

FACTORS DETERMINING THE MORBIDITY OF SURGICAL  
CASES.

BY

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THE question of mortality has been pretty successfully and universally solved for the past decade, but many patients are not yet receiving the advantages of all the refinements which lessen the period of morbidity. Quite a large percentage of those needing surgical attention are of the laboring or producing class, and our aim should be to use every possible means to return them to normal health and to their usual occupation in the briefest possible period of time.

Standing preeminently at the head of influencing factors is the surgeon himself. So important is he, that we could very profitably spend all the time allotted us in discussing his character, training and special qualifications which are so necessary in order to bring to every case all that is due the patient. However, so much is being written upon this point, and so much will be done within the next few years, that we will dismiss it rather summarily with the observation that it is most fortunate for the public that the days will soon be only a memory when a physician with no pathological or technical training may go to one of our large clinics for ten days and return to his community a full-fledged operator, even though not a surgeon.

Next in importance is the making of a proper diagnosis of the conditions to be met. Every possible means should be brought into play to make a positive diagnosis, that the work may be well planned so as to insure its completion in the briefest possible time. This is especially true concerning work upon the gall-bladder and other organs in the upper abdominal region. I would not advocate haste, but rather that speed which comes with much thought and training and a certain gift. Unfortunately a few surgeons never acquire the manipulations which mean the best kind of work in the shortest possible time, and will therefore never obtain the highest ideals in morbidity, for surely with all other conditions equal, the convalescing period will be in ratio to the time occupied in doing the operation. This is due not more to the question of the amount of anesthesia than to the fact that a qualified, skillful operator who knows his anatomy and does not become disturbed by unexpected pathology, will pro-

duce the minimum traumatism to the tissues involved. A properly worked out diagnosis also particularly affects the subject under discussion in troubles in the right side of the abdomen. Many a case has been opened too hastily for indefinite symptoms on the right side, a fairly normal appendix and a small cystic ovary removed, but the patient does not get well. A more careful study of the history of the symptoms, aided by the x-ray and ureteral catheter would have shown the trouble in the kidney or ureter.

We come now to the almost equally important element, the preparation of the patient. By preparation I do not refer alone to the use of purgatives, skin disinfectants, and other technical means, but to everything that possibly can be done to shorten the morbidity period. The thing that stands out above all others in this rôle is the psychical attitude of the patient. This must depend to a great extent upon the personality, training and reputation of the surgeon. Many men fortunately are endowed by nature with the qualities that immediately beget confidence; others may obtain them by years of training. To be a successful surgeon, as viewed from the standpoint of morbidity, these qualities are absolutely essential.

After giving this phase of the subject study for years, I am convinced that a proper mental attitude of the patient is a most important factor, and to secure which implies that great care must be maintained in the selection and training of nurses, assistants, and anesthetist as well as of the surgeon. In fact, all adverse stimuli must be abolished. Thus a cheerful and hopeful cooperation of the patient will be secured, and she will approach the operating ordeal without injury to the brain cells and will offer the highest possible resistance to all pathological conditions, and surgical trauma. Looking forward to the postoperative training, we must certainly condemn in no uncertain terms the management of the hospitals that permit relatives and friends of the patient to frequent operating rooms and witness the operation. To begin with, it smacks of quackery, gives the relative, whose judgment on this question is worthless, a distorted view of the whole matter and opens the way for repeated and morbidly magnified descriptions of unimportant details, thus creating the worst kind of psychology in the patient, and prolonging the morbidity into months and even years. And this is only one of the many reasons against the practice.

The abandonment of a long course of preparatory treatment, especially the administration of purgatives which remove fluids from the body, has marked a big improvement in both morbidity and mortality. It is all well enough to treat some conditions before any

attempt is made to procure a cure by surgical means, but in the majority of cases, the shorter the period of time that elapses from the notification of the patient that a surgical procedure is necessary until it is done, the better. The mental attitude of the patient is so much better that this more than compensates for anything tending to argue against it. Of course, this does not imply any of the "rushing off" to the hospital methods, which are sometimes employed, but refers to the time following a careful study and diagnosis of the case.

