MEDICINE

Shock and Broken Bones

Shock which comes with severe injuries may be fatal unless treated. In case of broken bones, "splint them where they lie."

By JANE STAFFORD

Fourth in a series of atomic bomb first aid.

➤ SEVERE bleeding, bad burns, broken bones, crushing injuries, shell, bomb and bullet wounds all call for treatment of shock. Because shock is easier to prevent than to cure, first aiders are taught to begin treatment immediately without waiting for symptoms of shock to develop.

The kind of shock that comes with severe injuries is a state of collapse in which all body functions are depressed due to failure of the circulation. Severe shock is always serious and may be fatal.

Besides the original injury, the following factors may contribute to shock: pain, rough handling, improper transportation, continued bleeding, exposure to excessive heat or cold, and fatigue. The aged, the very young and the discouraged are apt to suffer more from shock. Remember these factors when you are giving first aid to an injured person, so that you do not add to the shock he has already suffered.

Symptoms of Shock

Most common symptoms of shock are paleness, a cool, clammy skin and a feeling of weakness or faintness. Perspiration on the forehead, around the lips and on the palms of the hands is another symptom. A weak, sometimes rapid pulse, nausea and vomiting are symptoms of shock. The patient in shock is often indifferent to what is going on around him and to questioning. Unconsciousness is also a symptom of shock.

These symptoms may not all show in one patient. Usually they develop gradually and the victim may seem perfectly all right at first, only to collapse later. Even a patient in deep shock may not show signs that the first aider can detect.

For these reasons, first aiders are taught that persons with even minor injuries should lie down, and that in every case of serious injury, shock should be treated. The only possible exception to this rule would be in the event of an atomic attack or other large scale disaster in which the first aider's first job after stopping severe bleeding might be to get the injured person out of the hazard area.

Loss of blood is one cause of shock. so when you stop the bleeding you are also helping to overcome the shock, or at least to keep it from getting worse.

First aid directions for treating and preventing shock cover four points:

1. Position. Keep the patient lying down flat. If the injury is severe, raise the lower part of the body a foot or so. If a chest injury makes it hard for the patient to breathe, raise his head and shoulders slightly and keep the legs flat. Never force an injured person to stand or walk except in the unusual situation where you may have to get him away from flames or falling walls. Even then it would be better to have him carried.

2. Heat. The idea is to keep the patient comfortable but not hot. The old idea of applying heat to a patient in shock has been revised because it is now known that coldness of hands and feet in such cases is due in part to constriction of the blood vessels. This is the body's way of making up for the deficiency in circulation.

So you try to conserve the body's heat without adding too much to it. Simplest method is to cover the patient with blankets, coats, newspapers or whatever is at hand. Remember to put the covering under as well as over him, to protect him from the coolness and possibly dampness of the ground. In hot weather, a small amount of covering may be enough. You do not want your shocked patient sweating. In very cold weather you may use hot water bottles to keep his body from losing heat. Be careful not to burn him. He may not feel the heat or be able to tell you it is too hot, but can nevertheless get a burn from too hot a water bottle.

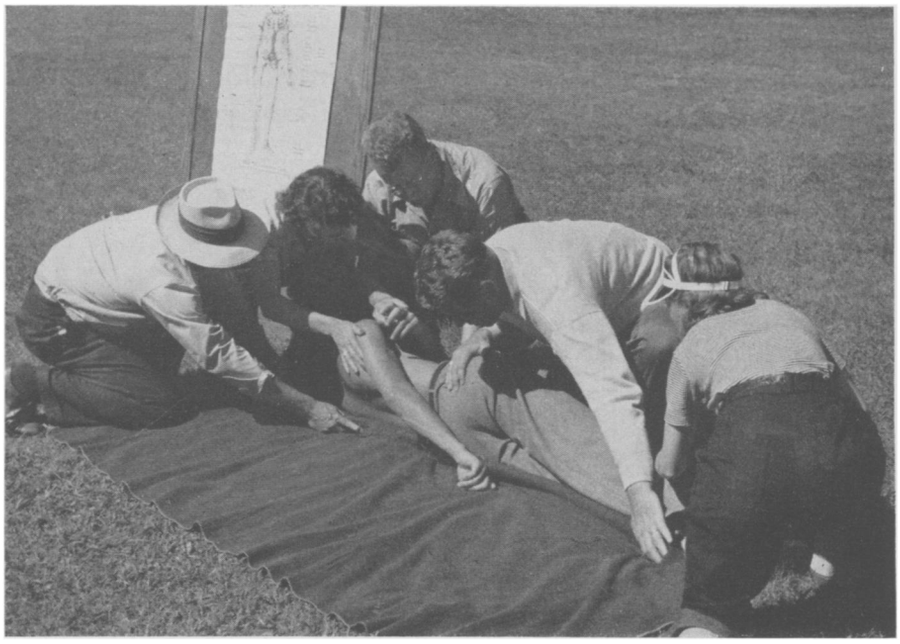
3. Fluids. Don't give an unconscious patient anything to swallow and don't try to pour fluids down his throat. But if the patient is conscious and can swallow, and is not nauseated, small amounts of warm water, broth, milk, tea or coffee may be given. The fluids will help keep him warm and will help replace the fluids he may have lost in blood due to the injury. A cupful every half hour is enough. You may need to feed it from a spoon.

