

in order to optimize the process of choosing a medical device. Developing a decision support system is one of the ways to solve the current problem of lack of a medical device management system and to improve health care.

It is worth noting that the medical devices market is growing. For example, only in Germany there are more than 170 manufactures of medical devices. How do doctors choose which one to buy when there is such a diversity of medical devices? Medical devices are often chosen for their technical attributes. Marketing politic of the seller or physician preferences also influence the decision. But there are a lot of problems to choosing and buying a medical device.

One of the major obstacles to rational choosing of a medical device is innovation. The fact that this particular medical device is innovative can influence the decision. The specialist does not always consider whether this technology will be used in the hospital. The second important barrier to choosing a medical device is the lack of adequate information. The marketing and selling specialists try to show the best options of the device. So sometimes it can be difficult for decision-makers to compare the analogues medical devices reasonably. Moreover, the post-market surveillance systems which are the way to follow-up on the safety and effectiveness of a device do not function properly. The third problem that decision-makers face when they want to choose the medical device rationally is the high costs of it. Not only are the medical devices expensive, there are also hidden costs such as costs of accessory options, years of warranty, installation, procedures and recurrent costs for maintenance, spare parts, consumables etc. In addition, the doctor often chooses the medical device according to his preferences and previous experience. This choice may not be rational.

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REACTIVE CHANGES AND FEATURES REPARATIVE REGENERATION MYOMETRIUM LOWER UTERINE SEGMENT DUE TO ITS EXTENSION

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The regenerative ultrastructural changes in lower uterine segment myocytes have been investigated with phase contrast and electron microscopic examinations after experimental dilatation. The myometrial myocytes damage provocation takes place unevenly after lower uterine segment dilata-

tion. The fibrous connective tissue synthesis starts during the reparative regeneration, it leads to hysto-architectonics disruption and local myometrium dysfunction. The fibrillar structures synthesis in intercellular substance is carried out by phenotypic smooth muscle type transformation from contractile to "Synthesizing". Smooth muscle cells are not involved in cell proliferation. The myocytes intracellular regeneration takes place in lower uterine segment.

Introduction. A visceral muscle tissues study that form the hollow organs walls and various sphincters, is the most actually and poorly known [3]. There is no common understanding between pathologists and obstetricians about morphological and functional features of the lower uterine segment [4]. There is opinion that the lower uterine segment sphincter performs the obturator function of pregnancy cervix, also it has an indicator function in progress of abnormal occurrences in parturition [2, 5]. In addition, the lower uterine segment postpartum restoration forms a full barrier for ascending infection progress. The lower uterine segment traumatic injuries in obstetric practice which occurred after violent expansion of the cervical canal in induced abortions and diagnostic curettage, promote lower uterine segment functional insufficiency in pregnancy and have the adversely affect birth outcomes. It is necessary to develop the methods for correction the caudal uterus functional insufficiency after injury in the absence of morphological evidence, so we determined the purpose of our research [1, 6].

The purpose of present study was to research reparative regeneration in rat functionally important lower uterine segment myometrium after tension in experiment.

First we have to simulate the rat lower uterine segment stretching, also we have to characterize the myometrium myocytes lesions in lower uterine segment after experimental tensile, at last we have to find the leading mechanisms of myometrium reparative regeneration for achievement.

Materials and methods. Thirty nulliparous mature white rats were used. The remaining intact rats were used as controls. "Rules to the Use of Animals in Research" were used in present experiment. The lower uterine segment was extended with the rat under Aether anesthesia. All the rats of the experiment group were killed under anesthesia using Aether. The materials were examined on third, seventh, tenth, fifteenth, twenty first days, that's why the materials were fixed in glutaraldehyde, filled with Araldite-Epon mixture, then the materials were contrasted with uranyl acetate and lead citrate. Semithin and ultrathin sections were prepared. We used phase contrast and transmission electron microscopy.

Results and discussion. The uterus lower segment stretching leads to uneven smooth muscle tissue damages in myometrium. Some myocytes in functional syncytium retained their structure,

other myocytes have dystrophic and necrotizing changes on the third day after injury (Fig. 1). The cytoplasmic matrix compaction took a place in myocytes. Nuclei were found at different stages of cell death. The cisterns of sarcoplasmic reticulum are expanded, parietal located caveolae particularly affected. Myocyte mitochondria are swollen, it leads to partial or total crist destruction. The number of specific organelles is purposed. Myocyte membranes are violated – it leads to destruction of intercellular interactions. Well known, there are two main leyo-myocyte types of cell-cell junctions: mechanical (desmosomes) and functional (nexuses). There are preserved myocytes, which are visualized in the damaged lower uterine segment on 7–10 days after injury. Myofibrils decrease and free ribosomes and polysomes increase due to the development of granular endoplasmic reticulum are observed in preserved myocytes cytoplasm. This means that myocyte phenotype has changed from contractile to synthesize.

Intercellular spaces are expanded on the third day after lower uterine segment stretching. First, it is caused by interstitial edema and collagen stimulation by reactive inflammation cells. Then extracellular matrix is produced around cells since seventh till twenty first day after stretching. Intercellular spaces are filled with protein masses with fibril-

lar structure, which assembled into the fibers. The cells are packed in fibrillar matrix, their contacts are violated. Probably, these structural changes lead to myometrium dysfunction.