After the surgeon has gone carefully into the history, made a correct diagnosis, and done everything possible to keep the patient in an optimistic and pleasant psychical mood, what are some of the things that can be done in the hospital, which will affect the subject under discussion?

First of all, all preparations of the patient should be as simple and undisturbing as possible. No haughty and commanding orders from nurses should be tolerated. Rather, the nurse is to be a companion. The field of operation is to be prepared in a thorough, but unpretentious, undisturbing manner. The patient is given water freely, which has a marked beneficial effect upon the blood pressure.

The selection of an anesthetic is now of paramount importance. First of all, shall it be local or general, or a combination of both, and always preceded by the hypodermic administration of narcotics?

After making a careful study of the use of local anesthesia in foreign clinics, I am convinced that we do not rely upon this form of anesthesia frequently enough. I am also convinced that it can never be used in America as in Europe, unless one has a class of patients that are rather below the average in their esthetic development.

The selection of a general anesthetic is an important factor. The use of ether by the present mode of administration has solved the question of mortality rate in all cases having fair resistance. There exists, however, a certain percentage of cases that cannot withstand both the operation and the anesthesia produced by ether. Therefore, many surgeons are content to use ether as a routine, but when an exceptionally bad risk appears, they demand an expert anesthetist and nitrous oxide-oxygen. It is well to note the manner in which these two agents produce anesthesia and then one understands why ether takes second place in a "border-line" case or very bad risk, even as to mortality. Ether produces anesthesia by dissolving the lipoids of the brain and other important structures. Besides affecting the red blood cells, it also puts to rest the phagocytes.

Nitrous oxide produces anesthesia by simply interfering with the use of oxygen by the brain cells.

This knowledge of how these two agents act should alone guide us in the selection of a general anesthetic, if we are willing to do all that is possible to lessen the morbidity as well as the mortality rate. The matter of having an expert anesthetist must be solved if we would bring to the patient all that she justly demands. I believe that the average surgical risk has a right to all the refinements known as well as the very bad risk. It is certainly unfair to any method of anesthesia to use it only in cases in which one is afraid to use ether, and then point to an occasional bad result.

For a long time nitrous oxide-oxygen was heralded as being indicated in short minor operations. To-day we select it above all others in operations requiring great length of time. True, we had, in our early experience, considerable difficulty with it because of the rigidity of the abdominal muscles, but as we learned to operate with a lighter hand and less traumatism, we had scarcely no difficulty in this respect; finally, when two years ago, we commenced to use Crile's principle of anoci-association all difficulty with muscular rigidity disappeared.

We have tried to study the subject without prejudice, and conclude that the question of morbidity is more nearly solved by the combined use of the preoperative hypodermic administration of a proper dose of a combination of some form of opium and scopolamin, to the point of securing the "twilight sleep," followed by the proper administration of nitrous oxide-oxygen, together with the application of Crile's anoci-association, than by any other method. It requires the combination of the three principles to secure the ideal. The determination of the size of the dose of each of the preliminary narcotics to be used, is very important, and, if possible, should be determined by the anesthetist after a careful examination of the patient and with full knowledge of the work to be done. The ideal will not be reached by having a standing order for the same dosage for all patients.

The position in which the patient is kept during the operation has quite an effect, both upon the mortality rate and the morbidity. I have always objected to the use of the extreme Trendelenburg position, although often making the surgeon's work easier, and am in warm sympathy with the recent articles of Dr. Gatch upon this subject. Together with Gann and Mann, he has shown by animal experimentation that the three principal factors in causing heart strain are, Trendelenburg position, pressure on the abdominal viscera, and struggling of the patient. In importance, these rank in the order named. "Experiments on dogs under anesthesia were striking.

Only four of fifteen dogs lived in the Trendelenburg position over one and one-quarter hours unless revived by artificial respiration, the same results always being noted, viz., slight increase in the blood pressure, slight increase in pulse rate and increasingly labored breathing, finally ceasing. When the breathing fails, the heart, poorly supplied with oxygen, has to pump a blood supply made greater by gravity against a blood pressure increased by asphyxia. Asphyxia injures the cardiac muscle and raises blood pressure, while the Trendelenburg position causes an increased amount of blood to be quickly returned to the heart."

