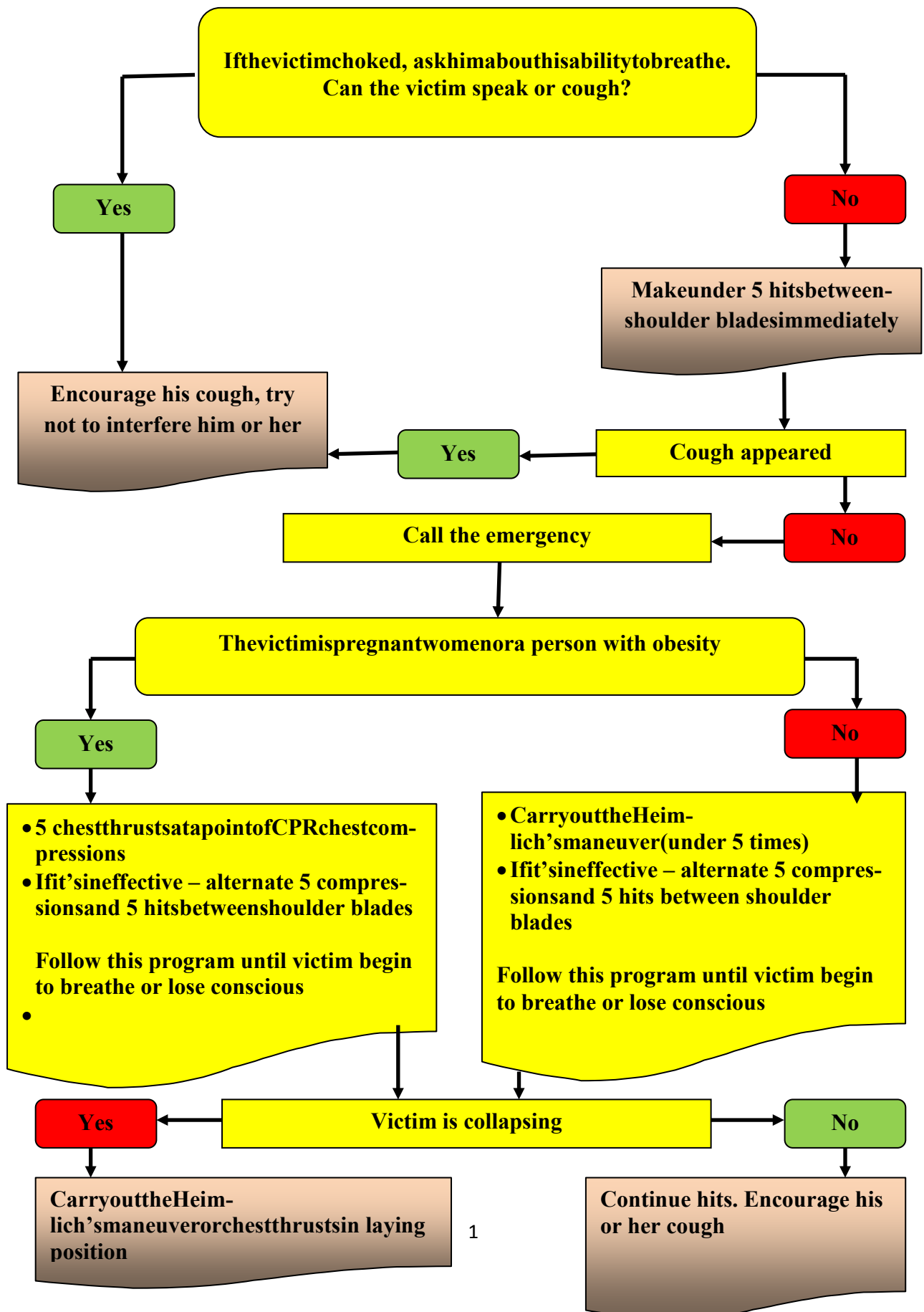


TOPIC 1.11 «FIRST AID FOR COMMON TRAUMAS AND POISONINGS»

PART 1

First aid for mechanical asphyxia

Scheme 1



Foreign body airway obstruction is widespread case of household accidents. The most common foreign bodies are parts of food (for adults) and small items, parts of the toys (for children, infants).

