

## SOME CONSIDERATIONS ON THE AFTER MANAGEMENT OF ABDOMINAL SECTIONS.\*

BY

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IN saying what I desire to present on the above topic, I shall assume that proper care was exercised to insure the best possible condition for operation, which should include the previous building up of the patient by hygienic measures, proper diet, the use of such medicines as would put the digestive, eliminative, nervous, and muscular systems in the best possible condition to withstand the shock and debility incident to the operation, with the patient's vital powers raised to the highest degree of resistance. This will include such a wise management of the case on the part of the attendant as will relieve the mind of anxiety, which in some cases demoralizes the patient to such a degree as to menace the results of surgical interference, and the safety of the patient.

In reviewing my personal experience I am led to the conclusion that the principal and by far the most frequent disturbing condition after laparotomy requiring treatment is flatulence. The accumulation of gas in the intestinal tract is present to a greater or less extent in a majority of cases. The principal causes are reversed peristalsis, intestinal paresis, and the effect of the anesthetic.

*Nausea and Flatulence.*—The causes of nausea are multiple and should be carefully differentiated. If reversed peristalsis continues, nausea, or nausea and vomiting will follow. Among them should be further noted the results of anesthesia, shock, peritonitis, uremia from suppression of urine due to the anesthetic, and the nausea and vomiting induced in some patients by the administration of mor-

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phia, and by septicemia. The local influence of hot water on the nerves of the stomach to allay both nausea and vomiting is well established, while stomach irrigation often affords marked relief. I usually commence the use of  $\text{Si}$  to  $\text{Sii}$  of hot water as soon as it appears after the operation.

In persistent functional vomiting small doses of cocaine, gr. 1-12 to 1-10, given by mouth, are very efficient, acting at the same time as a powerful nervous stimulant.

I seldom give anodynes except in conditions of pain, making a possible exception in cases when peritonitis was present prior to the operation, or other structures involved in the operation were so friable that peristalsis should be prevented for a time, or in cases following intestinal anastomosis. Its administration for the relief of pain is admissible and perhaps mandatory. It is a matter of much moment what anodyne is selected. Ordinarily I use codeine hypodermatically in doses of gr.  $\frac{1}{4}$ - $\frac{1}{2}$ , or more if required. While its power to relieve pain and check peristalsis is much inferior to that of morphia, its lesser disturbance of the nervous system, checking of secretions, and tendency to induce constipation makes it an agent of great value. It is imperative that a reliable preparation be used. Unless one knows the susceptibility of the patient to the disturbing influence of morphia, especially its liability to induce nausea with vomiting, there is no way of knowing whether these symptoms are the result of the drug, whether it is due to the anesthetic, or to some independent cause connected with and growing out of the patient's condition. A grain or two of codeine may be taken hypodermatically without discomfort, given in divided doses until the desired results are obtained. In troublesome cases of continued nausea the administration of small doses of cocaine, gr. 1-10 or 1-12, exercise a salutary sedative influence on the nerves supplying the stomach, and is attended with happy results. Either the nausea or flatulence, or both, may disappear in a few hours after operation.

Occasionally the flatulence is of longer duration, and frequently very persistent. When it persists, it may be necessary to use salol or some other intestinal corrective. Except in conditions already noted, efforts to evacuate the bowels should be instituted within twelve to twenty hours subsequent to the operation, and in some cases earlier.

In these conditions the giving of drastic cathartics, vegetable or mineral, is of doubtful expediency. Should the feces become hardened, high enemata containing ox-gall are useful, and a simi-

lar administration of warm olive oil facilitates an evacuation. An alum enema in reversed peristalsis often has great efficiency.

Not infrequently the rectal tube, passed high enough to allow the escape of the imprisoned gas, will add greatly to the comfort of the patient.

Among the newer remedies for the relief of intestinal paresis is the alkaloid of the Calabar bean. Salicylate of physostigmine, given in doses of gr. 1-100 to 1-50, or even more, hypodermatically, repeated once in four hours, seems to induce a powerful contraction of the circular fibers of the intestinal tract.

