3. The use of reflexotherapy by virtue of their mechanism of action contributes to the restoration of the regulating role of the central nervous system and leads to optimization of the functioning of the vegetative, immune and endocrine systems. The most effective is the combination of drug and non-pharmacological methods of treatment.

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PATHOGENETIC APPROACHES IN THE PREVENTION OF SURGICAL INFECTIONS AND TREATMENT OF GUNSHOT WOUNDS

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✓ ***Resume,***

Experimental studies on the pharmacokinetics of gentamicin were performed on 40 rabbits with various methods of injection after the infliction of gunshot wounds on extremities. The results showed that the method of lymphotropic antibiotic therapy provides a more stable and long-term saturation of blood. The highest and the longest retaining concentration of gentamicin in the lymph nodes and soft tissue of gunshot wounds is reached at lymphotropic method of injection.

Keywords: gunshot wound, lymphatic antibiotic therapy, antibiotics pharmacokinetics.

ЎТ ОЧУВЧИ ҚУРОЛЛАРДАН ЖАРОҲАТЛАНИШДАН КЕЛИБ ЧИҚҚАН ЖАРОХАТ ИНФЕКЦИЯЛАРИГА ҚАРШИ КУРАШИШДА ПАТОГЕНЕТИК ЁНДАШУВ

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✓ ***Резюме,***

Изланишларимизни амалга ошириш учун гентамицин антибиотигини экспериментал текшириш учун олинган 50 та қуёнларда ўт очувчи қуроллардан жарохатланган органлар тўқимаси ва лимфа қаватларини морфологиясини электрон микроскопда ўргандик.

Олинган натижалар шуни кўрсатдики, зараланган лимфа тизими замонавий жарроҳлик усулида даволанганида сезиларли даражада қайта тикланиши, региональ лимфа стимуляцияси ортиши, жарохатнинг тез тикланиши даволашнинг 3 - кунидан бошлаб ўз самарасини кўрсатишига эришилди.

Калитсўзлар:ўточувчиқуроллардан жарохатланган яра, лимфатик антибактериал терапия,электрон микроскопия.

ПАТОГЕНЕТИЧЕСКИЕ ПОДХОДЫ В ПРЕДОТВРАЩЕНИИ ХИРУРГИЧЕСКИХ ИНФЕКЦИЙ И ЛЕЧЕНИИ ОГНЕСТРЕЛЬНЫХ РАНЕНИЯХ

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✓ ***Резюме,***

Мы провели экспериментальные исследования на 50 кроликах, где морфологически с помощью электронной микроскопии мы изучили изменения в тканях и лимфатическом слое с огнестрельным ранением.

Экспериментальные результаты показали, что после огнестрельного ранения лимфатическая система подвергается значительной реструктуризации, а региональная лимфатическая стимуляция способствует значительному ускорению процесса заживления ран на 3-й день после начала лечения.

Ключевые слова: огнестрельная рана, лимфотропная терапия, электронная микроскопия.

Topicality of research

We performed experimental studies on 50 rabbits, where morphologically using the electron microscopy, we studied the changes in the tissues and lymphatic bed with a gunshot injury. The experimental results showed that the lymphatic system undergoes a significant restructuring after a gunshot wound, and the regional

lymph stimulation contributes to a significant acceleration of the wound healing process by the 3rd day after the commencement of treatment.

In recent years, a gunshot wound is relevant not only in the field of military medicine, but also in the field of civilian health systems. There was a sharp increase in the number of gunshot injuries to the civil population in the world [2, 4].

Inevitable bacterial contamination of gunshot wounds, the destruction of tissue along the wound canal leads to a large number of septic complications, which requires constant improvement of treatment methods [2, 3, 4].

Despite the great experience of effective use of lymphotropic therapy in the treatment of purulent surgical infections [5], we found only sporadic works dedicated to this method in the prevention and treatment of wound infections in gunshot wounds [5].

Purpose of the study:

In this regard, the aim of our study was to determine experimentally the opportunity to influence the lymphotropic antibiotic therapy and regional lymph stimulation method on the healing of gunshot wounds.

Materials and methods

Experimental studies were carried out on 50 rabbits of both sexes with a weight of 5-6 kg and were led by professor Baybekova I.M. and held in the Central Scientific Research Laboratory of the AndijanStatedical Institute as well as in the Laboratory of Pathomorphology at the Republican Specialized Center of Surgery named after academician Vakhidov V.V. In the experiments we used a trial model of gunshot wounds. All the animals in experimental and control groups were injected kalipsol anesthesia fifteen minutes before the injury, after which they were fixed on special plates. Standard gunshot wounds of the soft tissues were applied to the region of the middle third of the right femur of the rabbit.

According to the tasks, the experimental animals were divided into two groups (Table 1).

Table 1.

The distribution of animals in research groups.

Animals	Method of treatment	Number of animals
Control	Traditional treatment of intramuscular antibiotic therapy	25
Study/Main	Lymphatic antibiotic therapy (LA) and Regional lymph stimulation (RLS)	25

Regional lymphatic therapy (RLT) was carried out by the following method. Under the skin of the calf on the border of the lower and middle thirds of the rear surface the lydasa (Hyaluronidasum) solution was injected in the amount of 16 units. After 4-5 minutes, without removing the needle, an antibiotic (gentamicin at a dose of 1 mg/kg) was injected. In the same section heparin at a dose of 70 units/kg was injected. Lymphotropic infusion of antibiotics with RLS was performed 1 time per day.