The matter of sutures is of grave importance. Americans are pretty well united in the opinion that absorbable sutures mean a shortening of the convalescing period, provided there is no infection and no giving way of the sutures. The secret is to use material that is sterile, as well as the smallest size necessary to hold the strain put upon it, and that which will be absorbed immediately after its function has been completed.

Finally, the operation must be done without apparent haste, yet in the briefest time possible, all raw surfaces covered over if there has been interference with abdominal or pelvic organs, fluids started in the system at once, meddlesome hypodermics during and after operation discarded, and the proper mental suggestions made, so that the patient goes home without feeling she has undergone an "awful ordeal," instead of being taught that she had a narrow escape and only her particular surgeon could have saved her. In most cases, no belt or abdominal support should be worn. The abdominal muscles atrophy just as well as the arm muscles when bandaged. Besides, all unnecessary apparatus causes bad psychology. Excepting infected ones, the abdominal cases should be moved about, and be up in a chair much sooner than was formerly supposed.

347 NICHOLAS BUILDING.

#### DISCUSSION.

DR. GEORGE W. CRILE, Cleveland, Ohio.—Dr. Moots has covered this broad and most important subject in so satisfactory and comprehensive a manner that there is little, if anything, to add to the list of factors he has enumerated as affecting postoperative morbidity.

I would perhaps emphasize even more that he has done the importance of *delicacy* in the operative technic. In our clinic we add to the technic described by Dr. Moots—or rather, I would say that our complete associated technic includes, in abdominal operations especially, the injection of quinin and urea hydrochlorid at a distance from the wound. By this means postoperative pain and gas pains are minimized or in many instances wholly prevented. I would

emphasize the necessity of making this injection *at a distance* from the incision as thus delayed healing of the wound will be prevented, while the whole traumatized area will be affected by this local anesthetic whose effects last from twenty-four to forty-eight hours.

I would like also to emphasize the value of the use of morphia not only as a postoperative sedative but during and after the operation in those cases in which the patient's energies have been so exhausted that the further drain upon them by the operation might prove fatal. In cases of acute infection demanding emergency operations morphin is of especial value, for as we have proved morphin protects the brain not only against exhaustion caused by trauma, but against that caused by infectious processes as well.

Of greatest value is the point which Dr. Moots has emphasized indirectly throughout his paper, that the individual patient is the central point of each operation. His individual needs are to be considered at every step and his eccentricities of temperament as well as of physique respected so that before, during and after the operation there may be no rough points of contact.

THE PRESIDENT.—I would like to ask Dr. Hewitt, of Detroit, to take part in this discussion.

DR. H. W. HEWITT, DETROIT, MICHIGAN.—I consider it an honor to be asked to be a guest of this Association, and it is a greater honor to be asked to take part in this discussion. I have been very much interested in the paper of Doctor Moots, inasmuch as I have been working along the line of anoci-association for about two years, and during that time have done in the neighborhood of 300 laparotomies. At first, my results were not good, but this was due to faulty technic. I visited Crile's Clinic a second time, watched him more carefully, and found out where my mistakes lay. I returned home, took more time in doing the operations and was able to eliminate these mistakes, thus securing good results.

What Crile especially emphasizes in connection with these patients is team work. When a patient enters the hospital, he or she, as the case may be, should be tactfully handled by nurses and orderlies, interns and surgeons.

The night before operation we usually give the patient a large dose of some hypnotic. Lately we have been using veronal. This gives them a good night's sleep. Early in the morning, before the effect of the veronal has worn off, we give them one or more doses of morphin and scopolamin, or morphin and atrophin. When we use two doses of morphin and scopolamin or narcophen and scopolamin, it gives the patients the so-called twilight sleep. We have taken them to the operating room without their knowing where they were going. I have visited these patients after operation and had them ask me when I intended to do the operation.