Fortunately the vomiting of anesthesia subsides as the blood is freed, by respiration, of its presence. If due to peritonitis, the treatment must be directed to a removal of the cause. Testimony is increasing that ice, or the abdominal coil filled with ice water, has some controlling influence in the treatment of peritonitis. Drainage, with the shoulders of the patient elevated to a greater or less degree, has been proven by the Fowlers to be surprisingly effective in septic peritonitis.

If we except peritonitis of traumatic origin, the plain indication in all these conditions is evacuation of the bowels. In presence of nausea with or without vomiting cathartics administered by mouth are unlikely to be retained, and the ability of the stomach to absorb fluids is lessened and often abolished. Under this condition calomel may act in a very salutary manner. Given in one-tenth or one-fifth grain doses, hourly, it is sometimes most effective. The antiseptic and sedative influence of bile on the intestinal tract is too well known to require comment. If, as has been claimed, the stimulative effect on the secretion of bile prevents the resorption of the bile, as is usual in health, its value is easily seen. Following or associated with this a high enema of half a pint or a pint, containing from one to three drams of sulphate of magnesium, repeated once in four hours, is usually effective.

The passage of gas by rectum after laparotomy is always a sign of hope to the operator and a source of relief to the patient. Liquid stools at this juncture are an added proof that reversed peristalsis or incipient paresis of the intestines has diminished or has disappeared. My experience with cracked ice, or cracked ice and champagne, once so popular, is on the whole disappointing, and I now use it infrequently. The power of ice to lessen thirst is too often delusive. In fact in health the holding of ice in the mouth for some time, creates an irritation resulting in thirst, which is pro-

longed surprisingly after its use is discontinued. Partial or complete suppression of urine is occasionally the essential factor in producing nausea and vomiting. Its relief depends on prompt establishments of the renal function. In order of efficiency the following remedies promise most; dry cupping; catharsis by high rectal enema containing salines; rectal irrigation, and if the patient's condition permits, particularly if accompanied with dry skin, one-tenth grain doses of pilocarpin. In septic conditions involving the abdominal contents, prompt catharsis, pelvic drainage with the shoulders elevated when drainage is admissible, with the use of antitoxins, and free stimulation are the measures most likely to conserve the life of the patient.

*Diet.*—The diet of patients after abdominal section calls for the greatest circumspection, always following the rule that nourishment, by the mouth, before the stomach retins or digests it, is positively harmful. My custom usually is to commence the use of hot chicken or mutton broth as soon after laparotomy as it is retained and digested. This may be succeeded by predigested albumin and the juice of lightly broiled steak, as soon as the stomach will tolerate it, to be succeeded by farinaceous food—preferably well-cooked rice. The notion that animal food alone is applicable in these cases is based on a misconception of the needs of the economy and its supposed unfitness to fulfil the indications present. As a rule, the use of milk, unless it has been peptonized, had better not be ventured upon. The liability to a form of mild ptomaine poisoning from undigested curds of casein has doubtless added materially to the avoidable mortality of laparotomies. When the appetite is lacking and the stomach will not digest food, resort should be had to high nutritive enemata of digested milk, concentrated beef juice, and if indicated, whiskey. In this connection the nutritive and sustaining power of alcohol should not be neglected. When the digestive power of the alimentary tract is re-established a full diet, tempered with proper discretion, should be employed.

*Shock.*—The avoidance and mitigation of shock in abdominal operations calls for the most careful observance and treatment on the part of the operator. The predisposing causes embrace every influence which impairs the normal vigor and vital resistance of the patient. The exciting causes of shock are direct traumatism, including the exposure and manipulation of the pelvic contents, hemorrhage, and septic conditions, to which must be added the influence of anesthesia and abnormal reduction of bodily temperature.

Shock is attended with grave disturbances of the sympathetic nervous system. Vasomotor paralysis and vasomotor spasm mark its onset and continuance. The causes which lead to it are multiple and complex. These vasomotor disturbances appear differently in different cases, or perhaps alternate in the same case.

In one case there is inhibition of function, in another overstimulation. The causes which lead to general capillary stasis with capillary dilatation must be distinguished from those which are due to capillary spasm and resulting spasm and closure of the same vessels. From the physiological standpoint, digitalis or ergot should relieve the former, and nitroglycerin the latter. There must, however, be some limitation as to the application of remedies from their established physiological effect only. Unless their therapeutic influence corresponds with their physiological effect their use should not be carried too far.

