

Ministry of Health of Ukraine
Ukrainian Medical Stomatological Academy

APPROVED
at a meeting of the department
disaster medicine
and military medicine
«____» _____ 2020
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Head of Department



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**Methodical instructions
for independent work of students
during preparation for a practical (seminar) lesson
and in class**

Academic discipline	Training of reserve officers
Module № 1	Home care in extreme situations
Topic of the lesson	Types of damage in combat and non-combat conditions. home care for injuries.
Course	2
Faculty	foreign students training specialty "Medicine", "Stomatology"

Poltava-2020

6. TYPES OF DAMAGE IN COMBAT NON-COMBAT CONDITIONS. PREMEDICAL HELP FOR INJURIES, FRACTURES.

Relevance of the topic:

The skin protects a person from negative external influences (friction, germs, sprains, pressure) and dehydration. It is rich in nerve endings and nerve fibers that provide its sensitivity. Therefore, the skin should be carefully protected from injury.

Wound - is an injury characterized by a violation of the integrity of the skin, mucous membranes, and sometimes deep tissues, which is accompanied by pain and bleeding. According to their origin, wounds are gunshot, cut, chopped, stabbed, bruised, torn, bitten, surgical. There are also superficial and permeable wounds (when the inner membranes of the abdomen, chest and other cavities are damaged).

2. Specific goals:

As a result of studying the topic the student should know:

- the cause and signs of soft tissue wounds;
- bandaging technique;
- the technique of applying bandages for penetrating abdominal injuries;
- Features of home care for open fractures.

Competences and learning outcomes, the formation of which is facilitated by the discipline (interrelation with the normative content of higher education training, formulated in terms of learning outcomes in the Standard).

According to the requirements of the standard, the discipline provides acquisition by students **competencies**:

-integral: The ability to solve typical and complex specialized problems and practical problems in a professional activity in the field of health care, or in the learning process, which involves research and / or innovation and is characterized by complexity and uncertainty of conditions and requirements. The ability of the individual to organize an integrated humanitarian educational space, the formation of a single image of culture or a holistic picture of the world.

-common: Ability to apply knowledge in practical situations. Ability to exercise self-regulation, lead a healthy lifestyle, ability to adapt and act in a new situation. Ability to choose a communication strategy; ability to work in a team; interpersonal skills. Ability to abstract thinking, analysis and synthesis, the ability to learn and be modernly trained. Definiteness and perseverance in terms of tasks and responsibilities.

-special (professional, subject): Ability to carry out medical and evacuation measures. Ability to determine the tactics of emergency medical care. Emergency care skills. Skills to perform medical manipulations.

Know the causes and signs of soft tissue wounds, penetrating and non-penetrating wounds of the skull, chest. of life. Protection of soft tissue wounds by applying bandages. The technique of applying bandages for injuries of the skull, eye, ear, lower jaw. Features of chest injury, the concept of pneumothorax. Home care for open and intense pneumothorax. Specificity of bandages for penetrating abdominal injuries. Features of bandages in the presence of a foreign body in the wound.

Basic knowledge, skills, abilities necessary for studying the topic (interdisciplinary integration):

Names of previous disciplines	Acquired skills
1. Human anatomy	Anatomy of the head and neck, anatomy of the chest, abdomen, pelvis and limbs. Anatomy of the vascular system.
2. Normal physiology	Physiological bases of respiratory system functioning.

Tasks for independent work in preparation for class and in class:

1. Wound protection.

2. Technique of applying bandages for injuries of the skull, eye, ear, lower jaw.
3. Chest injury.
4. Features of bandaging for penetrating abdominal injuries.
5. Applying bandages in the presence of a foreign body in the wound.

