

bought. Thus through the use of symbolism the problem is brought close to the emotional attitude and enables the child to accomplish in a simpler medium, what is otherwise beyond his power.

It has been said that we do not know our thoughts until we express them. Children find themselves in this position, they cannot know their thoughts or their phantasies until they express them. The effort of expression itself clarifies and defines the thought, and enables the child to develop the tendencies that lie inherent in it. Play in childhood affords a means of expression: the child may work out in his own terms the phantasy that obsesses him. It has been said that the quest of the child's own relationship to his phantasy, is a fascinating problem, for he wanders back and forth over the borderland between complete identification with his phantasy, conscious makebelieve, and a kind of routine play that he knows is outside himself. Such play is wholesome and normal and releases the child's energies, in that it makes its own inner life objective, and subject to the moulding power of tangible reality. Other forms of play which help in the adjustment of the child to reality and environment will be seen in the variations of actual situations which may be enacted by the child. These may embody the fulfilment of recent longings, or life as the child would like it to be. Or again play may be a release from some feature of environment that is pressing too hard. The child may recreate in his play the same environment, but with the distressing features remodelled to suit his heart's desire.

Thus, for the child to attain well balanced, progressive growth mentally, he should have space in which to develop, time in which to dream and think, and opportunities of playing alone as well as in company with other children. Therefore provision should be made for a suitable environment, in which the child may develop at his own pace and in his own manner. It should include careful control of objective contacts and a sympathetic and judicious answering of his questions.

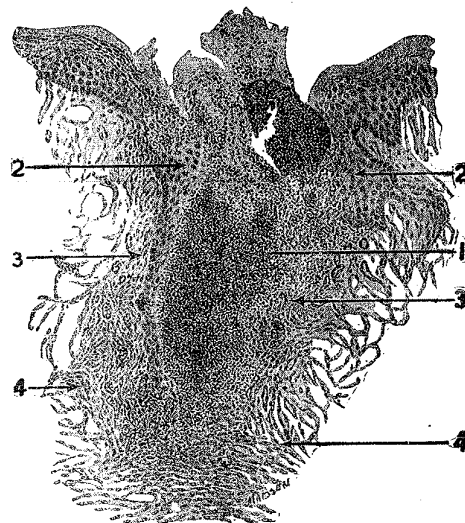
Snakebite

Treatment and Nursing Care

By *NETTIE YOUNG, R.N., Pediatric Supervisor,*
Robert B. Green Memorial Hospital, San Antonio, Texas, U.S.A.

Attended with superstition through the ages, snakes and snake bites are little understood by the majority of people.

The poisonous snakes of the United States are the pit vipers and the coral snakes. The pit vipers include thirteen species of rattlesnakes and two species of moccasins, the cotton-mouth or water moccasin, and the copperhead, or upland moccasin. The pit vipers can be distinguished by the following characteristics: blind pits on each side of the nose between the eye and nostrils (from which they derive their name). elliptical rather than round pupils, triangular heads, thin necks and stout bodies, with single scales on the under surface where harmless snakes have double



Accidental Wounds

Section through healing wound.

1. Dead cells and detritus.
2. Regenerating epithelium.
3. Regenerating connective tissue.
4. Budding new capillaries.

The combination of glycerine with iodine or boric acid is considered by many physicians as ideal for the dressing of wounds.

There are probably few products in which this combination of ingredients is so well compounded and proportioned and which so well fulfills the desiderata for a satisfactory surgical dressing as does

Antiphlogistine

It is bacteriostatic, decongestive and pain-relieving.

Sample on request

The Denver Chemical Mfg. Co., 163 Varick Street, New York

Muller & Phipps (India) Ltd., P.O. Box 773, Bombay

When ordering please mention The Nursing Journal of India

scales, and large fangs that fold back against the roof of the mouth. Coral snakes have black and red bands which are separated by narrow yellow stripes completely encircling the body.

The bite of a poisonous snake, in contrast to that of a non-poisonous snake, is characterized by intense pain, œdema, and discoloration of the surrounding area. Two fang marks are usually found, though in some cases there will be only one. Approximately 75 per cent. of snake bites are on the lower extremity and 22 per cent are on the hands and arms. A snake bite is dangerous to man in direct proportion to the size of the snake.

It was formerly thought that snake venom was absorbed through the venous system and stayed in the area of the bite for only a few minutes. Experiments on dogs have proved this to be untrue, except in the few cases in which the venom is injected directly into a vein. In such a case, death comes in a short time. If the bite is in an area with much fatty tissue, there may be a tendency for the venom to be absorbed more slowly, but this has not been definitely proved. If, however, the bite is in an area where the skin is tightly drawn, in the fingers or toes, the removal of the venom by mechanical suction is more difficult and more venom is absorbed.