A correct analysis of the cause of shock leads to correct and rational treatment. Sometimes two or more causes operate simultaneously, and it is to meet the real indication that correct deductions are so needful. This embraces the after-influence of anesthesia and internal hemorrhage. So, too, the influence of traumatism, *per se*, and hemorrhage may puzzle the attendant. Persistent hemorrhage (which demands opening of the peritoneal cavity) is attended with persistently increasing muscular weakness and rapidity of the pulse, and is not so susceptible to relief by stimulation of any kind as the depression due to traumatism. In fact, the former may be aggravated by any heart stimulant.

Without attempting to follow out any exclusive line of reasoning as to the physiological or therapeutical application of drug medication, both on the circulatory and nervous systems, I desire to make some suggestions as to their rational and empirical use.

Exsanguination from hemorrhage, causing an arrest of muscular contraction of the cardiac muscle, arising from absence of blood in auricle or ventricle, cannot be remedied by any form of heart tonics. Change of position, which by gravity facilitates the return circulation, may be useful. The rational remedy is to give the heart its natural stimulus—a new volume of fluid. No time can be lost in subcutaneous saline injections, but the sterile normal salt solution must be introduced directly into the venous circulation. In operations following ectopic rupture, where the bleeding points had been secured, I have seen apparently hopeless cases, absolutely pulseless, quickly rescued by injecting a pint and a half of salt solution into the median basilic vein, and succeeded by rapid

convalescence, when cardiac and general stimulants had been wholly unavailing. When, in shock, there is over-stimulation of the cardiac inhibitory apparatus, attended with infrequent pulse and vital depression, atropine is the remedy, *par excellence*. The paralyzing influence of atropine on cardiac inhibition is so prompt and salutary, as to make it, so far as our present knowledge of drug action goes, the rational therapeutic and physiological remedy.

When shock manifests itself by cardiac muscular weakness and want of nervous energy, strychnine hypodermatically, is among the most efficient remedies, gr. 1-40 or 1-50 once in three hours, not exceeding a maximum dose of gr. 1-6 or 1-5 per day. Perhaps next in efficiency are sparteine sulphate, gr.  $\frac{1}{8}$ - $\frac{1}{4}$ , or caffeine, gr. i. To get the best results from sparteine it should be administered once in three hours. The former belief that a grain in twenty-four hours was a maximum dose is a mistake. Double that quantity may be given unless its power is manifest.

After all, when shock is profound, minute doses of morphine sulphate are among the most powerful stimulants, and superior to most for prompt and sustained effect.

*Bodily Temperature.*—The attendants and nurses who lack a lively appreciation of the necessity of maintenance of temperature up to the normal standard of the body subsequent to laparotomy, are liable to create a loophole of danger, into which their charge may unwittingly fall. I say "attendants and nurses," for if the attendant does not recognize its importance, the nurse can hardly be held responsible. Subnormal temperatures demand *immediate attention*. Keep the patient dry and warm. When subnormal temperature is attended with profuse perspiration, drying the skin is of the highest importance. Evaporation of moisture always depresses temperature. To combat this, one aid I have never seen mentioned, but to which I have resorted for years, is the application of dry heat, for the double purposes of stimulating and drying the cutaneous surface. This is accomplished by enveloping a piece of hot brick or pottery in linen cloth, which is passed slowly over the skin, underneath the bed covering and clothing, by which area after area is made dry and warm. By such method the best effect is most speedily obtained. Unless the condition of the circulation and pulse contraindicate, atropin, gr. 1-100, should be used hypodermatically.

In conditions of great depression, due to inadequate power of circulation, the lower portion of the trunk should be elevated and

the head lowered. This aids in restoring and maintaining a proper supply of blood to the brain.

To want of discrimination concerning special heart and nerve stimulants, with imperfect appreciation of their application, judged first from their physiological action, second, by their therapeutic effect, and the exact indications for their use, is chargeable some of the disasters which mark the work of well-meaning and skilful operators.