The effectiveness of the first aid depends on the kind of obstruction: partial or complete.

Partial obstruction

The casualty is able to cough out a foreign body. His breathing is hoarse and husky. It's necessary to keep the casualty continuing to cough. If you watch slight cough, noise and loud attempts of inhaling between coughs, skin paleness, lips and nails cyanosis, you should consider this airway obstruction as complete.

Complete obstruction

The casualty cannot either speak or cough. He grabs himself for neck. He has motor excitation.

Algorithm of procedures for adult and children aged 1 and over in the case of airway obstruction.

First of all, ask the victim main question: "Can you breathe?"

If there is a partial obstruction (the victim is able to speak and breathe) urge him to cough as hard as possible. Do not interfere him to cough out a foreign body.

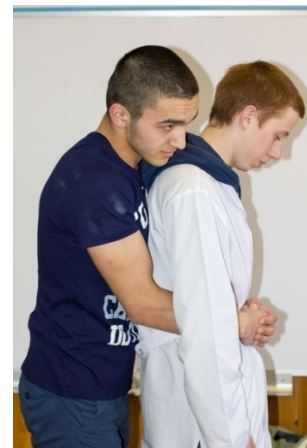


Pic. 1 Pic. 2 Pic. 3

If there are symptoms of complete obstruction and the victim is unconscious, you need to carry out series of thrusts:

- Stand on the side and at the same time a little behind the patient;
- Support victim's breast and tilt the patient forward to get foreign body out;
- Make under 5 sharp hits between patient's shoulder blades with the heel of your other hand (pic. 1,2,3);
- Observe the patient.

If your hits were unsuccessful carry out the Heimlich's maneuver.



Pic. 4 Pic. 5

- Stand behind the victim and grip his abdomen with your arms;
- Tilt the patient forward;
- Bunch one fist and put it between umbilicus and sternum, cover your fist with your other hand (pic. 4,5);
- Press in the in-and-up direction (pic. 6);
- Continue this movement until foreign body will get out or victim will be collapsed.



Pic. 6 Pic. 7

If the victim cannot receive pressure on the abdomen (e.g. pregnant women, excessive obesity, abdominal traumas, little child), chest compressions are advised instead Heimlich's maneuver (hands are on the middle of the chest bone) (Pic. 7).



Pic. 8 Pic. 9

If the victim collapses it is recommended to change Heimlich's maneuver. The victim lies on his back on a hard and solid surface. The rescuer goes on his knees near the victim's thighs, puts his hands lower ribs and higher umbilicus and uses chest compressions. The maneuver is repeated under 5 times. (Pic. 8,9).

If Heimlich's maneuver was ineffective, it is recommended to examine the oral cavity. If you see a foreign body, try to remove it. Carry out rescue breathing 5 times

(“mouth-to-mouth” or “mouth to nose”) if there is not such ability to remove foreign body.

Then repeat all cycle, starting with the Heimlich’s maneuver.

If a victim is a child under 5, you need to lay (or sit) him down on hard surface and carry out Heimlich’s maneuver in this position. Press the abdomen between ribs and umbilicus with your index and middle fingers. Repeat this maneuver several times.

When we speak about the infants, you may also use back hits. Straddle infant face-down over your forearm, with the head lower than chest (Pic. 11) or use draining position (Pic.10). Using heel of the other hand give 5 back hits between shoulder blades. Other method is carrying out abdominal thrusts using 2 fingers (index and middle). You may alternate five back hits and five abdominal thrusts.



