patient was delivered by mid-forceps at 9:48 a. m., without anesthesia. She was still unconscious, and so restless and uncontrollable that it was utterly impossible to maintain an aseptic technique. The pulse rate immediately after delivery was only 76. The uterus contracted promptly and firmly. The postpartum blood loss was slight. The child was in good condition and cried immediately. Its color and breathing were good from the beginning. Birth weight was 6 pounds 12 ounces.

The mother's pulse rate dropped to as low as 56 during the first twenty-four hours postpartum (digitalis effect?). She gradually regained consciousness, but was not well oriented or fully rational until late in the evening, about thirty-six hours after the administration of the drug. The subsequent course was uneventful.

COMMENT

The essential findings brought out in the foregoing case of paraldehyd poisoning may be summarized as follows:

1. There was a total loss of consciousness and a delay in its recovery, until long after the return of the reflexes, muscle tonus, and voluntary movements.
2. There was an alarming depression of the circulatory system, as indicated by the tachycardia, hypotension, and accelerated fetal heart rate.
3. The respiratory system was powerfully stimulated, as shown by the acceleration and marked increase in depth of respiration.
4. Renal activity was apparently unaffected, judging by the voluminous urinary output, and the essentially negative report on the specimen of urine examined.
5. Uterine activity was completely abolished for over twelve hours.
6. The survival and complete recovery of the patient, following the administration of a quantity of paraldehyd eight times in excess of the average dose, confirms the view generally held that there is a wide margin of safety in the therapeutic use of the drug.

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GIVE YOUR KNOWLEDGE A CHANCE

By ALANSON WEEKS, M.D.
AND
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IN the postoperative state, there are usually marked changes in certain relatively-fixed values in the blood. The acid-base balance is profoundly affected by the various factors, anesthesia, starvation, toxemia and others, as is also the blood-sugar concentration. A change to the acid side in the body is readily shown by the presence of acetone and diacetic acid in the urine, and daily tests should always be made for the presence of these substances. Fortunately, these tests are of great simplicity, but they are without question the most valuable that can be made in the postoperative state. Blood chlorid determinations are probably second in importance—a deficiency of chlorid, whether by vomiting, continuous gastric lavage or sweating, is invariably found in patients with ileus and distention, and these symptoms are greatly alleviated by restoring the blood chlorid value. The need of sugar in the postoperative state is not indicated by blood sugar determination; in fact the patient in marked acidosis and, therefore, in need of sugar, may have a blood sugar of 140 or more. This, however, is not a contraindication to the administration of intravenous glucose. The determination of the blood NPN and creatinine is of value as indicating how far the patient has slipped from normal; these values may return.

The following three cases are of interest in showing what symptoms may be presented when the blood chemistry "goes awry."

REPORT OF CASES

CASE 1.—Male, age thirty, was operated on, in Southern Oregon, two weeks previously for perforated gastric ulcer. He had a stormy time for the first four or five days, and then improved. Details of the postoperative treatment are not available, but, after the first five days, he was "fine." During the last few days he began to become distended and commenced to vomit. The accompanying nurse said the vomiting was fecal.

A diagnosis of intestinal obstruction was made, and the patient advised that immediate operation would be necessary. His brother, who is a doctor, refused the operative procedure, and decided to send him to San Francisco. On arrival, the patient was in shock. He was perspiring profusely; temperature, subnormal; systolic blood pressure, 70; tongue, dry; abdomen, soft and not distended; red blood cells, 4,900,000; hemoglobin, 90; white blood cells, 14,700; polymorphonuclears, 75; blood chlorid, 258; N.P.N., 92; creatinin, 9; sugar, 115.

Treatment consisted of glucose intravenously, continuous gastric lavage, hypertonic salt solution, eserine hydrochlorid 1/100 b.i.d.

The above treatment was continued during the next six days, by which time the patient had practically completely recovered. There is no doubt but that these symptoms were directly the result of disturbances in the body chemistry, which were discovered immediately by the house staff at St. Luke's Hospital on the patient's admission, and the simple proper treatment was instituted at once, with a prompt recovery.

CASE 2.—Less spectacular is the following account: Patient, aged eight, is operated for a perforated gangrenous appendicitis with drainage. For the first several days the child showed a marked toxic reaction, such as could well be expected. She was treated with hot compresses, glucose intravenously twice daily, and eserin hydrochlorid hypodermically three times daily and continuous rectal drip. Five days later the above treatment was considered no longer necessary. The temperature remained to around one hundred, and a soft diet was permitted. There continued to be considerable drainage from the wound, although the drain had been worked out a little each day, and removed entirely on the third day.

Fourteen days after operation the patient's condition is as follows: Temperature between normal and one hundred; abdomen is soft; drainage has practically ceased; there is some soreness in the right flank, but the child is playing around in the bed; she is on a soft diet, which apparently is adequate.

On the fifteenth day the child is nauseated, when she wakes up and has some abdominal distention. About noontime, she vomits her lunch and soon thereafter some bile-stained fluid. The child looks very different from the previous day, is listless and crying. Peristalsis heard, but not very actively. Intestinal obstruction is seriously considered. Analysis of the urine at this time shows unexpectedly the presence of much acetone and diacetic acid (obviously the diet had been below maintenance in carbohydrates), and all these symptoms were relieved in a few hours with intravenous glucose, promptly to normal with adequate administration of fluid either as sodium chlorid or glucose solutions.

This occurred in the Children's Hospital, with all the patient's doctors seeing her daily, and all feeling that there was no longer any necessity of having the urine examined daily for diacetic acid and acetone as is our custom for some days following operations.

