**ODESA NATIONAL MEDICAL UNIVERSITY**

Chair\_\_ **Department of Surgery № 3 with the course of neurosurgery**

**METHODICAL INSTRUCTIONS**

from practical classes for students

Educational discipline «\_\_Surgery \_\_\_»

Lesson №\_1 5 \_ **Drug traumatic wounds.** **Primary and secondary surgical treatment of a gunshot wound.** »

Course \_\_4\_\_Faculty \_ Stomatological

Approved at the methodical meeting of the department

" 30 " \_\_\_ 08 \_\_\_\_201 6 g. Minutes №\_\_ 1 \_\_.

Head Department, professor A.S. Sleep

Odessa 2016

**TOPIC:** Gout wounds. Primary and secondary surgical treatment of a gunshot wound **.**

The number of academic hours is 2 .

**1. Relevance of the topic:**

      The problem of a gunshot wound remains one of the most urgent in military surgery.

Despite the accumulated considerable experience of large and small wars, the beginnings of combat conflicts have always been accompanied by typical mistakes in the provision of surgical care, in particular, in the technology of wound healing. This is due to the lack of knowledge of the majority of surgeons, including the characteristics of gunshot wounds, the theory of wound ballistics, the structure of gunshot wounds, as well as an individual approach to their general and local treatment. All this leads to adverse treatment outcomes for victims.

Over the past ten years, considerable experience has been gained in wounding modern firearms. New experimental data were obtained taking into account its improvement, features of anatomical and morphological changes in firearms and tactics of surgical treatment were revealed.

3. Objectives of the course:

3.1. General Objectives: / To familiarize yourself with the current definition ... /

- familiarize students with distribution, classification gunshot wounds - **I** ***level***

3.2. Educational goals: (to get acquainted with the contribution of domestic scientists in the study of ­ blum ...; be able to explain to the patient the need ... /

- To form a future specialist as a person taking into account demonological and professional responsibility .;

- to form deontological representations when working with patients with gunshot wounds , to master the ability to establish psychological contact with this category of patients and their relatives, to develop a sense of responsibility for the timeliness and correctness of professional activities.

3.3. Specific goals:

*- know:*

* Current views in the primary and vtoryna well to surgical treatment in gunshot wound
* Clinical and instrumental examinations of victims.
* Differential diagnostics.
* Indications and methods to claim ervynn first and vtoryna term processing and gunshot wound.
* Postoperative management of the victims. Possible postoperative complications.
* Expertise of working capacity of victims.

3.4. Based on theoretical knowledge on the topic:

*- mastering techniques / able /:*

* Skills, technique of execution: palpation, percussion, auscultation.
* Master the skills of execution Mr ervynn first and vtoryna term processing and gunshot wound.

4. Materials for pre-academic self-training (interdisciplinary integration).

|  |  |  |
| --- | --- | --- |
| Discipline | Know | Be able |
| Anatomy, topographical anatomy | Structure, syntope, skeletony of the chest organs.Anatomy of the abdominal cavity. The main veins of the neck and kestnokov. | Design a wound channel for subordinate internal organs. |
| Physiology | Wound process; phase wound process. Physiology of hemostasis. | To evaluate the features of a firearms wound |
| Pathological physiology | Pathophysiological changes in firearms damaged.Shock. |  |
| Propaedeutics of internal diseases | Clinical manifestations of a gunshot wound. | By clinical manifestations pre-diagnose the types of gunshot wounds. |
| Radiology | Principles of the use of basic X-ray methods (X-ray examination, X-ray, laryngeal, X-ray contrast study of the esophagus and stomach, pneumoperitoneonography, vulneurography). | Choose appropriate methods of X-ray examination in a particular situation. |
| General surgery | Aseptic, antiseptic. Types of anesthesia.Blockades for fractures of bones (species, choice of anesthetic, principles of performance). Types of drainage systems. Clinical, instrumental and laboratory diagnostics of internal bleeding, shock.Intensive therapy for bleeding, shock. Primary surgical treatment of wounds. | Put a bandage on a clean and purulent wound. Conduct infiltration anesthesia. Set the degree of blood loss. Appoint conservative therapy and formulate indications for surgical intervention in gunshot injuries. Assign shock therapy. |