The list of the basic terms, parameters, characteristics which the student should master at preparation for employment:

Terms	Definition
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Wound	violation of the integrity of the skin or mucous membrane with possible damage to adjacent tissues.
Closed pneumothorax	accumulation of air in the pleural cavity, accompanied by a collapse of the lung and the cessation of ventilation.
Open pneumothorax	accumulation of air in the pleural cavity in the presence of a gaping wound and constant suction of air during respiratory excursions of the chest.
Valve tense pneumothorax	increasing accumulation of air in the pleural cavity, accompanied by progressive compression of the lung on the damaged side, as well as compression of the opposite lung, displacement of the mediastinum to the healthy side
A stab wound	arises from the action of a knife, bayonet, sharpener, awl, peak. These wounds have small external dimensions at great depth. Sometimes such wounds are penetrating.
Gunshot wound	occurs due to the action of a bullet firearm. Such a wound has a wound canal filled with wound detritus, foreign bodies. They have a zone of traumatic tissue necrosis, as well as a zone of molecular shock.
Inflammation phase	characterized by exudation, development of

Proliferation phase

Healing phase

inflammatory edema, necrolysis, hydration.

characterized by the predominance of restorative, regenerative processes, the formation of granulation tissue, dehydration.

this is the maturation of scar tissue and epithelialization of the wound.

Theoretical questions for the lesson:

1. Causes and signs of soft tissue wounds, penetrating and non-penetrating wounds of the skull, chest, abdomen.
2. Features of combat wounds.
3. Wound protection.
3. Technique of applying bandages for injuries of the skull, eye, ear, lower jaw.
4. Chest injury.
5. Features of bandaging for penetrating abdominal injuries.
6. Applying bandages in the presence of a foreign body in the wound.

Practical work (tasks) performed in class:

1. Diagnosis of soft tissue wounds;
2. Diagnosis of penetrating wounds;
3. The technique of applying bandages to different parts of the body;
4. Chest puncture technique for intense pneumothorax; 5. technique of applying different types of occlusive dressings;
6. The technique of applying a bandage to a foreign body in the wound.

TOPIC CONTENT:

Traumatic injuries to the skull and brain during the anti-terrorist operation in eastern Ukraine account for 38.5% of all injuries and are one of the leading causes of death and disability among servicemen. Proper home care for head injuries will prevent complications, significantly speed up the rehabilitation of such wounded and reduce disability.

Head injury– any damage to the head.

Causes of head injuries.

road accidents;

falling from a height;

gunshot wounds;

explosive damage.

Classification of head injuries

Types of head injuries:

- Open injuries:

- bruises, lacerations, wounds, subcutaneous hemorrhages;
- bone fractures;
- fractures of the cerebral skull;
- fractures of the bones of the facial skull.

Open injuries are more common in combat, as opposed to civilian injuries.

2. Closed injuries:

- fracture of the skull base;
- Concussion;
- intracranial hemorrhage.

Closed injuries are common in military operations. Explosive injuries are often closed.

3. Scalped.

Scalped injuries can be closed (contusion) or open (puncture, tear or rupture). Any scalped wound can be associated with a skull fracture and brain damage.

Open scalped wounds are accompanied by massive bleeding, which leads to even fatal blood loss, but with timely care, they usually heal.

In addition, head injuries are divided into:

1. Blunt (closed).

2. Penetrated:

- due to the ingress of bone fragments; - due to a gunshot wound; - sliding (relative to the skull).

3. Primary explosive (excessive pressure in the central nervous system).

According to the mechanism of head injury is divided into:

- Primary injury is a function of the energy transmitted to the brain by the traumatic agent.
- Secondary injury - a consequence of brain damage and systemic physiological changes due to a traumatic event.

Strengthening personal protective equipment (eg, helmets, seat belts) is the most important prevention.

Clinical signs:

visible damage to the head (wounds, bleeding, bruising); headache; loss or disturbance of consciousness; memory impairment; dizziness; nausea, vomiting; speech, breathing disorders; visual impairment; asymmetry of the pupils of the eyes; absence or weak reaction of pupils to light; weakness of different muscle groups; transparent discharge from the nose and ears.

The following signs are observed at facial injuries:

- *Blunt trauma: bruises; bone fractures; damage to facial nerves.*
- *Penetrating trauma: massive bleeding; airway obstruction; facial nerve damage.*

Severe head injuries include fractures of the skull base and intracranial hemorrhage.

Signs of fracture of the skull base: loss of consciousness; nosebleed; leakage of cerebrospinal fluid from the ears; hemorrhage around the eye area (symptom of glasses); hearing loss; facial asymmetry.