With regard to the morbidity, if we use these preliminary drugs, if we use nitrous oxid and oxygen anesthesia given by an expert, if we are careful to inject every tissue by novocain (either one-half or one-quarter of 1 per cent. solution) before the tissues are cut, it will certainly protect the brain cells from exhaustion and prevent

shock. If there is one thing we can say in favor of anoci-association, it is that it prevents shock. This does not mean so much in the ordinary risks, but in the bad risks it means everything. We have saved a number of patients by the technic of anoci-association who otherwise would have been lost.

In listening to Dr. Reder's paper yesterday, with regard to tympanities, I was quite interested. When we use the technic of Crile, and especially when we use quinin and urea hydrochlorid, injected a distance from the wound, we find that there is very little tympanites. In over 90 per cent. of the cases there is no tympanites. We strap the abdomen tightly with adhesive plaster, and it is seldom we have to loosen the adhesive plaster until necessary for the removal of the sutures. These patients have very little postoperative pain. I have been able to remove some appendices in patients who have had no postoperative pain whatever. I think we will be able in time, when our technic is more nearly perfected, to steal the appendix, as Crile steals the thyroid. If we can steal the appendix we can steal the gall-bladder without the patient's knowledge.

It would seem that with the absence of shock, with the freedom from postoperative pain, and with the rapid convalescence, that the morbidity following operations should be greatly reduced.

DR. MATTHEW D. MANN, Buffalo (by invitation).—I thank you very much for the privilege of speaking before this honorable body. I am very glad you have chosen Buffalo for your meeting-place, and sincerely trust that you will enjoy your stay while here.

The paper to which we have listened touches a great many fundamental points, and it will be impossible for me to discuss all. I am very glad Dr. Moots has taken up the matter of pain in the right side. This is often due to trouble in the ureter and sometimes we find it in the left side due to the same cause. I do not know how many times I have seen cases just about to be operated on or which had been operated on for the removal of the ovary or the appendix, where the patient was no better after operation, because the trouble was in the ureter. We have overlooked troubles in the ureter and bladder too frequently. The ureter can sometimes be palpated; sometimes it is so thick from inflammation that you can feel it distinctly. In many cases it is so tender that if you press on the right spot you will elicit pain and then you will know what the pain is due to. The ureter is just in front of, and to one side of the uterus in the anterior vaginal wall. You can locate it there very readily, and it is usually just at the mouth of the ureter, where the tender spot is. Often you can elicit pain by pressing the bladder between the finger and symphysis, pressing it upward against the bone, a sure proof of trouble in the trigone and base of the bladder. If that be the case, then a more careful examination of the bladder will show nature of the trouble.

Now in regard to catgut. In Buffalo we have used iodine catgut, prepared after a method originated in my clinic, by my son Dr. E. C. Mann. The catgut is put in a solution of iodine in ether, not the tincture of iodine in ether, but iodine scales, and it works exceed-

ingly well. We use a 10 per cent. solution, although it is not necessary to be exact. This solution when made can be used for years. It gradually loses its strength, and then more iodine or ether may be added. It never becomes infected. No germs can live in any such solution. The catgut is dropped into this bottle just as it comes from the manufacturer and left in, according to the size of the catgut, from one to five days. Then pick it out, dry it or keep it in absolute alcohol, which ever you like. I have used such catgut for ten years, as have Dr. King and others, with great satisfaction. We have had no stitch-hole abscesses from it. It lasts a little longer than ordinary catgut; that is, it does not absorb quite so quickly. I do not think I have ever seen a single case of irritation or infection which I thought was due to the catgut, after having used thousands of pieces of it. I think it is decidedly the safest, easiest, cheapest and nicest way to prepare catgut I have ever found. There is enough iodine to kill any infection you may get onto it while operating and to resterilize it even after it has been handled. We do not make a practice, however, of handling our catgut and using it afterward.

I thank you very much for the opportunity of speaking.

DR. CHARLES L. BONIFIELD, Cincinnati.—Dr. Moots certainly read an interesting paper which, I am sure, we have all enjoyed, and he has taken up so many subjects and covered such a broad field, that within the five minutes allotted me I can only touch on one or two phases of it.