The fibrous connective tissue density is increased on twenty first day after stretching. There are cell location and newly formed fibers orientation disruption visualized in myometrium. (Fig. 2, 3).

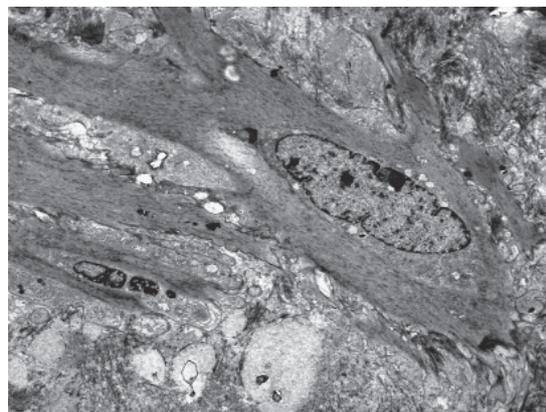


Fig. 1. Lower uterine segment on third day after injury. Preserved leyo-myocyte. TEM. 1000X

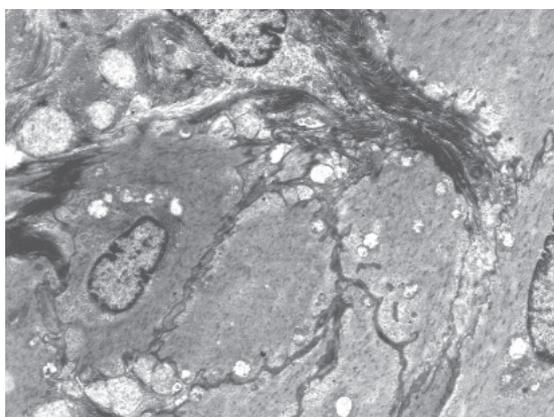


Fig. 2. Lower uterine segment on 21 day after injury. The fibril-forming interstitial collagen. UTEM. 1200X

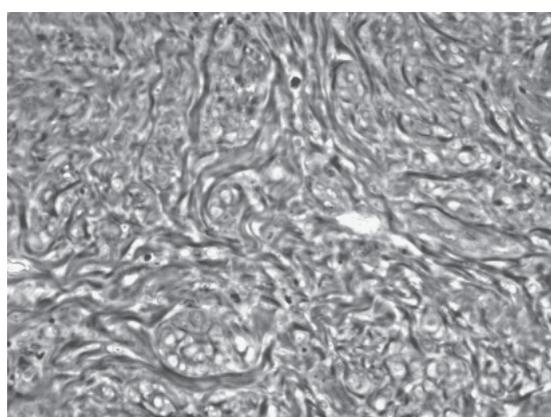


Fig. 3. Lower uterine segment on 21 day after injury. The collagenous fibers in myometrium. Phase-contrast microscopy. 1200X

There were no found myocytes mitosis during the whole period of observation.

So, we have found diffuse changes in myometrium after uterus lower segment stretching. The intracellular regeneration has taken a place in myometrium. We have found the myocyte phenotype transformation from contractile to synthesize. The myocytes synthesize extracellular fibril-forming collagen matrix. The cells are packed in fibrillar matrix, their contacts are violated. These structural changes lead to myometrium dysfunction

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TRAUMATISM AT CHILDREN OF THE REPUBLIC OF SAKHA (YAKUTIA)

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Traumatized by the child can lead to serious consequences, and sometimes and to death. Quite often trauma got in the childhood, becomes the reason of permanent functional violations in an organism. So, changes can lead to a curvature or extremity shortening. The hems remaining after burns, pull together joints, limiting their mobility. Insufficient physical activity of fingers owing to wound of a brush limits subsequently choice of profession. After concussion affected many years complain of headaches, sleeplessness, bad memory, impossibility to concentrate [1, 2].

In prevention of children's traumatism adults have to consider constantly features of development and behavior of the child of early age.

Work purpose: To study dynamics of traumas of various etiology at children of Republic of Sakha (Yakutia).

Materials and methods. We analysed the reports of reception and diagnostic office of National Centre over the last 5 years.

Results of research. Growth of number of traumas of various etiology at children in the Republic of Sakha (Yakutia) over the last 5 years is noted. So, indicators of home accidents of 2009 made the 3477th child, for 2013 5037 children addressed with home accidents already. From among addressed, children who demand medical care and supervision are hospitalized. In the Republic of Sakha (Yakutia) increase of number of a beating among children over the last 5 years is noted. In 2009 are hospitalized with a beating in National Centre – 78 patients (57,9%), in 2010 of – 113 children, in 2011 – 73 children, in 2012 – 91 child, in 2013 – 89 children. Seasonality of the bitten traumas is noted during the summer period (June-July-August).

Unfortunately, scheduled maintenance on the prevention of traumas at children in the Republic of Sakha (Yakutia) is insufficient. Further, carrying out preventive actions (work with parents and teachers) is necessary.

Conclusions

1. Growth of quantity of traumas at children in Republic of Sakha (Yakutia) is over the last 5 years noted.

2. It is necessary introduction and development of programs of the prevention of traumatism at children at schools, to training of teachers in first-aid treatment in children with traumas.

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