

Topic 1.11 «First aid for common traumas and poisonings» Part 2

Application of the elastic tourniquet

Application of the elastic tourniquet is the most common way for bleeding control. Arresting bleeding tourniquet is a rubber band with the length 140 cm. and the width 2.5 cm.

Places of tourniquet application:

- Forearm injury – lower third of the brachium.
- Brachium injury – upper third of the brachium, near the axillary crease.
- Shin or knee injury – the middle part of the thigh.
- Thigh injury – the foundation of the thigh, closer to the groin.



After tourniquet application it is necessary to immobilize the limb.

Also, it is important to put a message under the tourniquet with time and date indication.

General time for tourniquet wearing should not exceed 1.5-2 hours, in cold season this time is limited by 1 hour. Also, in cold season it is important to warm the extremity to avoid frostbite.

It is necessary to put a piece of fabric under the tourniquet.

The tourniquet cannot be placed on bare skin. First you need to press the artery and lift the limb. Bleeding is arrested with first tight turn. Other turns are applied without tension (they are fixating). Tourniquet turns are applied in an upward spiral and re-covered each other on the half of their width. Tourniquet ends are fixed with chain or hooks. The tourniquet is applied correctly if the bleeding stops and peripheral pulse is not defined.

The tourniquet is applied incorrectly if the bleeding does not stop, extremity goes blue (cyanotic) and the pain progresses.

When recommended time of tourniquet application is over, it should be loosed for 5-10 minutes (to restore the blood supply). During loosening it is necessary to use manual (finger) pressing for injured vessel.

You should apply the tourniquet again upper previous place of application. This manipulation might be repeated several times. But the duration between applications should be in half the time than previous one. Mark the new time of tourniquet application. The tourniquet should be visible for others. The victim with tourniquet is directed to the hospital immediately.

NB!

Only doctor is able to pull the tourniquet off.

Meanwhile the tourniquet is prohibited to apply in the middle third of shoulder and lower third of the thigh due to the risk of nerve disturbances.

The application of tourniquet is not allowed for infants under 3 years. It is necessary to provide them manual pressure of vessel. For older children tourniquet application is allowed for 1 hour in summer and 30 minutes in winter.

Application of improvised cloth tourniquet

If tourniquet is unavailable, bleeding can be stopped with makeshift means (piece of lasting cloth, tie). Wide strips of fabric won't provide enough pressure for bleeding arrest. Also, it is not allowed to use ropes or cables, they can cause additional injury of skin or vessels.

All rules and time duration are the same as for tourniquet application. The difference is to place the stick between two knots to prevent spontaneous loosening



You may also use waist belt as a tourniquet



Application of occlusive bandage

Occlusive bandage is applied for venous bleeding control or light arterial bleedings.

Order of occlusive bandage application:

- **Close the wound with sterile napkin;**
- **Place the tightly coiled swab (make it from gauze or any fabric) on the napkin;**
- **Press the swab with the strength into the wound to stop bleeding (during 7-10 minutes);**
- **Bandage the swab to the limb tightly;**
- **Immobilize the limb.**

Advantages of pressure bandage:

- **Intact arteries are working;**
- **Muscles and nervous are not squeezed.**

Disadvantages:

