THE LOWER LEG IN INFECTED CHILDREN MORPHOFUNCTIONAL CHARACTERISTICS OF THE CONDITION

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Relevance: The minimum height of women is 152 sm, in some trodes – 147 sm. According to medical standards, the normal height for women and men is not less than 150 sm and 167 sm, respectively. According to the standards of modern society for a successful career and the opinions of others, the growth of women and men should be much higher.

People of average and slightly above average height usually do not pay much attention to their height, but those whose height is below average often attribute their height to physical affluence, experiencing, in this regard, constant psycho-emotional tension, attempts to increase growth with the help of hormonal drugs, physical exercises did not bring the proper result. The problem of increasing human growth found its radical technical solution in the second half of the last century thanks to the discovery by G.A. Ilizarov of the general biological tacon "tension tension. The history of the distraction esteosynthesis method has several evolutionary stages. For a long time, the main attention was paid to equalizing the length of the limbs in patients with shortening of one limb.

In children and adolescents with achondroplasia, the elongation reserve is primarily associated with the presence of age-related features - prolonged heterochronous morphofunctional maturation of muscle tissue, which creates good prerequisites for muscle adaptation at various stages of the rehabilitation process when using BCD; with the presence of a reserve reserve on the part of the soft-tissue component; the reserve reserve during repeated elongation of segments is determined by recovery processes, occurring during the rehabilitation period in soft tissues.

These reserve capabilities on the part of soft tissues, as well as significant technical achievements of the CCDO, create a unique opportunity to extend the segments of the lower extremities by large amounts and obtain good functional outcomes. More complicated is the question of the availability of reserve opportunities for leg lengthening in adults of practically healthy people with "subjectively low or insufficient growth". Reliability of functioning of biological systems is one of the principles of individual development. It is based on such properties of a living system as redundancy of its elements, their duplication and interchangeability, speed of return to relative constancy and dynamism of individual parts of the system. And, if at the early stages of postnatal life a rigid, genetically determined interaction of individual elements of the functional system prevails, then with the improvement of the central mechanisms of regulation and control, plastic connections that create for become increasingly important. -dynamic selective organization of system components.

Modern ultrasound research methods allowed us to evaluate the features of reparative activity, topography and parameters of the visualized vessels of distraction regenerate, as well as the condition of the main vessels during elongation of the segments of the lower extremities in patients with achondroplasia and in patients with "subjectively low or insufficient growth" at various stages of treatment. The effect of limb segment elongation on microcirculation in patients with

achondroplasia and in patients with "subjectively low or insufficient growth" was investigated. Metabolic features of tissues in patients with achondroplasia and in patients with "subjectively low or insufficient growth" at various stages of the rehabilitation process are shown. For the first time, both general patterns and differences characteristic of structural changes in the muscles of the segments of the lower extremities in patients with achondroplasia and in patients with "subjectively low or insufficient growth" at various stages of functional rehabilitation were established.

The assessment of the muscles of the elongated segment made it possible to assess the preservation or exhaustion of their structural reserve, to select adequate rates, values of elongation, which subsequently largely determined the functional state of the locomotor apparatus as a whole. As a result of a comprehensive assessment of peripheral blood circulation by ultrasound Dopplerography and microcirculation using laser Doppler flowmetry, as well as transcutaneous determination of oxygen and carbon dioxide stress, it was shown that with adequate use of the CCDO technique, ischemic disorders in the tissues of the lower limb were not detected.

With increasing age of patients, there is a decrease in relative, and after the end of the period of natural longitudinal growth of the body, and absolute reserves of limb muscle growth. An even greater decrease is observed after the first stage of surgical limb lengthening. Functional reserves of contractility of the anterior muscle group of the lower leg in patients with achondroplasia are preserved with elongation of the lower leg up to 9-10 cm, in patients with subjectively insufficient growth - up to 5-6 cm. Based on the analysis of echo signs, 3 main types of reparative activity of bone distraction regenerate were identified. Type 1 with rapid activity is characteristic of sick children with achondroplasia, type 2 is characterized by zonal formation of distraction regenerate. Type 3 with a decrease or absence of newly formed hyperechogenic structures in the intermediate zone of the regenerate, the presence of cystic structures is characteristic of repeated elongation of limb segments in patients with achondroplasia and in the treatment of patients older than 35 years with "subjectively low or insufficient growth". When scanning the distraction regenerate in the energy Doppler and color Doppler mapping modes, single vessels are visualized at the beginning of distraction.

Conclusions

Using the ultrasound method, the structural features of the formation of the musculoskeletal system in children and adolescents are shown, it is established that after the completion of the pubertal growth spurt, the bundles of muscle fibers acquire a characteristic orientation, the subchondral plate of the femoral head, the tibia acquire a smooth homogeneous contour with a minimum number of lumpy inclusions.

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