Experimental tissue samples were taken of the wound channel from the animals under anesthesia on the 1st, 3rd, 5th, 7th and 9th day after application of a gunshot wound.

The samples were subjected to light (LM), transmission electron (TEM) and scanning electron (SEM) microscopy. Samples were fixed in specific solutions, photography was performed on color film Kodak Professional Pro Foto 100 or FugicolorSuperia 100. Microphotos were obtained on a microscope "Axioscope" (Zeizz) with a digital camera "Sony", followed by computer processing on Intel Pentium IV with BC-Statistika, as well as Microsoft Office applications.

Discussion of results

The results showed that in the early stages there are no significant differences in the healing process between control and study groups.

Significant differences during wound healing, ascertained in SEM, TEM, and in light microscopy, begin to appear on the 3rd day from the beginning of the process. In the group of wounds, where lymph therapy was used, in the concussion zone the necrotic muscles were undergoing significant resorption, multinucleated giant cells, microvessels, such as blood and lymphatic. In the area of primary necrosis among fibrin the roundcellular individual elements and cells similar to fibrinoblast appeared (Fig. 1).

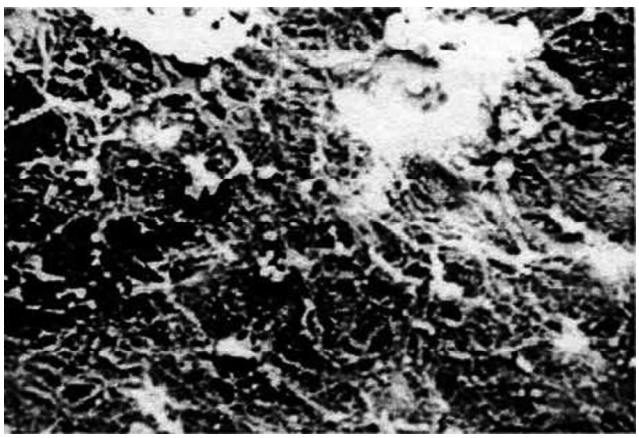

Fig. 1. Roundcellular individual elements and cells similar to fibrinoblast among fibrin. 3rd day. LT. SEM x 400.

At the 5th day in the lumen of the wound channel among the strands of fibrin the roundcellular elements with individual fibroblasts appeared, while in the area of

primary necrosis infiltrate, consisting of polymorphic cells, including macrophages, emerged. In the concussion zone between the preserved muscle libers the significant intervals are determined, which indicates the presence of edema. When comparing the results in the LA with RLS group, an increase in the number of blood and lymph vessels is indicated.

Since the 7th day from the beginning of the process in the group with RLT a significant initiation of granulation tissue remodeling her revascularization was noted.

According to the TEM of this period not only an extension of lymphatic capillaries was noted, but also the thinning of the cytoplasm of endotheliocvtes with the presence of small vesicles, indicating the strengthening of transport processes through the wall of the lymphatic capillaries, which is a structural reflection of the stimulation of lymphatic drainage under the influence of lymph therapy (Figure 2).

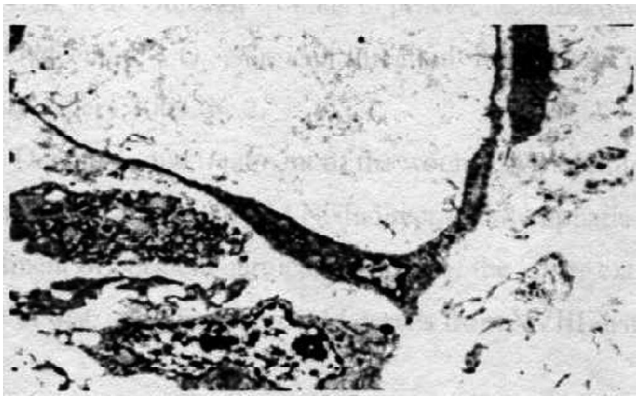

Fig. 2.Lymphatic capillary with extended clearance. 7th day after injure. LT TEM.x 7500.

On day 9.there are signs of replacement of scar tissue by muscle tissue, which was evidenced by the areas of fibrous connective tissue proliferation in the concussion area along with the already recovered libers.

Thus, the morphological picture suggests severe mosaic wound healing process in these terms, the comparative characteristics of two groups confirms that lymphatic therapy contributes to a significant antiinflammatory effect during the wound healing process.

Lymph therapy causes a well-expressed stimulation of neovasculogenesis of not only blood, but also of the lymphatic vessels.

This position requires the application of modern methods of lymphatic therapy, aimed at combating posttraumatic edema and infection.

Conclusions

Experimental studies have shown that lymphatic therapy accelerates wound healing, beginning with the 3rd day. it helps in the reduction of swelling, resorption of necrotic masses, removal of foreign particles and microbes, scarring of the wound channel and the full restoration of muscle fibers in the concussion zone and in tissues, which are more distant from the wound channel.

The use of lymphotropic therapy w ill allow successful usage of early primary surgical treatment of gunshot wounds and reduce the development of surgical infection.

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