessed using a visual analog pain scale and the amplitude of movements in the shoulder joint.

Results and discussion. A bandage was used to correct motor disorders. The prototype of the developed model was elastic bandage on the shoulder joint. It consisted of a sleeve made of an elastic neoprene material covering the shoulder joint from behind and in front, the upper third of the shoulder and the upper arm. The disadvantage of this design was the lack of individual adjustment

of the degree of fixation, which led to a gradual decrease in stabilization and the appearance of pain

syndrome during movements in the shoulder joint.

The modified bandage was fixed to the chest and shoulder joint using a textile belt starting from the dorsal lobe of the bandage, passing through the opposite axillary area and attached to the front lobe of the bandage with a "Contact" fastener. The developed version of the bandage had new design solutions, contributed to improving the effectiveness of stabilization of the shoulder joint, reducing pain, preventing the formation of arthropathies and deformities of the shoulder joint. The specified result. It was achieved using a design consisting of a sleeve covering the shoulder joint,

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having dorsal and anterior surfaces made of elastic material. The descending part of the cloth belt holding the bandage extended from the dorsal lobe of the sleeve. Next, the belt passed through the opposite axillary area, then its ascending part was attached to the anterior (ventral) lobe of the sleeve using a textile fastener. The bandage was used to form the physiological position of the limb, to ensure adequate correction of the shoulder joint with its instability and sprains of the joint capsule.

The sleeve of the bandage is made of elastic material, for example, neoprene, tricor, orthoprene, etc. There is an anterior (ventral lobe) and posterior (dorsal lobe) surfaces. The bandage is located above the deltoid muscle covering the shoulder joint in front, behind, above and laterally. A textile belt holding the bandage departs from the dorsal lobe of the bandage, which is attached with a textile fastener, for example, "Contact" to the ventral lobe of the bandage.

Two metal rings are sewn to the front and back surfaces of the distal part of the sleeve, covering the upper third of the shoulder. The third metal ring is sewn to the bandage in the area of the upper arm. Two non-stretchable textile cords are attached to the two lower rings . Both cords rise up separately along the front and back surfaces of the upper third of the shoulder. In the future, the cords pass through the third ring in the area of the upper arm, after which they are attached together on the front surface of the chest to the ascending part of the belt holding the bandage with the help of a special plastic lock with the possibility of individually adjusting the degree of tension of both cords. The distal part of the sleeve can be equipped with an additional fastening with a "Contact" fastener. What is new in the device is that two metal rings are sewn to the front and back surfaces of the distal part of the sleeve, covering the upper third of the shoulder . The third metal ring is sewn to the bandage in the area of the upper arm. Two non-stretchable textile cords are attached to the two lower rings. Both cords rise up separately along the front and back surfaces of the upper third of the shoulder, then pass through the third ring in the area of the upper arm, after which they are attached together on the front surface of the chest to the ascending part of the belt holding the bandage with a special plastic lock.

The degree of tension of both cords is adjusted individually, which ensures a constant dosed stabilizing effect. The device was used as follows: the distal part of the bandage sleeve was positioned above the shoulder joint. Textile belt extending from the posterior lobe was passed through the opposite axillary region and fixed with a textile fastener to the ventral lobe of the bandage. Textile cords passing through a metal ring were fixed on the front surface of the chest to the ascending part of the belt holding the bandage using a special plastic lock.

The degree of tension of the cords was adjusted individually by a plastic lock mechanism, which made it possible to reduce the stretching of the shoulder joint capsule by tightening the distal part of the sleeve together with the upper limb to the shoulder joint, create additional compression in the shoulder joint and provide additional stabilization.

The effectiveness of the use of the bandage was assessed taking into account the dynamics of the intensity of the pain syndrome. If, before treatment , the intensity of pain in the shoulder joint reached 7.0 ± 0.5 points, then after 3 weeks it decreased by half, amounting to 3.5 ± 0.25 points. The extension in the right shoulder joint has improved by more than a third.

Conclusions

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1. The developed brace for the shoulder joint has an individual adjustment of the degree of fixation, increases the effectiveness of stabilization, reduces pain, and helps prevent the formation of arthropathy and deformity.

2. The improved bandage contains new technical solutions for operation, plays an important role in achieving positive results in the treatment of deformities of the upper extremities, has the specifics of functionally oriented correction.

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