In my opening remarks I recall what an old teacher of mine very frequently said, "The world goes round and round, but it still keeps moving on." Dr. Mann will remember well, and many of us will remember less distinctly, the days when every laparotomy nearly was preceded by the injection of morphine, and patients were made absolutely comfortable with morphine until recovery took place or death carried them off. And then came Lawson Tait on the field, and if there are two things that Lawson Tait taught us, it seems to me they were that we must get through an operation as quickly as possible, without unnecessary traumatism, and that we must be more sparing in our use of morphine. I never had the pleasure of seeing that great operator work, but from what I learned from those who told me, he was not exceedingly aseptic, but he possessed great manual dexterity. He was able to do in a short time just that which was necessary to do and no more. He reduced the mortality of abdominal operations tremendously and taught the world pelvic and abdominal surgery.

Next to that in my mind was his teaching not to kill patients with morphine. I do not doubt, and I am willing to admit that the pendulum may have swung too far; that we have gotten too radical against morphine; that when our patients are suffering too much, there are times and places where morphine should be used, but that fundamentally morphine is bad for these cases cannot be denied. In the first place, after every abdominal operation that has ever been done, there is a certain amount of infection. To get rid of that infection we depend upon the vital powers of the patient and especially on



elimination. If our patient cannot eliminate; if her kidneys are not working well; if her bowels will not move after a reasonable length of time, she is overwhelmed by the poison and dies in spite of anything. Now, if there is anything we know about morphin, it is that it constipates the bowels, it stops peristalsis. Every doctor who graduates thinks he must stick a hypodermic in his pocket and go around shooting everybody who has a little colic, and so on. As the years roll around he uses it less and less frequently. Every text-book I have ever read on diseases of the kidneys tells us that morphin is an exceedingly dangerous drug to use in those whose kidneys are diseased. It interferes more or less with elimination, and in this way it dries up the secretions, so that morphin used in this way indiscriminately should be condemned.

The next point I want to make is that all of these things are very nice as we hear about them, but it is remarkable how well patients do without them. We were not killing them all before these things came around, and they were not all suffering the torments of the damned by a good deal. It is true, they had some pain.

Dr. Reder read a paper this morning. It was an excellent paper. There were a lot of good things in it, but he knows and I know and everyone of you know the minute the bowels move freely, and gas is passing freely, the patient is relieved. You will not have any more trouble with your patient. If you want to prevent the bowels from doing that, fill them up with morphin, and they will not pass any gas; you can relieve pain and distention with the morphin, but that is not relieving the condition that causes the pain.

Formerly, I was engaged in general practice for ten years, and if there is any one thing I learned in that ten years of the general practice of medicine, it was to simplify my prescriptions. I found that one good active drug was all I could use and watch at any time.

I found if I was giving one good active drug whose physiologic action and therapeutic effect I fully understood, I did not want to give any more to muddle it up. So if in the next six months I should call on any of my good friends to operate on me for gall-bladder trouble or for appendicitis, I pray you not to fill me up with other drugs, but give me ether in the old-fashioned way. (Applause.)

DR. J. HENRY CARSTENS, Detroit.—Several years ago I read a paper on a similar subject to that which the doctor has dealt with to-day. I want to commend him for bringing this subject before the Association. In my paper I emphasized the importance of cultivating the fine Italian hand. I do not like so much fuss and feathers. I have always made a plea for simplicity. When a patient comes to the hospital for operation, she is put to bed, and a nurse looks after her. If she needs an anodyne during the night to relieve pain, she receives it. If she does not need it, she does not get it. The nurse prepares the patient. She washes her, combs her hair, and keeps her mind occupied so that she is not thinking about the operation. I do not have my patients shaved when they are conscious. The minute you shave them, their attention is directed at once to the operation and about the incision, things she did not think of before.