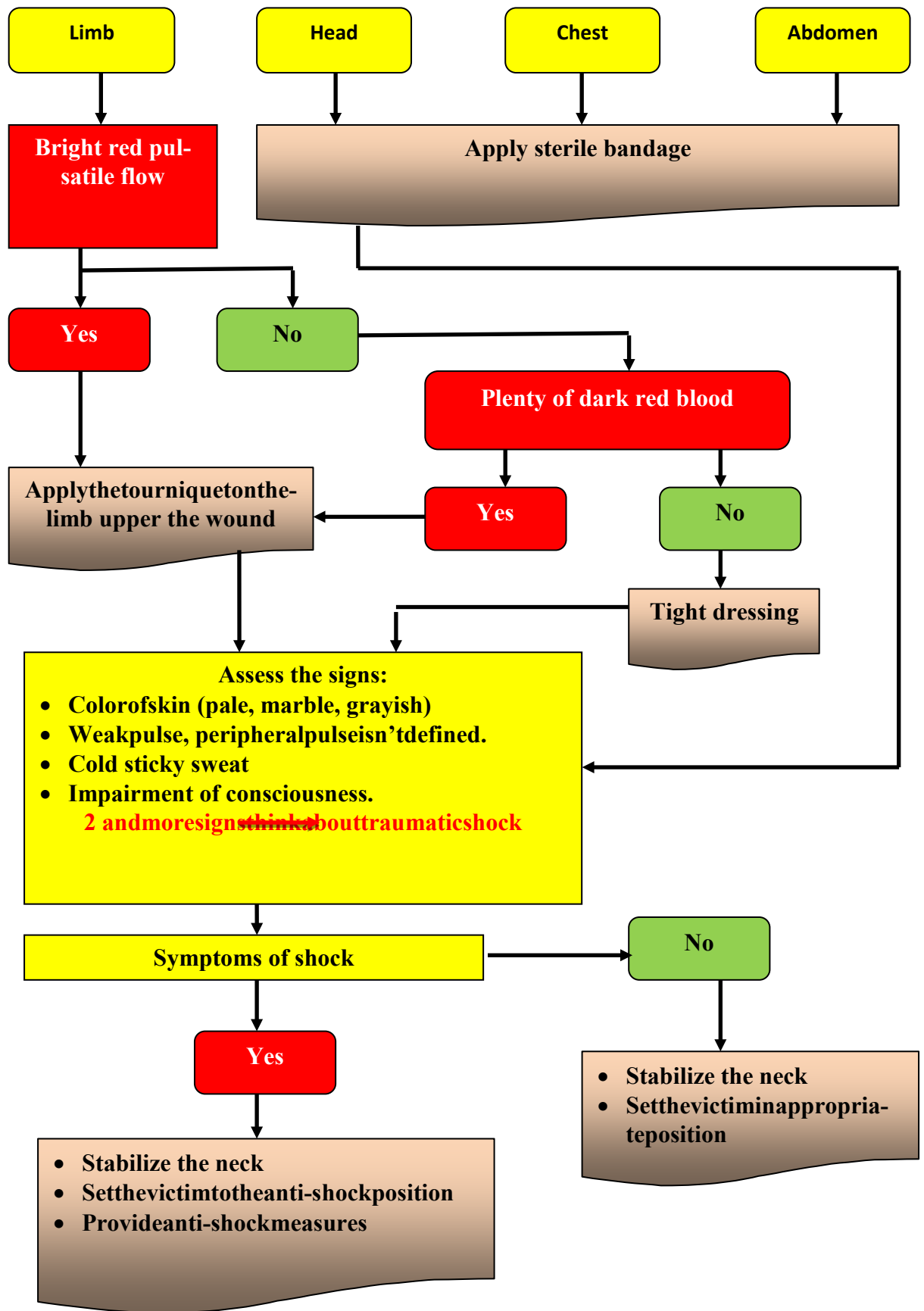
Pic. 10 Pic. 11

If you need to provide the first aid to yourself, you should also use Heimlich’s maneuver.

Bunch your fist and put your thumb to the abdomen between ribs and umbilicus. Cover your fist with your other hand and thrust it up. You may use some solid support instead of your fist, e.g. chair or handrail. Repeat this maneuver several times.

Acute blood loss and traumatic shock.

Scheme 2



Common signs of blood loss

- ✓ Wound or closed trauma;
- ✓ Visible bleeding;
- ✓ Blood on the clothing;
- ✓ The thirst;
- ✓ Trembling pulse;
- ✓ Shallow breathing;
- ✓ Pale, sticky skin;
- ✓ In the case of internal bleeding- embryo position, abdominal pain, nausea and vomiting, visible enlargement of abdomen.