**4. Contents of the lesson:**

*structural-logical scheme of the content of the theme;*

*Text content:*

**General principles of treatment of gunshot wounds** . Treatment of gunshot wounds of various localization is the task of qualified and specialized surgical care. A generalized model, which can consider the principles of treatment of gunshot wounds, is a bone and muscle wound inflicted with modern charges - high-speed low-caliber bullets and fragments of explosive ordnance.   
       The main objects of therapeutic influence during a gunshot wound are the zone of primary destruction (necrosis) of tissues and areas of secondary necrosis around it, as well as the microbial flora of the wound. From the first hours after the injury, along with anesthesia and the discontinuation of bleeding, it is necessary to provide conditions for self-cleaning the wound and to limit the spread of secondary non-fibrosis. Treatment begins with the overlay of the original bandage. The latter protects the wound from adverse effects of the external environment and from repeated microbial contamination, provides the outflow of the wound exudate with the partial removal of small elements of primary contamination. In case of large firearms, immobilization of the damaged is required

a segment that protects him from repeated traumatization.

The central component of the therapeutic effect is the surgical treatment of a gunshot wound. Most gunshot wounds are subject to early surgical treatment. Depending on the evidence, distinguish primary, secondary and secondary surgical treatment of wounds.

*Primary Surgical Treatment (PCO)* is the first surgical intervention that is performed on wounds for the purpose of removing non-viable tissues, preventing complications, and creating conditions for healing of the wound.

Indications for PCOS are: penetrating gunshot wounds of the skull, chest, abdomen, large joints, eyeball; ongoing bleeding from the wound; firearms of long tubular bones, large major vessels and nerve trunks; wounds contaminated by OR and PP or ground; wounds with massive damage to soft tissues.

Repeated surgical treatment of gunshot wounds is performed when the first interference for one reason or another was non-radical. Then there may be a need for re-intervention, which is usually performed before the clinical signs of the development of infectious complications, with the same initial indications. Consequently, re-surgical treatment is the second and subsequent surgical intervention that is performed with inferior NFP prior to the development of wound infection.

Secondary surgical treatment (VHO) is always carried out in the secondary indications, that is, in the case of complications (mainly infectious) that require additional factors for their development (active pathogenic microflora vegetting in the wound, etc.), which is not an indirect, but an indirect consequence of a gunshot trauma. Even if the surgical treatment performed on the secondary indications was the first surgical intervention, it essentially remains a secondary surgical treatment. If there is evidence for PCOS, then it should, if possible, be early and radical. Gunshot wounds, in which PCO wounds are not made, account for up to 30% of all gunshot wounds. Such cases include tangent, spotted, transverse, and blind wounds of soft tissues with small inlet diameters

and the outlets, without damage to the large vessels and nerves that do not penetrate the cavity, are not accompanied by gunshot fractures of the bones (except for so-called particle fractures) and significant contamination of the wound.

Early Nutrition is performed in the first day after injury. However, in real combat conditions, the wounded are delivered to the stage of qualified and specialized medical care, where surgical care may be provided, at a later date after injury. In connection with this, the PCO, which is made in 24-48 hours, is considered postponed, and after 48 hours it is late.

Under the radical definition of PHO, not only the breadth of excision of damaged tissues is understood, but the full implementation of all tasks of intervention, which depend on the nature of the damage and the timing of its implementation.

*In the summary, the general tasks of this operation are as follows:*

1. Sore wound, turning it into a kind of sparkling crater, with access to deep lesions of damage and providing the best conditions for biological self-purification processes.

2. Removal of all dead and clearly non-viable tissues, which is the medium of formation and distribution of cells of secondary necrosis in a circle of the canal due to autocatalytic enzymatic proteolysis.

3. Ensuring a thorough hemostasis with the removal of large intermucosal, intradermal and subfascial hematomas.

4. Removal of large foreign bodies and free bone grafts, deprived of food and capable of causing additional tissue injury.

5. Creation of optimal conditions for drainage of all branches of the wound channel

and inter-tissue "pockets".

6. Reconstruction of damaged similar structures (nerve septum, vessels, tendons, plastic vessels or tendons, overlapping of devices for external fixation during fire trauma of the limbs, various types of skin plastics, compliance with all these requirements determines the radicals of the PCO, during the operation, all elements of intervention are fully executed, which must be consistent with the pathogenetic concept of the wound process. However, this does not mean that radical surgical treatment is always final.