It is a good thing to shave them, but it takes but a few minutes to do this after the patient is on the table. It is a great deal better to do it then. You can give the patient a good dose of morphin, and morphin has a wonderfully stimulating effect. Instead of cowards, it makes heroes of these patients. They have courage. In the old days they gave them large doses of whiskey to keep up their courage, but now a good dose of morphin, say one-eighth of a grain with atropin will do that. The patient is rolled into the operating room, and if my house physicians and nurses have not got everything ready, I want to know the reason why. When things are not ready it is liable to irritate one. As soon as the patient enters the room the ether cone is put over her mouth, so that it does not give her much time to think or to say anything. It is better sometimes to give the anesthetic in bed, but you cannot always do this in a hospital, and so the patient has to be rolled into the operating room and put under the influence of nitrous oxid gas first, and then after she is well under the influence of the gas we change to ether. After she is well under the ether the parts can be scrubbed again and shaved, and everything is ready. I thread my needles myself; I have the catgut ready, and I want to say that I use plain sterilized catgut, and not chromicized, not formaldehyd, nor kumul catgut, but plain catgut. My instruments are there and ready to be used. The instruments I use are very few, and no one handles them but myself, and I know what I am going to do. I have studied the case thoroughly and carefully and considered what complications I may meet, I do my work quickly, and I sew up the fascia with this plain sterilized catgut. These operations can be done rapidly. I do not let my assistant do anything in connection with the operation. He stands on the other side and looks on in silent admiration. I sew up the fascia carefully. If it is a clean case, I do not drain. I bring the skin together and use narrow strips of plaster, then I put a couple of large plasters around and that is all. The patient has not had much shock. I think the plan of anoci-association is unlimited. The patient is put on a stretcher after the operation; then I have my assistant give her 2 quarts of saline solution per rectum. The rectum may not hold it all, but if you give them enough so that it goes up to the transverse or ascending colon, they may lose a pint or two, but will always keep a quart. When this is done they do not need a drink for twenty-four hours. They do not want it. If you do not do that they are thirsty, then they require water to quench their thirst. Their blood-vessels are empty. They need liquid, and you give them this water. What is the result? With the water they will perspire, the blood-vessels will fill up, it will flush out the kidneys and eliminate a great quantity of effete material which, inside of twenty-four hours would cause trouble as a general rule. The patient begins to wake up and gets restless. Give her one-eighth of a grain of morphin and she will sleep for two or three hours. In the evening give her one-quarter of a grain of morphin with about one-one-hundred-twentieth of atropin, then when she wakes up she is not thirsty, she feels all right, and gets along without any trouble. What makes me disgusted is to have

a patient in the ward who belongs to some other practitioner, and who is allowed to cry and whine all night because they will not give her one-fourth or one-eighth of a grain of morphin, which would be sufficient to keep her quiet.

Dr. Bonifield spoke about Lawson Tait and his work. He was a crank on these little things. But what is the use of being such a crank. If patients require a small dose of morphin, give it to them. Do not give them enough to paralyze the bowels, but sufficient to keep them quiet and comfortable and let them eliminate. If you do that you will seldom have a case of gas pains or vomiting or any of these other troubles. These patients get along very well under such treatment, and in about ten days or two weeks you can take the plaster off. You will see the line where the skin has come together, and that is all you see. If I have a pus case, I will put in a few silkworm-gut stitches extra for fear the patient will dispose of the catgut too rapidly, but if there is no pus I do not do that. I do not give them any more morphin after that. If I have trouble with house physicians, it is that they want to stuff my patients with some remedy. I give them nothing except all the drink they want, fill up the blood-vessels, flush the kidneys and eliminate effete material. I may give them a glycerin enema, and if this is done in forty-eight hours there will be little or no trouble, or very little immobility on part of the intestines.

DR. ERDMANN.—I would like to ask Dr. Carstens how he prepares his catgut.

DR. CARSTENS.—The catgut I use is put up in packages and is already sterilized. My catgut is not chemicalized; it is plain sterilized catgut without the use of any chemical. Some of the patients I have operated on, where I have used chromicized catgut or other kind of catgut, have gone home and in about three months thereafter have had a cold abscess or something like that. The catgut would not absorb, and this scared them very much. I use catgut that I know will be absorbed before the patient leaves the hospital, and then she will have no such trouble. That is the reason I do not use chromicized catgut, not even in hernia operations.