Clinical signs of intracranial hemorrhage: headache; nausea, vomiting; drowsiness; dizziness; confusion or lack of consciousness; slow speech or loss of speech; the difference in pupil size; weakness in the extremities on one side of the body. In severe cases, convulsions and coma are possible.

Providing home care for head injuries

(see the algorithm for providing home care for head injuries)

Domestic care is provided according to the above algorithm. First of all, it is necessary to begin an assessment of the condition of the victim according to the SAVS algorithm. If airway obstruction is detected by foreign bodies, they should be carefully removed. If the victim is unconscious or unstable, breathing with a nasopharyngeal or oropharyngeal tube should be provided. After that, protect the cervical spine using a trench collar, a SAM splint or handy tools (clothing, blanket, knees or the hands of the person helping). Lock the head in a stable position. If there is external bleeding, stop it by squeezing or applying a pressure bandage.

ALGORITHM FOR PROVIDING PREMEDICAL HELP WITH HEAD INJURY (shelter sector, evacuation sector)

If there are wounds, apply bandages.

Next, it is necessary to provide vascular access (put an intravenous catheter) and at the signs of hypovolemic shock to start infusing 0.9% saline solution (with head injuries, lowering blood pressure and heart rate is not typical).

The victim should be wrapped in a medical / thermal blanket and evacuated, taking

into account the severity of the head injury, to a medical facility for medical treatment.

Evacuation.

Victims with head injuries who show signs of loss of consciousness should be evacuated in a supine position with the head end raised by 30 °. During the evacuation it is necessary to ensure constant supervision of the victim. At the same time to control the state of consciousness, the presence of respiration, blood pressure, pulse. In case of severe head injuries, evacuation is carried out to a specialized medical institution, where he will be assisted by a neurosurgeon.

Eye injuries.

Preserving the eyes and eyesight of servicemen is an extremely important task. Although the eye area is small and does not exceed 0.1% of the total surface of the human body, the frequency of injuries to the visual organ in modern military conflicts reaches 2-8%, and the proportion of eye injuries in the Anti-Terrorist Operation is 2.4%. In 20% of cases, eye injuries are associated with craniocerebral injuries and traumas, injuries to the soft tissues of the face and facial skeleton. Up to 50% of eye injuries are penetrating. Preservation of vision is one of the priorities of military surgery, so proper home care for servicemen with eye injuries in combat and their rapid evacuation to the stage of specialized medical care is extremely important, as it can further significantly reduce disability and prevent complications during treatment and rehabilitation. such wounded.

See eye injuries:

- Mechanical damage: eyelids; eye socket; eyeball.
- Chemical: alkali burns; acid burns.
- Physical: radiation damage that can be caused by various rays (depending on the wavelength) - infrared (melting furnaces), ultraviolet (quartz lamp, electric welding), X-ray (radar).

Depending **on the number and location of injuries to the body**, eye injuries are divided into:

isolated when there is damage only to the organ of vision;

multiple, in case of several head injuries;

combined when there is damage to the organ of vision and other areas of the body;

combined, when the organ of vision is affected by several factors of damage (nuclear explosion, mine injuries).

According to the procedural features in relation to the capsule, eye injuries are

divided into open and closed.

Open eye injury:

penetrating wound - a single wound of the capsule of the eye, caused by a sharp wound projectile;

rupture (contusion) - a wound caused by a blunt object;

intraocular foreign object - a fragment inside the eye, which led to a wound in the capsule of the eye;

penetrating wound - two (entrance and exit) wounds from an impressive projectile.

Destruction of the eye - large or multiple wounds of the eyeball, in which it is impossible to restore the anatomical integrity of the capsule, its volume and function. Destruction can be caused by sharp or blunt objects or their combined action.

Closed eye injury: this is a non-penetrating injury - damage to the capsule is not the entire thickness of a sharp or blunt object.

Impenetrable wound with the presence of a superficial foreign body on the surface of the membranes or in the membranes of the eye.

Contusion - damage to the eyeball with a blunt object while maintaining the integrity of the eye capsule.

By severity: mild, moderate and severe.

Mechanical eye injuries.

Minor injuries include impenetrable eyelid injuries, foreign body getting under the eyelid.