In accordance with the current military surgical doctrine, the deaf primary seam after the treatment of a gunshot wound is not superimposed. The imposition of primary seams on a wound with constant active drainage should be considered as an exception, admissible only with full surgical treatment, in the treatment of the wounded in stationary conditions under constant supervision of the operating surgeon. Exception is also the wounds of the face, head, external genitalia and wounds of the chest with open pneumothorax, for closing of which the primary suture is used. In the case of a forced delay in the PCO at a massive arrival of the wounded must

measures are being taken that restrict the spread of secondary necrosis and reduce the risk of developing infectious complications. To them, first of all, belongs the correct organization of medical sorting, in which the wounded who need surgical treatment in the first place are allocated: with prolonged bleeding, overhang, tears and large destruction of the limbs, signs of purulent or anaerobic infection. All other wounded with indications for surgical treatment provide primary surgical care to a limited extent. The main event in this case is infiltration in the wound range of 0.25% solution of novocaine and solutions.

antibiotics (preferably a broad spectrum of action).

Additionally, corrective infusion therapy is performed. According to the indications, they perform a wide subcutaneous fasciotomy and drain the deepest "pocket" wounds with the help of additional openings.   
**Features of PHO technique wounds** . Before surgical intervention, carefully examine the nature of the wound to determine the direction of the wound channel, the presence of damage to the bones, joints, large vessels and nerves. Depending on the expected volume of surgery, general or local anesthetic is used.

The skin is cut through the wound, and when through the fire guns - from the side of the inlet and outlet. Then it is economically cut out clearly illegible areas of the skin. The length of the cutaneous skin should provide adequate access to the treatment of the wound canal.

Next, aponeurosis is cut with additional incisions in the transverse direction at the angles of the wound so that the aponeurotic pouch does not squeeze the swollen muscles after the operation. The edges of the wound are bred with hooks and planted in a layer of non-viable muscles with cells of necrosis.The vitality of muscles is evaluated for their color, bleeding, ability to reduce and characteristic resistance (elasticity). Viable muscles retain active hemorrhage and the ability to reduce mechanical irritation. Carving non-viable fabrics, from the wound remove free-lying bodies, small bone fragments. It is not necessary to look for small bone fragments or charges in the side of the main wound canal, as this leads to additional traumatism of the tissues, an increase in the wound and, ultimately, to the creation

unfavorable conditions for its healing. If, when carving non-viable tissues, large vessels or nerve trunks are detected, they are carefully taken away in the direction of dull hooks. Fragments of the damaged bone are not treated, except for sharp edges, which can cause repeated traumatization of tissues.Muscles are imposed by the liquid seams to cover the nude bone to prevent wound osteomyelitis. Muscles should also cover nude vessels and nerves to avoid blood vessel thrombosis and death of nerve fibers.

The operation should be completed by tissue infiltration around the treated wound with antibiotic solutions and immobilization. If the PHO of the gunshot wound is carried out in stationary conditions in peacetime, where observation of the operating surgeon is possible, then postoperative treatment can be carried out in different variants, depending on the nature of the injury, the stage

the wound process, the volume of the performed operation and material support of the hospital.

In these conditions, with the complete removal of non-viable tissues, it is possible to impose the primary seam on the wound with the continuous flow or irrigation-aspiration vacuum drainage. In the latter case, use a double-drainage tube. In some hospitals there are devices for treating large wounds in a controlled abacterial environment.   
However, the most widespread and most accessible in war conditions is the treatment of wounds under the bandages.

The ultimate goal of treating the wound is always to heal it and restore the covering tissue. Secondary healing often becomes a lengthy process, so surgical methods for restoring the covering tissues are used at different stages of treatment. In 4-5 days after the operation, when the wound is cleaned, but no granulation tissue is present and there are no signs of wound infection, impose initial delayed seams. This is the most rational method of treating gunshot wounds in combat conditions. If the wound can be closed later (10-14 days after the PCO), when the granulation tissue is formed, then the initial secondary sutures are applied.

Sometimes it is not possible to seize the wound due to the fact that new sections of necrosis have been formed in it, and their rejection is delayed. Then in the wound is formed not only granulation, but also scar tissue, which before cutting the joints must be cut. After that, impose late secondary sutures (after 15-30 days). To close large wounds, one has to turn to various methods of skin plastic.