If bleeding is faster than 150 ml per minute, death becomes through 15-20 minutes.

Average blood volume loss after different traumas.

1. According to the character of trauma:

- Hemothorax – 1,5-2 l l.;
- Fracture of 1 rib - 0,2-0,5 l.;
- Trauma of the abdomen – under 2 l.;
- Fracture of the pelvis – 3,0-5,0 l.;
- Fracture of the femur – 1,0-2,5 l.;
- Fracture of the brachium or shin – 0,5-1,5 l.;
- Fracture of the forearm – 0,2-0,5 l.;
- Spinal fracture – 0,5-1,5 l.;
- Scalped wound with the size of one hand: – 0,5 l.

2. According to the clothing soaking with the blood:

- Waffle towel – 0,8 l.

3. According to the diameter of the blood pool:

- With clots (D=40 cm.) – 0,7 l.;
- Without clots (D=under 1 m.) – 1,0 l.

Common signs of the shock caused by severe bleeding.

1. Anxiety.
2. Pale skin or cyanosis.
3. Impairment of consciousness.
4. The subcutaneous venous network isn't defined.
5. Chill. Cold limbs and cold sweat.
6. After nail pressing its color recovers in 2 seconds.
7. Low blood pressure, tachycardia, but weak pulse.

Ways of temporary bleeding control:

1. Finger (manual) pressing of vessel to the bone.
2. Ultimate bending of the extremity.
3. Arresting bleeding tourniquet application.
4. Application of compressive bandage.

Finger pressing of the artery.

Manual pressure of the artery is the quickest and the most accessible method of bleeding control and it doesn't need any additional measures. While one person is pressing injured artery, other rescuer is looking for a bandage to provide more reliable method of bleeding control.

You need to press artery with 4 fingers of one hand or with 2 thumbs for the duration of injured vessel.

NB!

It's ineffective to press the vessel with one finger, because it might slide.

You need to press the artery to the bone underneath it.



Pic. 12



Pic. 13

Points for pressing:

Temporal artery – temporal bone;

Submandibular artery – angle of jaw;

Carotid artery – transverse processes of V cervical vertebrae;

Clavicular artery – first rib in supraclavicular fossa;

Axillary artery – the head of the humerus in axillary crease;

Brachial artery – the humerus (internal edge of biceps) Pic.12;

Femoral artery is pressed with the fist in the inguinal fold. (pic.13);

Bleeding from shin and pes – press the popliteal area with fist and flex knee joint.

NB!

- You need to press, not to squeeze the artery;
- Pressure requires physical strength, that's why the duration of manual pressing is about 10 min.;
- It is impossible to transfer a victim during manual pressure.

Sometimes it is difficult to remember pressing points, that's why it is recommended to use an easier method of pressing - "direct pressure in the wound". Bleeding vessel is pressed through a sterile napkin or gauze dressing right in the wound (Pic. 14). This method is not allowed in the case of an open fracture or foreign body presence.



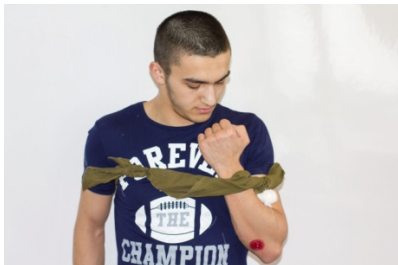
Pic. 14

Ultimate bending of the extremity.

This method is used in the case of bleeding from the forearm (forearm flexion) (Pic.15), from the shin (knee flexion) (Pic.16), from the thigh (hip flexion) (pic.17).

You need to put a roll of clothing or fabric under the joint, bend a limb as much as possible and finally fix the limb.

This method is not used for curing fractures and dislocations.



Pic. 15 Pic. 16 Pic. 17

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).**

<https://docs.google.com/forms/d/e/1FAIpQLSdNbVIhvmVCobfjUmrhfjdZSki5dX7siO0jznFDtSVEXpRi5g/viewform>