Clinical signs: small non-sharp objects (smear, sand), lingering on the conjunctiva, cause a sharp feeling of burning in the eye, which is exacerbated by closing the eyes. If the foreign body is not removed, there is swelling of the conjunctiva, redness, impaired vision.

Damage of moderate severity: rupture or partial detachment of the eyelid, bruising of the eyeball without visual impairment.

Severe injuries include penetrating injuries to the eyeball or bruising of the eye with loss of vision, fracture of the bones with sagging or bulging of the eyeball.

These injuries can be caused by penetrating or blunt eye injuries.

Cause vision loss due to rupture of the eyeball structures or secondary infection.

Providing home care for mechanical eye injuries.

According to the proposed algorithm above, the provision of home care for eye injuries: after the initial examination according to the SAVS algorithm, if the

wounded is in a clinically stable condition, it is necessary to diagnose eye damage and provide appropriate home care within the secondary examination.

In case of minor damage to the eye, the wounded person should apply a non-pressure bandage on the injured eye and return it to the military unit (the bandage should not touch the eyeball).

If a small foreign body is found in the eye, carefully remove it.

WARNING! Under no circumstances should you rub your eye, as this causes even more irritation.

Foreign body removal technique: first examine the conjunctiva of the lower eyelid. The victim should look up, while the lower eyelid should be pulled down. Remove the foreign body with a thick cotton swab. Removing a foreign body from under the upper eyelid is more difficult. To do this, pull the upper eyelid a little on yourself and twist.

In order to prevent infection after removal of a foreign body in the eye instilled 2-3 drops of a solution of sulfacetamide.

In case of penetrating damage to the eyeball, the wounded should be evacuated first to preserve their eyesight. In this case, the victim should apply a tight aseptic bandage on the eye so that it rests on the edge of the orbit and does not touch the eyelids. If only one eye is damaged, a bandage is applied to the injured eye, because, being able to see, such a victim, depending on his condition, can continue to perform combat missions or go to the medical facility, where he will receive medical care.

The algorithm of home care for eye injuries is given below.

ALGORITHM OF DOMESTIC CARE FOR EYE INJURIES

(shelter sector, evacuation sector)

After that, give an antibiotic to prevent wound infection.

In case of penetrating injuries of the eyeball, the sanitary instructor must plan an urgent (within 1 day) referral of the wounded to a surgeon or ophthalmologist.

Sometimes it is difficult to distinguish severe damage from minor. In the shelter sector, due to time constraints and insufficient equipment, the health instructor will operate on a "tie and evacuate" basis.

Eye burns.

Physical damage to the eye (thermal burns). The intensity of tissue heating depends on the temperature, the physical characteristics of the active thermal agent, the method of heat transfer and the duration of heating. Under the action of

high temperature there is a thermal coagulation of tissue proteins, cell death.

Clinical signs: burning pain in the eyes, dryness of the conjunctiva (like sand in the eyes), tearing, dilation of the conjunctival vessels, redness of the eye.

Home care: remove the victim from the irradiation area, instill the eye with a solution of lidocaine or local anesthetics, apply an aseptic bandage to the injured eye, refer to a doctor.

Chemical damage to the eye (chemical burns) can be caused by a variety of chemicals - acids, alkalis, solvents and other irritants.

Of great importance are the chemical composition of the striking agent, its concentration and duration of exposure.

The penetration of alkali into the middle of the eyeball is associated with the possibility of catastrophic damage to intraocular structures.

At burns by acids in fabrics necrosis develops. Acids penetrate less effectively into the tissues of the eye than alkalis. However, if the acid penetrates deeper tissues, it causes damage to intraocular structures, as in alkaline burns.

Clinical signs: severe pain, foreign body sensation in the eye, photophobia, tearing, blurred vision and significant deterioration. The skin around the eyes is red and blisters may appear. The conjunctiva is red, swollen. The cornea becomes cloudy, with a grayish or (in severe cases) milky hue.

The depth of the burn of the eyeball is traditionally assessed by the severity of corneal opacity.

Domestic extended care: Immediately neutralize the effect of the affecting factor, then immediately rinse the eye under running cold water for 20 minutes, apply an aseptic bandage and evacuate to a hospital.