4. Do not give stimulants. They have no value in the first aid treatment of shock. Avoid unnecessary questioning and handling of the patient but care for other injuries.

Prime Rule in Broken Bones

"Splint 'em where they lie" is a cardinal rule for first aid in case of broken bones. In case of large-scale disasters, such as an atomic bomb explosion, it may be necessary to move the patient out of a hazardous area before splints can be applied. The rule should be remembered, however, and applied whenever possible.

One reason for the rule is that any movement of the broken ends of the bone may further damage nerves and muscles and may break large blood vessels, causing



UP AND UNDER—First aid trainees at a Red Cross school practice placing a blanket under an injured person without lifting him from the ground.

SPLINTING BONES — Materials readily at hand, such as this newspaper splint or the pillow, jacket or first aid textbook itself, can be used to improvise a splint for a broken arm.

serious loss of blood. A second reason is to keep a simple fracture from becoming a compound fracture.

Simple and Compound Fractures

Fracture is the medical term for a break in a bone. A simple fracture is one in which the bone is broken but there is no connecting wound from the broken bone through the skin. A compound fracture is one in which the bone is broken and there is a connecting wound from the break to the surface and through the skin. The bone itself may have broken through the skin or the bullet, piece of flying debris or other object that broke the bone may have caused the wound.

A compound fracture is much more serious than a simple one because germs may invade the break in the skin.

Symptoms of a broken bone are swelling, pain or motion about the injured area, tenderness of the area when touched, and deformity. With a compound fracture there is the wound, which may be large or very small and may or may not have bone protruding through it.

Often the victim feels or hears the bone snap. If he can point to the place that hurts, the first aider may be able by moving his fingers gently over the place to feel the break. But don't manipulate it or try to move it to hear the ends grate. And never ask the victim to try to walk if you suspect a broken bone in the leg. It is dangerous and even if he could walk, he might nevertheless have a fracture that does not go all the way through the bone.

Broken Ends and Joints

If you suspect a bone is broken, keep the broken ends quiet and keep the adjacent joints quiet. Control shock. In case of a compound fracture, control bleeding and bandage a sterile dressing on the wound. If a bone is protruding, try to handle the injury in such a way that the bone will not slip back under the skin carrying germs with it and causing further damage.

Of course you will send for a physician in all cases of broken bones, just as you do in any other case for which you must give first aid. If you have to take the patient with a broken bone to the physician or hospital, you must be very careful that the ends of the broken bones are not moved at any time during the journey.

For this purpose, you may use splints if the break is in a bone of arm, leg, thigh or wrist. If you have to improvise splints, use as rigid materials as possible, and have them amply wide and long enough. Boards used as splints should be as wide as the arm or leg.

Splints should be long enough to extend beyond both adjacent joints, above the break and below the broken bone. Pad splints well, to reduce danger of cutting off circulation because of swelling of the part. For the same reason, examine every splinted part at least every 30 minutes and loosen the ties holding the splints if circulation is cut off, or if the part becomes too painful.

Fractures of neck, back and skull should be given great care because of the danger of damage to the brain and spinal cord. Brain concussion, or injury to the brain, may occur with or without a fracture of the skull. Unconsciousness, complete or partial, and for a short or long time is one symptom of concussion. For concussion, with or without fractured skull, keep the patient lying down, raise his head and shoulders slightly unless he is pale, and keep his body moderately warm. Do not give stimulants. Take care of bleeding and wounds.

In case of broken back or neck, keep the patient lying flat, don't let him sit up or raise his head, don't bend his neck, twist his body or flex his body. Try to keep his back, head, neck and body all in one line, or plane.

Transport on Rigid Frame

If he must be transported, this should be done on a rigid frame, taking great care to support head and neck carefully as he is slid onto the frame. Don't double him up or "jack-knife" him into the back seat of a car. Death or paralysis may be the result of such improper handling.

Symptoms of broken ribs are pain in breathing or coughing and tenderness over the fracture area. First aid for these consists in tight bandages put around the chest while the patient constricts it by exhaling. But if he coughs or spits up blood, a lung may be punctured. In that case, do not put on bandages. Keep him quiet and warm with his shoulders raised somewhat until the doctor arrives.

Another frequent symptom of rib fracture is shallow breathing. Deep breathing makes the pain worse. The patient may also try to keep part of his chest over the broken rib from moving with every breath by keeping his hand held tightly over it.

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