      Secondary surgical treatment (VHO) is always performed for secondary

zanes, that is, because of the complications (mostly infectious) that are needed for

its development of additional factors (actively vegetating in the wound of pathogenic microflora

etc.), which is not a direct but indirect consequence of a firearms injury. Even

if the surgical treatment, performed on secondary indications, became the first by

The account is surgically interrupted, it essentially remains secondary surgical

processing

If there is evidence for a PCB, then it should be at the earliest opportunity and

radical. Gunshot wounds, in which PCO wounds are not made, glass

give up to 30% of all gunshot wounds. Such cases include tangible,

"Spotted", transverse and blind wounds of soft tissues with small diameter of the incoming

and output holes, without damage to large vessels and nerves that do not penetrate into

cavities, not accompanied by gunshot fractures of bones (except for so-called

pitting fractures) and significant contamination of the wound.

      Early Nutrition is performed in the first day after injury. However, in real

the combat conditions of the wounded delivered to the stage of qualified and specialized

medical care, where surgical care can be provided, at a later date

after wounding In this regard, the PCO, which is made in 24-48 hours is considered

postponed, and after 48 hours - late.

Under the radicality of PCO understand not so much the width of the carving of the damaged

fabrics, how much does the full performance of all intervention tasks depend on

the nature of the damage and the timing of its implementation.

     In the summary, the general tasks of this operation are as follows:

1. Sore wound, turning it into a kind of sparkling crater, with access to

deep damage centers and ensuring the best conditions for processes

biological self-purification.

2. Removal of all dead and clearly viable tissues, which is an environment

the formation and distribution of secondary necrosis cells in the wound canal circle

as a result of autocatalytic enzymatic proteolysis.

3. Ensuring a careful hemostasis with the removal of large intermucosal,

intraperitoneal and subfascial hematomas.

4. Removal of large foreign bodies and free bone fragments without

Food and able to cause additional trauma to the tissues.

5. Creating optimal conditions for all branches draining wound channel

and interstitial "pockets".

6. Reconstruction of damaged similar structures (joint nerve, blood vessels, suho-

Gillet, plastic vessels or tendons, imposing external fixation devices

limbs with gunshot wounds, various skin plasty.

    Following all these requirements defines radical Pho. During the operation pov-

tions performed all elements of intervention that must meet pathogenetic

concept of wound healing. However, this does not mean that radical surgical treatment

there is always final.

    Under the current surgical military doctrine dead after primary suture

processing gunshot wound is not imposed. Imposing primary sutures to the wound with

active permanent drainage should be regarded as an exception, permissible

only when complete surgical treatment, the treatment of the wounded in a hospital

conditions under the constant supervision of the surgeon who operated. The exceptions are

also wound face, scalp, vulva and wounds on the chest

open pneumothorax, which is used to close the primary seam.

    In the event of a forced delay in mass Pho wounded must receive a

carried out measures to limit the spread of secondary necrosis and reduce

the risk of infectious complications. These primarily owned PRA-

Vilnia organization triage, where the wounded out that

require surgical treatment in the first place: with prolonged bleeding imposed

wiring, isolation and destruction of large limbs, signs of septic or anaerobic

infection. All other wounded with indications for surgical treatment of primary

surgical care is provided to a limited extent. The main event in this

if infiltration is wound around the circumference of 0.25% novocaine and solutions

antibiotics (preferably broad-spectrum).

       Also held Correcting infusion therapy. According to the testimony performing

extensive subcutaneous fastsiotomiyu and drain the deepest "pockets" wounds

With additional sections.

        Features Technology Pho wounds.

    Before surgery carefully study the nature of the wound with a view toward z'yasovuvannya wound Channel, the presence of damage to bones, joints, large vessels and nerves along. Depending on the intended scope of operations applicable general or local anesthesia.

Cut through skin through a wound, while through their gunshot wounds - from the inlet and outlet openings. Then sparingly carved ayut clearly viable areas of the skin. The length of the skin by opening must bezpechyty adequate access to treatment of the wound channel . Next, cut through the aponeurosis of additional cuts in the transverse direction ICU in the angles of the wound to aponevrotychnyy foot lyar not zdavlyuvav swollen muscles after surgery. The edges of the wound throw hooks and Mr Osharova Pig are viable muscle cells from necrosis. Sustainability muscle assessed by their color, blood tochyvistyu, the ability to reduce and resistance characteristic (elasticity).

      Viable muscles remain active bleeding the message and the ability to reduce under mechanical stimulation.