Changing the nature of modern armed conflicts and at the same time improving the means of protection of the body reduce the number of combat injuries of the spine, abdomen and pelvis. But despite the increased reliability of the body's defenses, even non-penetrating injuries to the spine, abdomen and pelvis remain potentially fatal, as they can be accompanied by significant internal bleeding. Therefore, rapid recognition, clear actions to provide home care and take into account the specifics of evacuation of victims with injuries of the spine, abdomen, pelvis are necessary conditions to ensure maximum survival of the bridge victims.

Injuries of abdominal

Abdominal injuries are closed and open (penetrating and non-penetrating; with

damage to internal organs and without damage to internal organs).

***Closed injuries occur** as a result of the impact of an explosive wave, falling from a height, blows to the abdomen, compression of the torso with heavy objects, debris, etc. Minor injuries can be limited to isolated bruises and damage to the abdominal wall - rupture of muscles, blood vessels, etc. Severe abdominal injuries are accompanied by damage to the abdominal organs and extraperitoneal space.*

***Open injuries most often occur** with gunshot, stab wounds to the abdomen. Penetrating injuries include those that are accompanied by damage to the anterior abdominal wall with damage to internal organs and large blood vessels. Such injuries are life-threatening for the victims due to the development of massive internal bleeding and purulent inflammatory processes in the abdominal cavity.*

***Acute diseases of the abdominal cavity**, which are treated only surgically. With acute diseases and injuries of the abdomen can develop peritonitis, which causes high intoxication of the body and without urgent (urgent) surgery will inevitably lead to the death of the patient.*

They are divided into:

1). Diseases, complications of diseases and injuries that make up the collective diagnosis - **ACUTE STOMACH**: closed and open abdominal injuries, peritonitis, acute appendicitis, pinched abdominal hernia, complications of gastric ulcer: perforated ulcer, acute gastrointestinal bleeding, acute intestinal bleeding.

2). Diseases that in a complicated course can give the clinic of an acute abdomen, or when the diagnosis of an acute abdomen in the course of the disease is difficult to deny: acute cholecystitis and acute pancreatitis.

Typical symptoms:

- a sharp pain in the abdomen, forcing the victim to take a forced position lying on his side with his legs bent at the knees and hips (the so-called "outside the embryo");
nausea, vomiting of stomach contents or blood;

thirst, dry tongue;
weak, rapid pulse;
pale skin;
tense, hard as a board belly;
lack of respiratory movements of the anterior abdominal wall;
external bleeding, loss of internal organs (with open injuries).

Premedical help for abdominal injuries

ALGORITHM FOR PROVIDING HOMELAND INJURY INJURIES (*shelter sector, evacuation sector*)

Assessment of the victim's condition. Includes examination of the wounded to determine the entrance and exit of the wound and conditions that are primarily life-threatening (significant bleeding, loss of internal organs, large wound size, etc.) and the introduction of analgesics.

In case of abdominal injuries, the victim should be placed in a comfortable position on his back and bend his legs at the knees. This will relax the abdominal muscles, reduce pain and shock, and prevent further damage to internal organs. The unconscious victim needs constant supervision to prevent the tongue from sinking and closing the airway.

Examination of the wound. Care should be taken to remove clothing around the wound, and it is forbidden to remove parts of clothing that are tightly adhered to it. If the skin is cut by 3-5 cm, there is a loss of internal organs. In case of loss of internal organs, they are placed on the abdominal wall of the victim with the help of sterile (improvised) material moistened with 0.9% saline solution (humidification is performed during the entire evacuation stage). It is forbidden to touch the internal organs with your hands or put them in the middle of the wound.

WARNING! Do not moisten the internal organs with urine or chemical solution. It is possible only with pure water or physiological solution.

Applying a bandage (page 67). PPIs, sterile bandages, improvised means (clothes, shirts, etc.) are used as dressings. The bandage should be large and tightly covering the abdomen.

If there is a foreign body protruding from the wound, the bandage is applied carefully around the wound, without displacing the foreign body.