The venom may stay in the immediate congested area for as long as twenty-four hours and is spread through the lymphatic system. According to Dudley Jackson, M.D., "pure, fresh snake venom is too violent an irritant to the animal tissue to be absorbed and eliminated, and lymph is poured out to dilute it for absorption." Hæmolysis, or a breaking down of the blood cells, occurs, and a large quantity of bloody serum containing a weaker solution of venom is accumulated in the tissues. Dr. Jackson has also shown that there is a constant absorption from the upper edges of the swelling where the venom has been diluted. When a stronger solution spreads, it fills the tissues with which it comes in contact. If it remains in the tissues, hæmolysis, proteolysis, and, finally, gangrene occur. The red blood cell count and hæmoglobin may drop markedly. When a great quantity of the venom has been absorbed, grave systemic symptoms occur and death is not far off.

Many remedies have been suggested and experimented with in the proper treatment of snake bites but most of these have had no therapeutic value. Many people are bitten by harmless snakes, and others are bitten by poisonous snakes that do not inject their poison under the skin. These people recover without any treatment. A large majority who are bitten, however, receive some of the venom and need proper treatment.

Antivenin is one of the most commonly advocated methods for treating snake bites but it is expensive and is needed in large doses. Its value is that it will neutralize the poison that is in the blood in an uncombined form. This, however, is only a small proportion of the poison injected by the snake. The serum is best used in conjunction with mechanical suction. A report of 105 cases treated at the Robert B. Green Memorial Hospital is San Antonio, Texas, indicates that 14 per cent. of the patients who were treated with potassium permanganate, magnesium sulphate

packs, etc., died. Among those who were treated with serum only, in one to five-ampoule doses, there was a 13.95 per cent. mortality. Those treated without serum occurred between 1917 and 1927. Those treated with serum have been since 1927. In another 100 cases treated at the same hospital since 1927, there was only one per cent. mortality when the routine treatment described below was used.

Early treatment is most important. Patients have been saved who have come in as late as six to eight hours after being bitten, but better and more rapid results are obtained if treatment is started early.

When a patient with snakebite arrives in the emergency room of the Robert B. Green Memorial Hospital in San Antonio, all tourniquets applied by others are removed and a tourniquet of rubber tubing is reapplied by the physician, not more than half an inch above the site of the bite. This is tight enough to obstruct the lymphatic return but not the arterial or venous flow of blood. It may be loosened for a minute or two every ten or fifteen minutes, depending upon the opinion of the physician, and is moved upward as the swelling advances. The tourniquet is applied just tight enough to allow one finger to slip under the rubber. If it is too tight and obstructs the flow of blood, the area becomes cyanotic.

After the nurse has prepared the area of the bite with $3\frac{1}{2}$ per cent. iodine and 60 per cent. alcohol, the doctor injects novocaine under the skin and makes cruciate incisions through the skin at the site of the bite (approximately an eighth of an inch deep, but not deep enough to cut the veins). By means of suction cups which can be adjusted for use on either large or small surfaces, suction is applied. The bulb is pressed together with the fingers and the cup is placed directly over the incision, then released. The suction thus produced causes a small amount of tissue at that point to be raised up into the cup. A serous bloody fluid which contains some snake venom is drawn out of the incision. When the cup falls off, it is replaced, or, if it has not fallen off within a few minutes, it is removed and reapplied. The suction cups are kept in a 1:2,000 solution of mercury cyanide when they are being used and are boiled between cases.

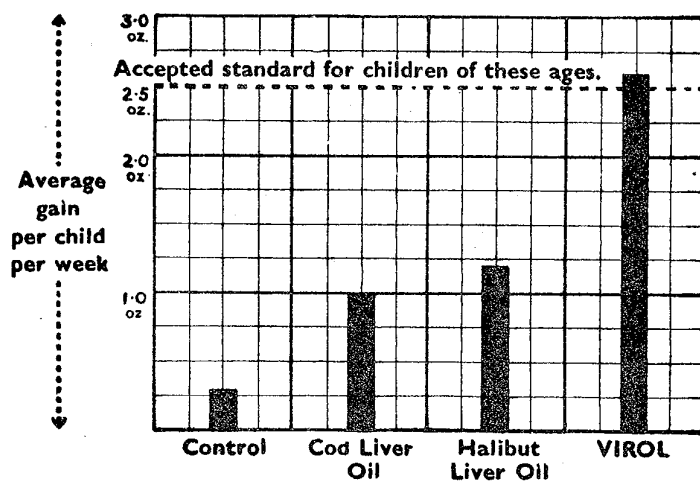
The doctor makes a circle of cruciate incisions about one inch from and around the area of the bite, and applies suction. A second circle of incisions is made about one inch from the first to permit application of suction cups, and sterile hypertonic salt solution, used to irrigate, acts as a mechanical lavage. The tourniquet is moved as the swelling advances. If the bite is on the arm or leg, more incisions are made so that they encircle it. Suction is continued for forty minutes to one hour in the emergency room under aseptic conditions. Ten to twenty cups are used simultaneously.