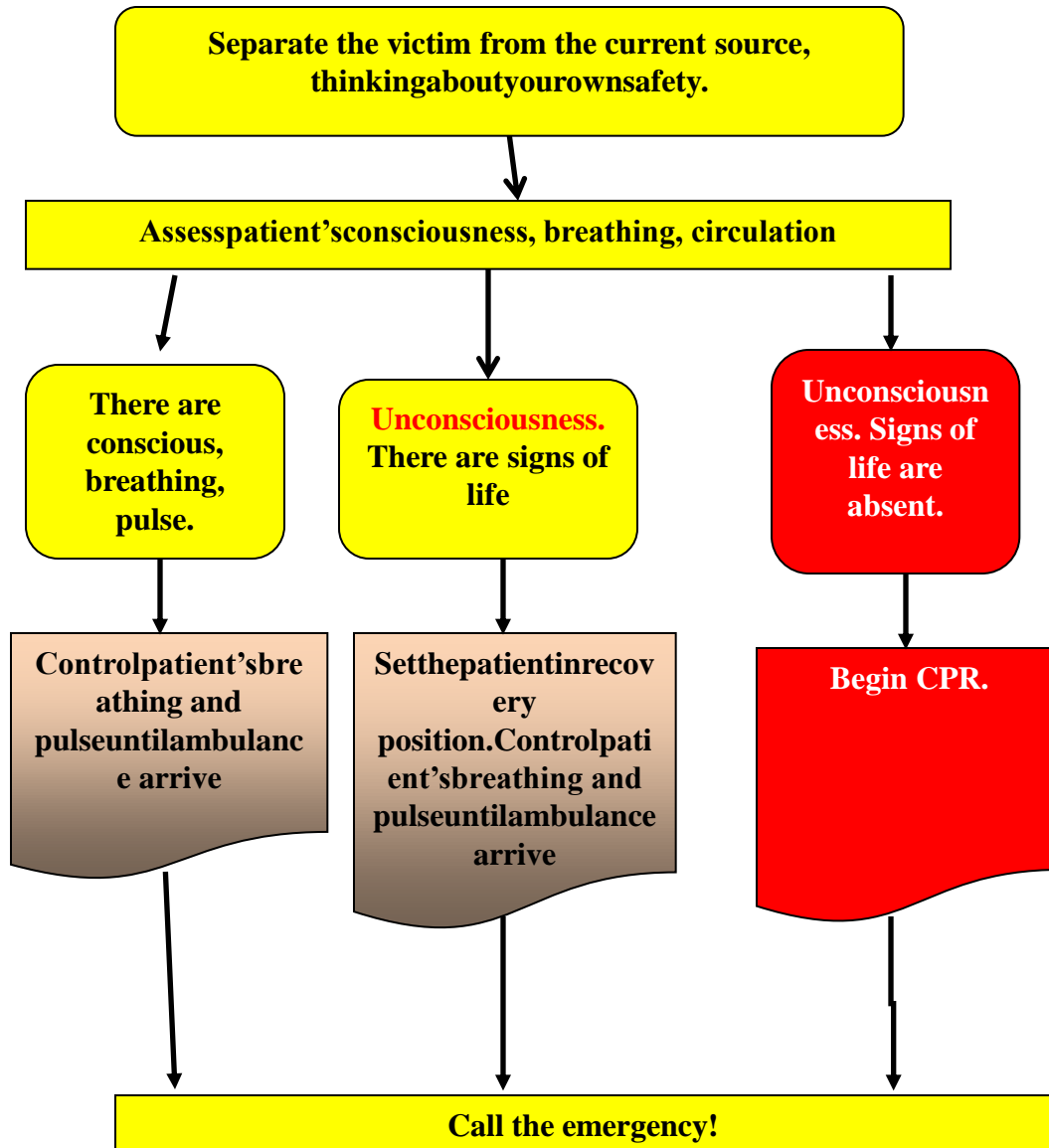
- **The procedure is painful;**
- **Blood can impregnate the swab and the pressure will be weakened;**
- **Fractures are the contraindications.**

First aid for nasal hemorrhage.

- **Tightly squeeze victim's nostrils (squeeze all lower part of the nose if there is no fracture)**
- **Convince the victim to tilt his head **forward**, not throw it back**
- **Convince the victim to spit the blood out, not to swallow it.**
- **If you have hemostatic sponge put it into nasal meatuses.**
- **Place the cold compression on patient's nose.**
- **Urge the victim to breath with his mouth during 1 hour after bleeding arrest.**
- **If the bleeding continues call the emergency.**



Electrical injury



NB!

Take the victim to the hospital even after successful CPR arrangements!