     Vysikayuchy viable tissue from the wound type alyayut foreign bodies freely lie small bone chips. Do not look for a smaller bone fragments or charges aside from the primary wound channel, because it leads to additional trauma tissue, increased wound and mo ntsevomu eventually to create unfavorable conditions for its healing. If the excision of nonviable tissue are large vessels or nerve trunks, their caution towards allocating blunt hooks. Fragments of damaged bones do not shave oblyayut except sharp ends that can lead to repeated injuries tion tissue. To impose muscles Liquid stitches to cover the exposed bone to prevent traumatic osteomyelitis.

      The muscles should also cover the exposed blood vessels and nerves to prevent thrombosis Court Ying and loss of nerve fibers. Operation must be completed infiltr atsiyeyu tissues around the treated wounds antibiotics and immobilization solutions.

   If Pho gunshot wound carried out in a hospital in peace time, where possible observation of operating surgeon and then postoperative treatment can be performed at different options, depending ve d nature of the damage phase of wound healing, the volume of executed transactions and financial security hospital.

     In these circumstances, the full removal of nonviable tissue may impose

primary suture the wound with conducting continuous flow or iryhatsiyno-

Vacuum aspiration drainage. In the latter case, use two-

Educational drainage tube. In some hospitals there are devices for the treatment of major

abacterial wounds in a controlled environment.

     However, the most common and most affordable in military terms is treating

wound under the bandage.

      The ultimate goal of treatment is always wound healing and restoration of covering

tissues. Secondary healing is often a lengthy process, because at different stages

treatment using surgical methods of restoring covering fabrics. By

4-5 days after surgery, when the wound cleaned, but no granulation tissue and

no signs of wound infection, impose initial deferred seams. This is the most

rational treatment of gunshot wounds in combat. If a wound can

close later (10-14 day after Pho) when formed granulation

Fabric is imposed early secondary seams.

     Sometimes long can not sew up the wound because it formed new areas

necrosis and delayed their rejection. Then the wound is formed not only hranulya-

tion, but the scar tissue that need suturing to carve. After

This imposing secondary stitches later (15-30 days).

     To close large wounds have to go to different methods

plastic skin.

6. Materials methodological support classes.

6.1. The task source for self-knowledge skills / the provision at the end of the block assignments Key Answer - task II level; tests of different types and standards of answers /.

Materials for the preparatory phase control sessions: questions, tasks, tests,

* Wound healing, its phases and factors that influence its course.
* Complications of wounds. Description and evaluation of the wound.

**Tests for self-control:**

1. What processes in the wound characterized by inflammation in the first phase?

A. Alteration, phagocytosis, acidosis, and migration of leukocytes

macrophages, active proteolysis, catabolic processes eskudatsiya

B. Acidosis, phagocytosis, alteration

C. Alteration, eskudatsiya

D. Alteration, phagocytosis, eskudatsiya

E. Eskudatsiya, necrosis, cell infiltration

2. What processes in the wound characterized by a second phase of inflammation?

         A. Proliferation of vascular endothelium, vascular tumors,

fibroblasts, histiocytes, lymphocytes

B. Alteration, phagocytosis, eskudatsiya

C. exudation, necrosis, phagocytosis

D. Acidosis, eskudatsiya, migration of leukocytes

E. necrosis, infiltration of cells eskudatsiya

**6.2.** **Materials methodological support basic stages of employment: the occupational** **algorithms, orienting map for formation of practical skills and to vychok,** **learning objectives.**

1. Ballistic trauma. Clinical and treatment. Areas damaged and their characteristics. Features of treatment of gunshot wounds.
2. First aid. Basic rules for primary surgical treatment of wounds. Contraindications for primary surgical treatment of wounds.

**Tests for self-control:**

1. What amount of aid implemented in primary surgical treatment of the wound?

A. antiseptic treatment of wounds (yodopyron, 3% hydrogen peroxide, furatsillina 1: 5000), dressing

B. Toilet skin around the wound, the wound treatment antiseptic dressing with antibiotic penicillin

C. Cut the damaged edges of the wound dressing

D. Cutting edges, sides and bottom wounds, antiseptic treatment, suture, bandage

E. Treatment of wounds and wound around 3% hydrogen peroxide, furatsillina 1: 5000, suturing, dressing

2. In what time frame is held initial debridement?

A. 12 hours

B . Up to 24 hours

C. Up to 36 hours

D . Up to 48 hours

E . Before the signs of infection

3. What are local signs of fresh wounds.

A. Bleeding

B . Ziyannya wounds

C. Pain

D . Violation of the functions of (body)

E . All of the above

**6.3.** **Materials Control for the final phase of occupation, task assignments, tests**.

* 1. Primary and secondary treatment of wounds.
  2. Key activities in the prevention of festering wounds.
  3. Treatment of wounds. Types of joints (primary, delayed primary, early, secondary, later, secondary and Extraembryonic seams), imposing their terms and indications for use.

