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ulnar nerve is closely related to age. The level at which the deep branch of the ulnar nerve departs shifts proximally with age: in fetuses, it is located at the area of the hook of the hamate bone or at the level of the hook of this bone, reaching the pisiform bone in individuals of adolescent age.

Conclusion. The results of the research provide the opportunity to more accurately navigate the syntopy of anatomical structures, particularly on the ulnar and radial sides of the hand. The characteristics of the relationships between the studied structures create important landmarks for surgical interventions and determine the feasibility of using the Henry approach, which minimises trauma to the vascular-nervous complex in this area.

FEATURES OF THE DISTRIBUTION OF PEANUT LECTIN RECEPTORS ON REGENERATED CELLS IN RATS WITH SIMULATED FRACTURES USING IMPLANTS MADE OF DIFFERENT MATERIALS

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Background. Lectin receptors include carbohydrate-containing biopolymer molecules of cells and extracellular matrix that are capable of selectively interacting with lectins to form lectin-receptor complexes. Due to these properties, lectins play an important role in cell recognition and intercellular interaction processes. Lectins are involved in inflammatory processes. Determining the histotopography of lectin receptors and its changes allows us to establish the dynamics of morphogenesis, immune response, and intercellular interactions in tissues.

Objective: the aim of the study was to establish the characteristics and dynamics of the distribution of peanut lectin receptors on regenerated cells in rats with a modeled fracture using implants made of different materials.

Methods. The study examined the regenerated tibia of 48 white rats. The animals were divided into 4 groups of 6 each. The experimental three groups included 36 rats with a simulated tibial fracture with intramedullary implantation of implants made of different materials (group 1 – carbon composite, group 2 – magnesium alloy MS-10, group 3 – medical stainless steel). Group 4 consisted of control rats that underwent incomplete transverse diaphyseal fracture modeling without intramedullary fixation. The study was conducted on days 7 and 14. The removed bones were fixed in 10% formalin with subsequent decalcification, dehydration in an ascending alcohol battery, and poured into paraffin. Histological preparations were made. To detect carbohydrate residues β -D-Gal receptors, a lectin histochemical reaction was performed with peanut lectin (PNA) produced by Lektintest (Lviv). The results were evaluated using a semi-quantitative method. Results and discussion. The nature of changes in the density of receptors for β -D-Gal residues in connective tissue elements of regenerated bone tissue in rats with intramedullary implantation of implants made of different materials was established.

Results: the highest density of receptors for peanut lectin (PNA) was observed on

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lymphocytes and connective tissue cells of the regenerate in animals with intramedullary implantation of carbon-carbon composite and magnesium alloy, indicating a pronounced reaction from the immune system. **Conclusions:** The nature of changes in the density of receptors for β -D-Gal residues in connective tissue elements of bone tissue regenerate in rats with intramedullary implantation of different materials was established. The highest density of receptors to peanut lectin (PNA) was observed on lymphocytes and connective tissue cells of the regenerate in animals with intramedullary implantation of carbon-carbon composite and magnesium alloy, indicating a pronounced immune system response.

REMODELLING OF BONE STUMPS UNDER THE INFLUENCE OF VARIOUS MECHANICAL LOAD REGIMES

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Relevance. Despite the long history of limb amputation surgery, the timing and magnitude of mechanical loading of stumps have not yet been clarified.

The aim of the study was to investigate the optimal timing and magnitude of mechanical loading of bone stumps after amputation.

Methods. Two series of experiments were conducted on 18 rabbits with amputation of the thigh in the middle third and myoplasty. In the control series, after 4, 8, and 16 weeks, cyclic mechanical loading was applied to the end of the bone stump with an energy of 0.5 mJ/mm² at a frequency of 2 Hz, with 400 pulses per session. In the experimental series, at the same time intervals, the load was applied twice a day at 200 pulses per session. The observation periods were 6, 10, and 18 weeks. The research method was histological with vessel filling with a 10% gelatin mixture.

Results. In the control series, most experiments showed pathological remodelling of bone tissue with the development of atrophy, bone shape distortion, bone curvature, and stress fractures. In the experimental series, organotypic stumps were formed with normalisation of structure and microcirculation. The best results of bone tissue remodelling were obtained in the series with the onset of mechanical loads in both series at 10 weeks, 8 weeks after amputation.

Conclusion. Mechanical daily loading of the bone stump with energy of 0.5 mJ/mm², frequency of 2 Hz, with 400 pulses per session at 4, 8, and 16 weeks causes significant disturbances in bone remodelling with the formation of cone-shaped and spindle-shaped stumps, deviation of the end from the axis, and stress fractures. The same load (0.5 mJ/mm², frequency 2 Hz, 400 pulses) divided into two sessions per day of 200 pulses with an interval of 4 hours contributes to the formation of an organotypic cylindrical shape of the stump with a balance of resorptive and reparative processes. The start of mechanical loads 8 weeks after amputation does not cause significant disturbances in the remodelling of the bone tissue of the stump and is the most optimal.