**First aid depends on victim's condition after electrical current cessation.
Rescuer should assess victim's condition quickly (in 15-20 sec.)**

- 1. If victim is conscious, ensure him or her rest until emergency arrive.**
- 2. If it is impossible to call the ambulance, transfer the victim to the hospital immediately.**
- 3. If the victim is unconscious or his or her condition is severe call the emergency immediately.**
- 4. Do not allow the victim to move.**
- 5. If the victim is unconscious (breathing is defined), set him or her in recovery position, provide inflow of fresh air, make sniff him or her ammonia, warm the body spray with water.**
- 6. If the patient is unconscious (breathing and circulation are not defined), begin CPR immediately.**
- 7. Transfer the victim if there is an additional hazard for patient or rescuer.**

Drowning

- Extract the victim from the water, think about your own safety!
- Call the emergency.

The patient is conscious?

Yes

No

Does the victim breathe?

Yes

No

Begin rescue breathing:

For experienced rescuer:
Transport the victim shoreward perform rescue breathing for him

For inexperienced rescuer:
Transport the victim shoreward without rescue breathing

On shore:

Conscious is clear.
Breathing and circulation are defined.

Warm the patient.
Observe him or her until emergency arrive.

Mental state is confused.
Pulse is defined.
Bubbling breathing.

Warm the patient.
Observe him or her until emergency arrive.
Be ready to provide CPR.

Unconsciousness.
Breathing is not defined. Pulse is defined.

Rescue breathing.
Warm the patient.
Control the circulation.
Set the victim in rescue position after breathing appear.
Observe him or her until emergency arrive

Unconsciousness. Breathing and pulse are not defined.

CPR

NB!

Observe the patient constantly, control all vital functions to avoid “secondary drowning”

The main objective for rescuer is to save victim’s life and provide safety for himself. First of all, the victim should be taken out of water. Approach to the victim from behind, catch him so that his face would stay elevated over the water surface (catch him carefully, because the conscious victim is actively struggling for the life and can be the source of danger for the rescuer) The best way to catch the victim is to grab him from behind for his or her hear.

If the victim has grabbed the rescuer and pulls him down, rescuer need to dive. In this case the victim will unclasp his hands instinctively.

The first aid character depends on the type of drowning.

There are two kinds of drowning.

- 1) Blue or “wet” (sometimes it is called true drawing). In wet drowning, the water gets into a person’s lungs, causing swelling, making it difficult or impossible for the person’s body to exchange oxygen for carbon dioxide, which can be fatal. Wet drowning symptoms include coughing, choking, labored breathing, fatigue, vomiting, chest pain, a sore throat, and blue color of the skin.
- 2) Pale or “dry” drawing. In dry drowning, the water triggers a muscle spasm in the person’s airway, causing a person to have to difficulty breathing. It can lead to asphyxiation. The drowning is called dry because water does not enter the lungs.

Dry drawing has more favorable prognosis.

First aid

After taking the victim from the water it is necessary to make quick assessment of the drowning type. Quickly remove the foreign bodies (vomiting materials, dental prothesis, mud etc.) from the airway. In the case of wet drawing there is a lot of water in airways, therefore you need to remove it. The victim should be turned face down to evacuate water from airways and the stomach. Put your two fingers in his mouth and press the base of the tongue to induce vomiting and start the breathing.

If the attempts to induce vomiting aren't successful, start CPR immediately. No coughing or vomiting response means that all water has been already absorbed, its evacuation seems impossible.

In the case of dry drowning start CPR immediately after removing foreign bodies from airways excluding the step of vomiting inducing.

After recovery of spontaneous breathing, set the victim to the stable lateral position (recovery position), cover him with blanket for warming. Call the emergency. The victim should be under permanent control until the emergency team arrives.

All the victims must attend to the inpatient hospital for medical care because complications of drowning, such as pulmonary edema or brain edema, can manifest themselves during a prolonged period of time.

Honorable students!

After learning this material, you need to pass the test in Google-form. Please fill all gaps properly (name, faculty, number of your group).

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Thank you for attention