After applying the bandage, it is fixed on the healthy side, away from the wound. To better secure the bandage, you can use an improvised support bandage from the tools at hand (tie, clothes, etc.). At the same time it is fixed on the opposite side from the PPI node.

It is strictly forbidden to give food or water to victims with abdominal injuries, only moisturizing the lips is possible.

At damage of abdominal organs victims feel strong thirst, constantly ask to drink. It is necessary to make sure that the victim could not get drunk on his own (take away and put out of reach a flask of water), because he, despite the ban, it is difficult to control his actions.

WARNING! Wounded with abdominal injuries are strictly forbidden to eat, drink, take pills.





Page. 2. Applying a bandage for abdominal injuries

REMEMBER!

The internal organs that have fallen out of the wound should never be inserted into the abdominal cavity! This is firstly painful, and secondly it will lead to additional infection.

The internal organs that have fallen into the wound should be isolated from the external environment, the gauze aseptic bandage should be constantly moistened to avoid drying. When it dries, the gauze sticks tightly to the intestine, which in the

future, when you try to make a bandage, will damage it over a large area. It is desirable to moisten the bandage with sterile saline solutions, but in their absence it is permissible to use ordinary water.

To keep the internal organs that have fallen out of compression, a cotton gauze (or made of clothing) ring is placed on the anterior abdominal wall, which surrounds and protects the viscera, and only then on top of this ring tightly but not tightly (to avoid compression and necrosis of the viscera) a circular bandage is applied.

Damage to the pelvis and pelvic organs

Combat injuries of the pelvis are divided into gunshot wounds (bullet, shrapnel wounds, mine injuries, explosive injuries) and non-gunshot wounds (open and closed mechanical injuries, non-gunshot wounds). Pelvic injuries from the experience of armed conflicts in recent decades account for up to 5% of sanitary losses of the surgical profile. In local wars, the share of open and closed pelvic injuries increased - in the case of an explosion in armored vehicles, in the blockages of fortifications, falls from heights, collisions with vehicles.

At gunshot wounds of a pelvis entrance openings can be:

1. On the anterior abdominal wall;
2. In the lumbar region;
3. In the buttocks, perineum, inner or outer surface of the upper third of the thigh.

Features of the clinical course:

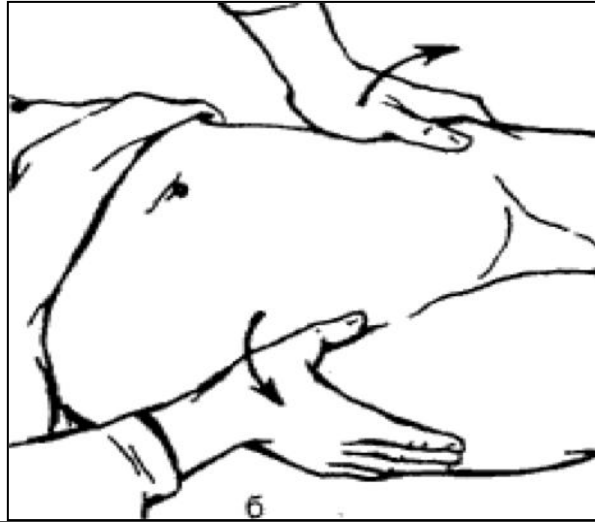
severe pain; great blood loss; infectious complications.

Life-threatening consequences of pelvic injuries:

active bleeding; growing intra-pelvic hematoma; active external bleeding.

Diagnosis of pelvic fractures:

1. Larry's symptom (page. 68); 2. Verneil's symptom (page. 68); 3. Pain when pressing on the pubic joint; 4. Symptom of "stuck heel"; 5. Pain when pressing on the large thigh spit; 6. Pain during passive movements in the hip joint.



Page. 3. Diagnosis of pelvic fractures

A) Larrey's symptom B) Verneil's symptom

When assessing soft tissue damage, the nature of the injury, the course of the wound canal, and the extent of the damage are determined. Damage to large blood vessels and nerve trunks, pelvic bones and pelvic organs must be ruled out. Gunshot fractures of the pelvic bones are often "window" in nature, may be accompanied by instability of the pelvic ring.