To relieve pain, the doctor will probably order morphine or other opiates to be given in therapeutic doses. Absolutely no whiskey or alcohol is given for it tends to increase the rate of the poison. Other supportive measures may be ordered as indicated: external heat, fluids by hypodermoclysis, intravenous infusion, etc. Patients are usually typed for blood transfusion to avoid possible delay.

After the patient is admitted to the ward the treatment is continued by the physicians and nurses. Suction cups are applied

The Influence of Virol on the Growth of Children

Children under regular medical observation in the age group $1\frac{1}{2}$ to 5 years were given, during four periods of six weeks, each of the following supplements in turn: Cod Liver Oil, Halibut Liver Oil with milk, and Virol, a control period being included during which no supplement was given. The children were given the diets in different sequence, the disturbing factors of climatic and individual variations being thus effectually eliminated. The following chart plainly shows the result :—



It is clear that vitamins alone cannot supply those nutritional factors so often deficient in the diet of children, and which these investigations show that Virol does supply. Virol is a physiologically balanced food in which marrow fats, extract of red bone marrow, malt extract, eggs, lemon syrup, and mineral salts are so finely emulsified, that it is readily digested and assimilated.

Moreover the vitamins are not destroyed in the process of manufacture, but are present in Virol as sold to the public.

Agents: A. H. WHEELER & Co., Sudama House, Witett Road, Ballard Estate, Bombay.

twenty minutes out of every hour for a period of twelve to twenty-four hours, followed by hot hypertonic magnesium sulphate compresses. Fluids are given freely. If the swelling continues to ascend, more cruciate incisions are made and suction is applied. When the hæmoglobin and red blood cell count show marked decrease, a transfusion is given.

Tetanus and gas gangrene antitoxin are usually given (following a skin test) since the mouths of most snakes contain tetanus bacilli and Welch bacilli. Much of the tissue destruction is due to the gas-forming bacilli. Wounds are treated as contaminated after the above treatment is continued and more incisions are made as long as there is any oedema.

The role of the nurse who cares for a patient suffering from a snake bite is important. Calm, speed, and conscientiousness are needed. Speed is essential if life is to be saved. The application of suction must be conscientiously carried out on schedule. Probably in no other condition is close observation and prompt reporting of all symptoms more necessary. The nurse must observe the patient for further swelling, for weak, rapid pulse, cold extremities, extreme restlessness, anxiety, or air hunger. The afflicted part of the body should be lower than the remainder of the body to help retard the absorption of the venom. Some authorities believe that part of the venom is absorbed through the colon and that colonic irrigations of saline or sodium bicarbonate are helpful in eliminating it.

If intravenous infusions of saline or glucose, hypodermoclysis, or transfusion are indicated, the nurse must have all needed equipment ready, and she must give capable assistance.

Precautions are taken to prevent burns from the hot packs. If the necessary precautions have been taken, one need not be alarmed at blisters that occur on the swollen area. They are caused by the action of the venom, and are incised or aspirated by the doctor, for they contain some of the diluted venom. Although sterile, the nurse is responsible for preventing infection. Aseptic technique is observed when applying suction or hot packs, and when irrigating the incisions.

The prescribed diet usually consists of liquids until the patient is able to tolerate a soft or general diet. Fluids should be given in large quantities.

The patient and his relatives are usually very excited and nervous. A calm nurse can do much to allay fears which are a natural result of such an accident.

Experiments show that the best results are obtained when as much of the poison from snake bites as possible is removed by mechanical suction through cruciate incisions. If serum is given, it is best used in connection with mechanical suction, in fairly large doses. Hot packs are usually continued for twenty-four to forty-eight hours after the suction is discontinued. Sterile dressings are applied over the incisions after the active treatment has been discontinued. In an uncomplicated case the patient is ready to be discharged in five to seven days after he has been bitten and treatment instituted. It is much safer to "overtreat" a patient than to take chances with human life by "undertreating."

By courtesy of *The American Journal of Nursing*