DR. EMERY MARVEL, Atlantic City, New Jersey.—It seems to me, the question of morbidity is one of the most important we can consider next to mortality. If I interpret Dr. Moot's paper correctly it deals with the immediate morbidity. In connection with which there are three factors which come up for consideration in this discussion. I think it is right for us to assume that quite a degree of perfection has been attained in the diagnosis of disease before surgical treatment is applied. Assuming that is true, how can we make the impairment of health of shorter duration, and the return to absolute health more nearly complete?

In speaking of the immediate morbidity Dr. Moots referred to the preparation of the patient. I have been recently impressed with the inconsistency of the teachings in regard to the preparation for a surgical operation, particularly that teaching which directs complete elimination of the gastrointestinal contents. I mean

now the starvation for a day, or days, before operating. This places the patient in the very position in which we do not desire that patient to be in—exhaustion. It is time for us to discontinue starvation and have the patient take nourishment up to a few hours before the operation. The stomach in a normal condition will empty itself in from six to eight hours. A patient taking a meal twelve hours before operation will have the stomach empty by the time the operation is done, and there need be no fear in the majority of cases of the food not being properly assimilated.

The time of waiting before an operation is undesirable. The psychic influence of waiting, anticipating operation, I cannot consider as being good. The question of building up these patients before operation, as suggested by our medical confreres of preparing them for the ordeal of operation, is not well taken. The condition of the mind with an operation continually being considered is not favorable for betterment. If a patient did not have a disease which requires an operation, an operation would not be done. Therefore, the cause for the operation ought to be removed promptly. The morbidity brings us to the suggestions on the part of the physician. One case comes to my mind of a patient who was confined to her room as an invalid for four years. She was implored by her physician to keep quiet after the operation and this suggestion upon the part of her physician remained with her though no justification was evident. This illustrates very emphatically the condition that prevails, and I think great emphasis should be given to the surgical convalescent patients that they can do. There are too many *donts* and not sufficient *dos* to prevent the remote morbidity, Dr. Moot has not said much about the remote morbidity, and there, it seems to me, we owe a responsibility to society and to the state. One statistician has computed, that each life is worth to the state \$2500, and every time life is held in a condition that he cannot give the state its earning capacity it behooves our effort to shorten the invalidism. I wish to express my pleasure to Dr. Moots for bringing this subject before the Association and having treated it in so excellent a manner.

DR. MOORS (closing).—I am in hearty accord with nearly everything that has been said in the discussion on my paper, and I wish to thank the fellows for their free expression of opinion.

Dr. Marvel's remark about the physician's statement to the patient impresses us forcibly, and I trust I will be pardoned if I speak of that just for a moment. How many times do we as surgeons find a patient to whom the doctor has said before we see the patient, that after this or that operation you must be careful a year or two years; you must not run a sewing machine for a few months; you must not go upstairs for three months and all that tommyrot. If we handle these cases right, the ordinary abdominal case should be able to go home in two weeks, and a housewife should be at her usual vocation in three or four weeks. Why? Because she will get her mind off herself.

As to the remote morbidity of which Dr. Marvel speaks, I think

we will never accomplish what we should in that regard until hospitals have a better system of keeping track of patients. In other words, we must study the product of the hospital with all that that implies. The social service must be considered and everything of that kind. We can never shorten this period of morbidity, especially remote, whatever we may do as regards technic, until those of us who are compelled to work in semi-public hospitals can get the managers of these hospitals to stop the visiting by laymen in the operating room. You cannot do it because a brother, a cousin, or a friend of the woman goes home to the little town in which she lives and describes in detail everything that you do and everything that you do not do, and by the time the patient gets home the people have been told that the surgeon took her bowels out, laid them out on the table, put them back again, and on Sunday morning John tells her about it. Next week Mary tells her, and this goes on for months and months. We must stop that sort of thing if we would get the right kind of morbidity.