*Position.*—The position of the patient in bed after laparotomy has received too little consideration. Enforced immobility of the patient is in most cases a species of refined cruelty. Without entering into a discussion of the causes of the atrocious backache which usually follows laparotomy, its relief is entitled to consideration. First, the sagging of the spinal column occasions a dragging on and weariness of the lumbar muscles which needs relief. Often a hard pillow or unyielding roll of cloth, lifting the small of the back, is a source of great comfort. Elevation of the knees tends to relieve the tension, and is grateful. Intestinal distention is an important factor in this ailment, and its relief is most grateful. The pains of flatulence must have appropriate treatment. Enforced extension of the legs is usually uncalled for. Too often, after the anesthetic, the head has no support of the pillow. This increases epigastric tension and often occasions unnecessary distress. Raise the patient's head to the degree most comfortable. Except after intestinal anastomosis, or the suturing of friable structures, begin as soon as possible without augmenting abdominal pain or tension, to roll the patient from side to side, until the most comfortable position is found. When for sufficient reason rigidity is required, give lateral support to the thighs and legs to relieve the involuntary strain which follows effort to prevent rolling of the legs. In changing the position of the patient mechanical support is required; do not rely on some compressible material like a soft pillow. Use something of more resistance—a tightly rolled blanket, a book, or some other incompressible object—covered with something soft. These considerations add not a little to the sum total of comforts which count in the ultimate finals of success or failure.

1045 PROSPECT PLACE.

#### DISCUSSION.

DR. JAMES F. BALDWIN said the paper contained points that were at variance with what had been the teaching of some surgeons for a number of years. The essayist had referred briefly to the use of opiates, morphia or codeine after abdominal section. The

speaker saw no objection to the use of the stronger opiate—opium, especially for the first night. He was pleased to hear the essayist refer to the moving of the patient from side to side by the nurse for a few hours following operation.

As to the use of dry heat following operations, especially if there was a tendency to subnormal temperature, the form of heat he had found best and most comfortable and satisfactory was the use of electrically heated pads; they weighed practically nothing; they gave a uniform temperature; they were adapted to the irregularities of the body, and there was no danger of producing any burns.

Another point which the essayist mentioned, but did not emphasize, was the use of fluids after operation. The teaching of Tait, he believed, was that no fluids were to be given for forty-eight hours after operation, no matter how much the patient suffered. For the last two or three years he had been using water freely as the patients called for it. The patient would drink it freely the stomach was washed out; the ether was gotten rid of, and since doing this patients had had much less suffering from prolonged vomiting. Hot water relieved thirst. Cracked ice was a delusion and a snare, and very unsatisfactory.

DR. FRANCIS REDER of St. Louis, Mo., said there were some patients who did not require any attention after laparotomy. Then, again, one would meet with cases where everything one did would afford no relief. He was particularly gratified at the allusion of the essayist to the care of the patient relative to position. This could be left to the nurse when she was familiar with her physician's directions; but, as a rule, he believed it was the duty of the surgeon to look after the patient, particularly for the first forty-eight hours after operation. The only exception he took to the moving of the patient was after operation. He thought there was danger attending the moving of a patient forty-eight hours after she had been subjected to a laparotomy. He had had a number of unfortunate cases in the way of thrombotic formations, and in some cases one should avoid moving or handling the patient. Sometimes these patients must be moved. He thought it was well to support every part of the patient's body, because no one knew, unless he had undergone a laparotomy, what it was to suffer from backache. By relieving all strain, there was a tendency to give the patient comfort, and great comfort was necessary for the first forty-eight hours to insure a happy result.

DR. LEWIS S. McMURTRY said that in the early days of abdominal surgery surgeons went to extremes, as, for instance, requiring patients to keep perfectly quiet on their backs, to abstain from all fluids for forty-eight hours, and to avoid all movements of the body. Now the tendency was to be very radical in the other direction. Since this meeting began he had heard that there was a distinguished surgeon in New York City who pursued the practice of having his patients get up the next day following abdominal section, and to leave the hospital at the end of a week. A gentleman who was conversant with the methods of this eminent