Diagnosis in the field is to assess the location of the inlet and outlet openings, the presence of pain in the projection of possible fractures and bleeding. Fractures of the iliac bones are recognized by the sensation of pain when pressing on their wings (symptoms of Larry, Verneil).

At a fracture of pubic bones the sensation of pain when pressing on them is observed. A characteristic symptom of a "stuck heel": the injured person cannot lift the outstretched leg, because the resulting muscle tension displaces the bone fragments and increases the pain in the fracture area. Pain in the hip joint when pressing on the large spit of the thigh, when tapping on the heel of the extended limb indicates a fracture of the acetabulum.

The presence of blood in the finger examination of the rectum indicates the displacement of bone fragments, damage to the intestine (blood remains on the finger), the induction of the anterior wall - on the hematoma of the pelvis.

Home care for pelvic injuries is carried out according to the algorithm of home care for pelvic injuries ").

Wound dressings, wound tamponade, adequate analgesia.

Evacuation on a rigid stretcher (Talon) in a position comfortable for the wounded. If possible, tighten (immobilize) the pelvis with service or improvised tires (Fig. 69).

Antibiotics are administered intravenously (ceftriaxone).

After cessation of external bleeding, plasma substitutes (0.9% NaCl, gecodes) are administered to restore BCC. Infusion by jet, into two veins.

Complete anti-shock therapy is effective after the final cessation of bleeding. At an unstable fracture of pelvic bones blood loss makes 2-2,5 liters. Wounds should not be sutured, as there is often a need for repeated surgical procedures.

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ALGORITHM OF DOMESTIC CARE FOR PELVIS INJURIES

(shelter sector, evacuation sector)

The best means of transporting victims with severe pelvic injuries are pneumatic stretchers. If there are none, the transport is carried out on standard stretchers, tying the knees together and placing an improvised roller under them. In the absence of burdens resort to immobilization by improvised means, using boards, countertops, knocked down boards, etc.

The wounded with a fracture of the pelvis is placed with his back on a solid shield, a wide board, door or sheet of plywood, under his knees put a sleeping bag or blanket so that the lower extremities were bent at the knees and slightly apart. In this position, the limbs are fixed with a strut and bandages.





Page. 4. Immobilization of the pelvis by improvised means

Spinal injuries

Any spinal cord injury is a severe injury to the musculoskeletal system. In addition, a fracture of the spine is often combined with damage to other anatomical structures, including the spinal cord and vascular-nerve plexuses. These injuries can lead to disability and in some cases pose a serious threat to life.

Spinal injuries occur with excessive bending or unbending, falling from a height, diving in a shallow place, during car accidents and landslides, mine and gunshot wounds.

Spinal fractures are heterogeneous in the mechanism of development, severity and clinical manifestation.

Possible causes of spinal cord injury (rule of three "B"):
water, driver, height.

Spinal fractures by location:

cervical department; thoracic department; lumbar region; buttocks; coccyx.

Spinal fractures due to damage to anatomical structures:

vertebral bodies; vertebral arches; articular processes; transverse processes; spinous processes.

Spinal fractures by mechanism:

compression; fragmentary or explosive; wedge-shaped.

Spinal injuries can be closed or open.

A fracture can be combined with damage to the spinal cord or roots. In these cases, various neurological disorders develop. And the higher the injury, the more severe these violations. If the fracture of the lumbar region is accompanied by paralysis of both legs, then the above spinal cord injuries turn off the function of all limbs, abdominal press, pelvic organs.

Signs of spinal fracture:

pain, visible deformation of the spine, soft tissue swelling in the projection (location) of the injured vertebrae, skin lesions - wounds, abrasions, paresthesia (tingling, burning, crawling ants).

The provision of care to victims of spinal injuries has characteristic features, primarily related to the need to prevent secondary displacement of the vertebrae with spinal cord injury (see the algorithm for providing home care in case of suspected spinal cord injury).

Assistance to victims with suspected damage to any part of the spine, as well as their transportation is carried out only in a supine position and on a hard surface. A group of at least 3 people is needed for proper care. Prior to the arrival of the paramedics, the victim should be calmed down and examined.

It is forbidden to move the victim. You need to ask the victim to move his arms and legs a little and check the sensitivity with a light pinch. Moves, feels - so the spinal cord is not affected.