CASE 3.—The following record is given to show how easy it is for medical men to be influenced too easily by the opinion of another doctor, who had seen the patient before, and to continue along the same line of thought without a proper examination.

The patient, B, a young woman thirty-five years of age, was in a hotel in the south, January 12. She attended an ordinarily happy party with the ordinary things to eat and drink, and returned to her hotel room not long after midnight, when she commenced to vomit. She vomited so incessantly that within a day she developed hemorrhages under her conjunctivae, and naturally developed pain in the upper abdomen. The hotel doctor saw her and was told by the patient that she had had a diagnosis of gall-bladder disease made some months before, at her home. She did not receive very much treatment, and returned to San Francisco to a hospital on January 15, having almost continuous vomiting and being evidently very sick. She was told by the medical man in the south that she was suffering from gall-bladder disease, and should have an operation for this condition. She called her regular physician who found, of course, the painful upper abdomen. Continuing the gall bladder idea he asked one of us, on January 18, if we would see her from a surgical point of view, as it looked to him as though she would need an operation upon her gall bladder.

On talking to the doctor, over the telephone and listening to the story, he was requested to have the complete blood chemistry examinations done, with the complete blood counts and urine analysis. On meeting the doctor in consultation it was discovered that the nurse had procured no urine for examination since the patient arrived in the hospital, and the patient, when seen by us, was unable to pass any urine, the excuse being given, as before, that the patient always went to the bathroom herself.

The report of the blood chemistry then came in as follows:

Chlorids, 528 mgms. per cent; NPN, 89 mgms. per cent; blood sugar, 147 mgms. per cent.

This definitely showed kidney damage, but even without the blood chemistry being done, as soon as any urine could be procured it was found to be almost pure blood, and the patient had no surgical condition of the abdomen.

The patient gradually, day by day, increased the amount of urine passed and slowly cleared up so that by the 28th of January the NPN was normal. Any treatment she received had very little to do with this happy result; but if even a simple and always expected examination of urine on arrival at the hospital had been done, her various doctors would have been saved much embarrassment.

COMMENT

These are rather outstanding evidences of how any one of us, through carelessness at any time, can fail to make a simple, easy diagnosis because we have not used the knowledge we actually have, have been careless in our observation, or have not given proper attention to detail. Our laboratory men offer us a great deal; let us pay them by using this knowledge.

It has been suggested to us that the title of this paper should have been: "Give Your Patients a Chance."

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A PORTABLE OXYGEN UNIT

By FRANK C. REYNOLDS, M.D.
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OXYGEN therapy in pneumonia is now a standard procedure. Its indications and the results to be anticipated are well known. In small communities, however, the necessity of expensive equipment has greatly limited its use. A portable oxygen unit was devised by the author that could be easily assembled anywhere, and made quickly available in an emergency.

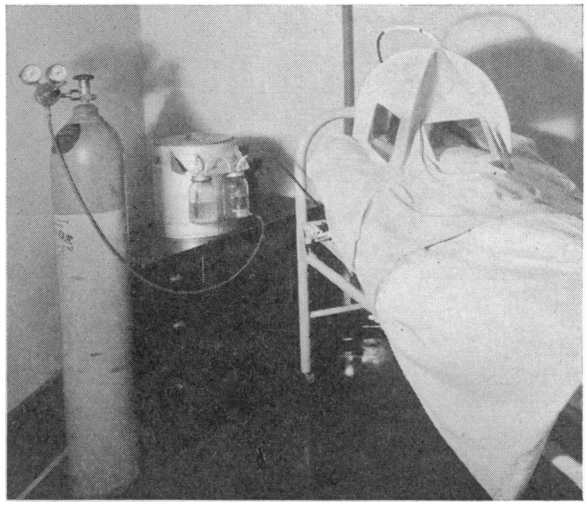

Fig. 1.—A portable oxygen unit.

Commercial oxygen is both economical and easily procurable, while medical oxygen is not. The large tanks contain approximately 6,230 liters, sufficient to maintain a rate of flow of eight liters per minute for about twelve hours. A standard welder's oxygen-regulating valve, with two gauges, was found satisfactory if the outlet is provided with a pin-hole opening to maintain a constant rate of flow. Calibration of this valve is simple, as a flow of 20 cubic feet per hour is equivalent to nine liters per minute.

To provide the necessary cooling to compensate for the increased humidity in bubbling the oxygen through water, a small cork-lined ice chest of the portable type was used. Eight coils of three-eighths inch copper tubing were soldered to the inside of this chest, leaving sufficient room in the center for approximately twenty pounds of cracked ice, which provides adequate cooling of the oxygen and greatly increases the comfort to the patient.

Two mason jars are attached to the side of this chest at the outlet of the coil. The first contains water, so the oxygen may pick up moisture as it passes through. The second one is dry and catches any excess vapor, thus preventing a fine spray from striking the patient within the tent.

The tent, constructed to fit over the head and shoulders of the patient, is 18 inches square at the base. The base of the frame consists of three-sixteenths inch iron rods, except at the front, and supports arch from each corner, to meet in the center at a height of 20 inches. It is here that the inlet tube is placed. This size has been found to be quite satisfactory. The frame is covered with 10-ounce canvas, treated with waterproof canvas dressing. This covering extends 14 inches from the frame on each side and tapers out 18 inches from the front in order to be long enough to tuck under the patient or fastened to the bed when restraint is necessary. Celluloid windows, 7 x 10 inches, are placed in both sides and the front, to provide light.

The value of this unit lies in its simplicity, and that it can be quickly assembled where the larger apparatus is not available.

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