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INTERRELATION BETWEEN ARTERIES AND NERVES OF HUMAN'S PERICARDIUM

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Background. Analysis of morphological peculiarities of the nerve and pericardial arterial channel is practically significant, because considerably developed nerve cord and abundant intra-organ vasculature around the heartbag are often used in the clinic when applying surgical methods of curing coronary insufficiency.

Results. Having studied pericardium's out-of-organ nerves- diaphragmatic nerves, in particular, we've detected its' highest concentration zones; locations, where penetration in pericardial wall usually takes place; connections with other nerves and chest cavity's autonomic plexuses. It is shown that most of the diaphragmatic nerves' branches join the pericardium from the front to the roots of lungs. In upper sections of this zone pericardium is joined by large isolated branches of those nerves, and in lower sections there are much more of those nerves, though they're all small-sized. Vagus nerves' branches join the pericardium predominantly in the area of tracheal bifurcation and penetrate its wall within the limits of back transitional crease and lower. Sympathetic trunks' branches were detected from the left side, on the right corresponding branches join the pericardium along with periarterial plexuses. Having analysed pericardium's macromicroscopical compounds, we are now able to distinguish two plexuses in the intra-otgan pericardial proprioceptor. These plexuses are connected with one another due to intense ribbons exchange. In consideration of issue of neurovascular interrelation one should pay more attention to pericardial arterial channel's peculiarities. We've studied the pericardial arterial system, which is characterized by numerous extracardiac anastomotic connections with surrounding tissues' and organs' vessels. The main sources of out-of-organ collateral vascular pericardial channel's formation are pericardiophrenic, thymus, mediastinal and phrenic branches of internal thoracic [internal mammary] artery, and also bronchial and esophageal thoracic artery branches. Pericardiac folds are "the gates" for extracardiac branches' entry, because under pathologic conditions the blood courses through these folds and can reach different ischemic pericardial sections. Interrelation between neural stipes and blood vessels is characterized by utmost instability. The instability is caused by the process of blood vessels' fission: the similarity of their topography and the following fission are not always distinctly showed. Nerve fibers are connected with the vessel wall both as ones that innervate it and ones that go as transit. Circumvascular nerves form thick perivascular plexuses around the blood vessels.

Conclusions. The results of our monitoring indicate that there's a thick neurovascular rete in the pericardium. individual neural trunks often follow the vessels for a long period of time. The other ones, tracking the vessels, leave them and scatter across the connective tissue. These relations of vascular and neural; element form a web system, mostly developed in lower part of front-side pericardial surface, which matches the area of heart's apex. Neurovascular plexuses of the deep layer, in comparison with superficial ones , are situated more uniformly over the pericardium's surface. These plexuses are rich with vascular and nervous componentry, but it is significantly inferior to superficial layer's plexuses.

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MYELINIC FIBERS

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Background. Knowledge about peculiarities of inside-trunk structure of intramuscular and outside-muscular shin's nerves and its myeloarchitectonics is of a great importance due to the improvements of microsurgicaltechnology.

Results. Analysis of myelinic fibers' quantity changesshows that the number of fine fibers in nerves of all the studied muscles increases up to the end of the infancy period. at a later date its number decreases, and from juvenile age comes stabilization.Whileinfancy an averagemyelinic fibers' quantitative indexesare three or four times higher than for newborns; in follow-up age groups fibers' quantity incrementreduces (from 1,2 to 1,4 less) and in the period of adolescence it reaches theupper bound. Close to the end of the infancy period the quantity of thick myelinic fibersare 8-14 times bigger than for newborns. Infollowingage groupsthese fibers quantityincreases less considerably. This group's fibers quantity stabilization takes place at the beginning of the acme. Very thick myelinic fibers infinger-flexors' and hallux's nervesshow upin the period of infancy. It should be noted thatthe quantity of these myelinic fibers in muscle-flexors' nerves increase with much higher rate than in muscle-extensors' nerves Thus there is a number of peculiarities in age-relateddynamics of muscles' nerves myelinogenetic.

Conclusions. The findings about similarity in myelinic fibers' ratio in the antagonistic muscles' nerves can become an additional morphological criterionwhile studying receptor innervation (on nervous system different levels), which has an essential meaning in human's motor apparatus work. Innerveirrelation in shin's antagonistic musclesarouse interest for a clinic as well.

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INSULIN AND GLUCAGON EXPRESSION IN RAT`S PANCREAS DURING ALLOXANDIABETES

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Introduction. Hyperglycemia during diabetes mellitus type I is developing because of lack of insulin level in blood, which is produced by B-cells in islets of Langerhance. Whereas nowdays it is unknown how A-cells, which produce the antagonist of insulin- glucagon, react on the hyperglycemia.

Aim. That's why the aim of our study was to study the dynamic of insulin and glucagon expression in islets of Langerhance in rats pancreas during the alloxan diabetes.