All wounded with suspected spinal injuries are subject to immobilization and transportation is carried out on a shield, rigid or vacuum stretcher.

All victims with spinal injuries, and especially if a cervical spine injury is suspected, receive additional immobilization with a special Schantz collar. This collar repeats the contours of the neck, and when properly applied completely immobilizes the neck. The collar is applied by 2 people - one fixes the head, the other gently brings the collar

under the

neck.



The technique of applying the collar of the Chance

In the absence of a Schantz collar, we use the tools at hand: clothes, shoes, a massive cotton gauze bandage around his neck, plastic bottles, etc.

The algorithm for providing home care in case of suspicion of spinal cord injury is given below.

Providing assistance to victims with neck injuries

Domestic extended care before the arrival of the unit of paramedics is to calm the victim, in the unnatural position of the head or neck fix them with a collar Schantz (Fig. 31), SAM tire (Fig. 65) or improvised means (heavy objects: stones , shoes filled with sand, stones, etc.).

ALGORITHM FOR PROVIDING DOMESTIC CARE IN CASE OF SUSPECTED SPINE DAMAGE(shelter sector, evacuation sector)

Technique of laying the victim with a spinal cord injury on a stretcher

A wide board or door longer than the victim's height is used for transportation. The stretcher or shield must have a flat hard surface. To prevent sudden movements and displacement of the wounded body, it is necessary to carefully tie his arms (at waist level) and legs. If the victim is in a supine position, a roller is placed on the stretcher under the waist.

Stacking is carried out, as a rule, by four persons.

Numbers "2, 3 and 4" squat on one knee on one side of the shield. Number "1" is on the opposite side. The first three people gently put their hands under the victim, and the number "1" helps them in this. When ready, number "2" gives the command. All persons simultaneously, carefully lift the victim by 20 cm. Number "1" slides the shield, making sure that the roller is under the victim's waist, and then helps the rest again. Number "2" team controls the placement of the victim on the shield.





Рис. 6. Laying the victim with a spinal cord injury on a stretcher

At position of the wounded face down it is not turned over, transported, having put under a breast the platen.

If the injured person needs to be taken out of the place where it is not possible to put him on hard stretchers at once, soft stretchers can be used. At the same time it is necessary to put the victim on a stomach having put under it under shoulders a platen from clothes so that the main end was summed up.

WARNING!!!

Wounded on suspicion of spinal cord injury is prohibited:

plant; to force to stand up, to walk; to transport in a sitting position; to try independently to correct the deformed backbone; to pull for hands, for legs; to carry out stretching (traction) of any department of a backbone; to feed, to water. If evacuation will be carried out less than 1 hour, it is better not to carry out anesthesia.

REMEMBER!

Spinal movements, especially flexion, can lead to additional damage to the spine and spinal cord. The number of transfers of the victim should be minimized.

If all these requirements are met, the risk of complications of a spinal fracture at the prehospital stage will be minimized. The consequences of some mistakes made in the prehospital stage, in the future it will be impossible to eliminate even the most effective treatment.



Fixation of a neck by means of the SAM bus

If the victim is face down, carefully, supporting his head, lift him by the shoulders

and put a roller under his neck (the back of the head should lie on the ground). It is forbidden to turn the victim with a neck injury if he is face down. Immobilization should be performed in the same manner as described above, without placing a roller under the neck.

Technique of laying the victim with a neck injury on the shield (board).

Assistance is provided by two people, and the movement of the head and torso of the wounded with a neck injury should be carried out synchronously. Next to the injured it is necessary to put a wide board, 20 cm longer than the height of the wounded. Number "1" supports the victim's head and neck, number "2" kneels on the board (to prevent it from slipping) and, supporting the victim by the shoulders and thighs, carefully places him on the board.

If the victim is face down, number 1 supports his head and neck, while number 2 gently flips him on his back and places him on the board. After that, it is necessary to put a roller under the neck and immobilize the head (neck) with the help of improvised means. Then the board is placed on a stretcher and the victim is transported.

In the final part of the lesson, the teacher summarizes the lesson, answers questions and checks how the staff of the unit understood the above material.

Literature

Basic references

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