surgeon talked about it yesterday. This gentleman saw him operate on a case of double pyosalpinx in which a long incision was made and universally adherent tubes removed. The operation was done at five o'clock in the afternoon. He saw the patient sitting up and drinking milk the next day at eleven o'clock. These statements were absolutely reliable. He understood there was also a surgeon in Chicago who advocated the same method and practised it, namely, doing abdominal sections and having his patients up the next day and going about, and at the end of a week sending them home, telling them to go where they pleased and to do what they desired. He thought this was going to an extreme, and the proper plan was to consider those surgical principles which were classical in the treatment of wounds, and apply them with common sense and with good surgical judgment. If one had a wound of the arm or leg, of the soft tissues, or any injury of a bone, it was known that the best way was to secure rest of the part or parts and thereby facilitate healing. This principle in surgery was well established. It did not facilitate healing of a wound materially for a patient, after an abdominal operation, in whom a long incision had been made, to be up the next day and at the end of a week turned loose and do whatever she wanted to do. Here we had two extremes. Surgeons had started with one extreme, and now the tendency was to go to the other extreme. A middle ground in such cases was the correct one.

DR. SAMUEL W. BANDLER, of New York City, said an agent which was of value was physostigmin. Every case of laparotomy was given the eightieth of a grain of physostigmin hypodermically every three hours, and it had seemed to him that intestinal action was better, in that the patients passed gas earlier than without this agent. However, the house surgeon at the Post-Graduate Hospital had informed him that in his opinion patients did no better with this agent than without it.

As regards the statement of Dr. McMurtry, concerning the early rising of patients from bed after operation, he could only say that this distinguished New York surgeon was a friend of his. He had watched many of his operations, and it was surprising to see him operate at four o'clock in the afternoon to-day, for instance, do an abdominal hysterectomy, and to-morrow afternoon to see the patient sitting up and possibly walking around the wards. This surgeon did this frequently. The advantage of the vaginal method, as it seemed to him, was that the patient could get up quickly—say, on the third day—and perhaps on the fifth day could go home. Now, with the method of allowing patients to get up the day following operation, it appeared to him that almost the last leg, so to speak, was taken away from the advantages of the vaginal method. If a patient could get up on the second or third day after abdominal operation, then there was no particular advantage to be derived from operating vaginally.

DR. HERMAN E. HAYD said that this paper brought before the association the whole subject of abdominal surgery, and that

gradually, by a process of evolution, we had become reasonable and scientific. It was just as absurd a few years ago to say that every case should be drained as it was absurd to say no cases should be drained. A certain class of cases required drainage, while others did well without it. If a surgeon or a physician was to be successful in his work he simply had to use common sense.

Every day he came in contact with doctors who surprised him by the absurd concoctions they were giving patients, and also by the absurd directions they were giving. He thought we would accomplish most in the treatment of these cases if we appealed to the common sense and to the judgment of the patient.

So far as the use of hot water bottles, rubbing of the back or propping patients up with pillows were concerned, he had never seen anything that would help a backache after operation. The more one did for these patients, the more he had to do for them. They were dissatisfied with the efforts one was making for the relief of suffering. He thought it was unwise to permit patients to sit up the day following laparotomy. He considered this most unwise teaching.

DR. JOSEPH PRICE said that wonderful progress had been made in abdominal surgery, and that America had contributed more to its development than the rest of the world. By recent and up-to-date practices surgeons had lowered the mortality very materially; in short, the mortality of every well-trained operator in this hall was lower at present than before, for the reason that he had more confidence in his methods, more confidence in the preparation of his patients, and more confidence in the after-care. There was less fuss and feathers and foolishness about the care of his patients. He thought there was a great deal of danger in allowing patients to get up too early after operations.

DR. CHASE, in closing the discussion, stated that his paper was simply intended to be suggestive. He thought there was a happy medium which was attended with safety. Some men who allowed their patients to get up two days after operation, and to go about, undoubtedly succeeded. He, however, would never succeed, because he should never try it. He would like to have such men give their results as to how many of these patients who were allowed to get up at the end of three days, at the end of three months were in their graves, then he could judge whether this was proper treatment or not. The question resolved itself very largely into one of movement or non-movement, or the use of fluids or not. Slight shifting of patients from side to side gave comfort. If there was no vomiting, nothing should be given, and if relief could be afforded by hot water it should be given. He again desired to emphasize the use of physostigmin. He had found a close relation between traumatism from handling of the intestines and the getting up of patients. If the operation required a short incision, there would be little or no trouble. Physostigmin contracted the circular fibers of the intestine, and on that account it was invaluable.