**Clinical situations**

1. surgical hospital hospitalized patient, who had a sore right leg chopped. How much help?

2. The patient entered the surgical department, 40 years old, fell from a height of 3 meters and injured thigh after injury proyshlo10 hours. What debridement should be carried out?

3. As a result of stab wounds femoral artery during primary surgical treatment wound to the femoral artery vascular suture imposed. On the 7th day the patient's temperature rose to 38.80, with "appeared throbbing pain and purulent discharge from the wound. During the removal of stitches from the wound appeared arterial bleeding. COD tourniquet. Your surgical tactics?

4. The hospital admitted patients with broken hips sore lower third. The wound is contaminated land, wound - bone splinters. Patient zatormozhenyy. AT - 80/50 mm Hg. century. ud.v pulse 130 min. What treatment tactics?

5. The patient, 45, 12 days after the injury left thigh wound 5x2 cm, clean, covered granulation, edges it easily reduced without effort. What seam should apply to this wound?

**List of educational practical tasks which must be executed on practical class**

* Conducting clinical examination of the victim with a gunshot wound;
* Determining the most characteristic clinical signs of gunshot wounds.
* Drawing up a plan examination of the victim.
* Detecting signs of a gunshot wound on the radiograph
* Interpretation of the results of laboratory and instrumental studies.
* Formulation diagnosis
* Writing assignments topical medication to the patient
* Determining the indications for surgical treatment of gunshot wounds, the choice of its volume.

**6.3.Oriyentuyucha Map on independent work with literature on the topic of employment.**

6.2. Information necessary for the formation of knowledge, skills can be found in textbooks: / basic literature provided with the designation of pages /:

1. Military surgery. Ed. V. White Ternopil, 2004.

1. Transactions with wounds and injuries. Dolinin VA Bysenkov NP St. Petersburg LLC "Publishing FOLIANT" 2005 - 192 p.
2. Wound ballistics. The history and current status of firearms and personal body armor. Ozeretskovsky LB Humanenko EK, Boyarintsev V. St. Petersburg: The magazine "Kalashnikov", 2006 - 374 p.

-           More:

1. The military surgery: Guide. - 2 ed., MR. and add. ed. EK Humanenko. MM: HEOTAR-Media, 2008 - 768 p.

2. military surgery: national leadership. Authors Ed. IY Bykov, NA Efimenko, EK Humanenko. - Moscow: HEOTAR-Media, 2009 - 816 p.

3. Terminology and classification concepts and unarmed combat surgical trauma: Manual. Madai DY, Samokhvalov IM - Novgorod: Publishing House "Avenue of Science," 2010 - 40 p.

1. Military surgery local wars and armed conflicts: a guide for physicians. MM: HEOTAR-Media, 2011 - 672 p.

7. Materials for self-control that the quality of training.

A. *Questions*

* Definition and classification of wounds.
* Wound healing, its phases and factors that influence its course.
* Complications of wounds. Description and evaluation of the wound.
* Treatment of wounds, objectives and basic principles.
* Ballistic trauma. Clinical and treatment. Areas damaged and their characteristics. Features of treatment of gunshot wounds.
* First aid. Basic rules for primary surgical treatment of wounds. Contraindications for primary surgical treatment of wounds.
  + Primary and secondary treatment of wounds.
  + Key activities in the prevention of festering wounds.
  + Treatment of wounds. Types of joints (primary, delayed primary, early, secondary, later, secondary and Extraembryonic seams), imposing their terms and indications for use.

B. *Tests*that the *self-control with standard answers.*

8.Materialy that the audience independent preparation:

8.1. List of educational practical tasks to be performed during the practical (laboratory) classes:

9. Instructional materials for acquiring professional skills, skills:

9.1. Methods of work performance stages.

         10. Materials for self-mastery of knowledge, skills provided by this work.

10.1. Tests of different levels (or tests that are part of the bank to rack Tor control).

1 1 . Topic next lesson . Treatment of gunshot wounds. Drug treatment *.*

12 . The task of UDRS of Research work on the topic.

        1. Modern technology in the treatment of gunshot wounds.

Methodical development was *ace.*Yuzvak AM */*S /