Boldt (H. J.)

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THE CAUSES OF DEATH AFTER ABDOMINAL SECTION.

II.

THE TREATMENT OF PREGNANCY COMPLICATED BY FIBROIDS OF THE UTERUS.

(*Discussion on the paper of Dr. Vander Veer.*)

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I.

The Causes of Death after Abdominal Section.

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Everyone who has had a large experience in abdominal surgery has met with deaths resulting from the operation under varied circumstances. It is, therefore, not strange that we arrive at some conclusions as to what the underlying cause is. In reading over the methods of doing some one abdominal operation, it at once will strike the observer with what tenacity a respective operator will defend a particular method of operation for some given pathological condition; I mention, for instance, myofibromata of the uterus, as an example illustrative in the best manner of the above statement. There is, of course, no doubt as to the correctness of his position, so far as he himself may be concerned; but that does not make that particular method the superior one in the hands of other operators. One accustomed to do a great deal of abdominal work in time elaborates certain technique which becomes highly profitable to him. Should, however, some other less expert operator try the procedure, the results may differ greatly, and even an equally proficient operator who is accustomed to a different method is very apt to meet with a similar bad result. It is obvious, then, that with the accumulation of personal experience, the mortality rate will gradually be bettered. It is, however, not only the ability to operate with dexterity which lowers the mortality with the respective operator, but also his judgment as to whether the physical condition of a patient is such that she or he can sustain the shock of the respective surgical interference. A patient with a lowered vitality, poor cardiac action, cannot be compared to a robust individual. It must have been noticed by all how well patients bear major operations per vaginam, compared to an operation bringing about the same result per abdomen. It is evident to me that the cause of this difference is to be found in the lesser disturbance of the peritoneal cavity in vaginal work. In the latter we do not disturb the intestines to any marked extent, if at all. Again, it is obvious that since the almost universal adoption of pelvic elevation in abdominal surgery the mortality rate has also been greatly diminished. Why? Because the contents of the abdominal cavity gravitate toward the diaphragm, and are consequently not manipulated to such degree in

doing work in the lower abdomen, and our ability to see just what we are doing.

It is not infrequent that we meet with paralysis of the intestines after abdominal operations, and usually the amount of paralysis is in proportion to the amount of peritoneal disturbance. The greatly distended and tympanitic abdomen, the vomiting, the small pulse, the pallid face, lead to the diagnosis of septic peritonitis, even though the temperature be low; and yet if the intestines regain their tone, and an escape of flatus takes place, all these symptoms disappear as if by magic, showing definitely that our patient suffered from the effects of a paralysis, due, however, to an infection. Should the latter happy event not occur, then the temperature of the patient will toward the end rapidly go up; they really do become septic (in that sense as everybody understands it), because, in my opinion, of the migration of intestinal ptomaïnes into the peritoneal cavity. My views on this particular cause and effect will probably meet with opposition. Nevertheless, a careful observation of such cases has forced these conclusions upon me, and I do not doubt but what others will soon be ready to corroborate my explanation.

Sepsis is that one result after operation to be feared most. It was once thought that this dreaded condition would be forever banished, when the strict antisepsis, according to Lister, made its advent in the surgical world. But it did not require much time to bring us back to the sad reality and prove to us that, despite the most carefully conducted operation on antiseptic principles, sepsis does occur. We all find such cases, when we cannot find any reason for the occurrence of this dreaded complication, and our patients will still fall a prey to its ravages. Would it not be well to look a little further for a cause? It has seemed to me that recent illness like influenza, pneumonia, etc., made patients especially liable to it; but for no other reason than that their physical condition had been placed below par, and that consequently the individual power of resistance was absent. I have formulated the rule, therefore, not to operate subsequent to the apparent recovery of any acute illness, or any form of illness which we know from experience has a tendency to lower the vitality for a considerable period of time. I have more than once seen an autopsy made when absolutely nothing pathological was found to account for the death, and the very convenient expression, "shock," would be used as a designation. I would most earnestly protest against such mode; it is misleading to all, and I do not consider it proper to mislead ourselves and others for the sake of having a death from sepsis less on our list. The symptoms of such cases are, briefly, as follows: On the first day after operation the patients shows nothing unusual, but on the second day the temperature begins to rise; there is present increased thirst, a dry tongue, a small and rapid pulse; the sensorium is more or less benumbed. These symptoms

rapidly increase, and a fatal termination ensues on, perhaps, the third day; but at no time has the abdomen been sensitive or tympanitic, and on opening the peritoneal cavity nothing except a little serum will be found, and sometimes this, too, is absent; yet the death, in my opinion, has been due to sepsis. Here again, the sepsis is due to the migration of intestinal ptomaïnes into the peritoneal cavity.

Peritonitis as a cause of death has been greatly diminished since the abandonment of chemicals for the toilet of the peritoneal cavity, and I am sure that this cause, as well as sepsis and shock, will still diminish more when stricter attention is paid to the general condition of the patient. I take the stand that by far the greatest number of deaths take place as the result of an infection, although this is manifested in so many varied ways that the observer can be easily misled, especially so if he is reluctant to have it said that his patient died of sepsis.

Under the variations I class pneumonia, although I do not deny that we may have a broncho-pneumonia resulting from the ether narcosis, or here and there an accidental lobar pneumonia may arise without sepsis being present; but in the greater number of instances, when such pulmonary lesion takes place, it is the result of an infection.

Intestinal obstruction, may, however, also be due to the use of a Murphy button, and I would most earnestly caution against its use in anastomosis of the large intestines. Quite recently such mishap occurred to me. While operating upon a very complicated case of tubercular peritonitis, with an unusually large ovarian abscess of tubercular nature, the sigmoid flexure was torn and the ends joined by means of the button. From the third day on the symptoms of obstruction began to manifest themselves, but owing to the generally weakened condition of the patient it was out of the question to reopen the abdomen. The temperature did not begin to rise until the fifth day; from then on, however, it began to go up, until the fatal termination, which occurred on the seventh day, death being due directly to sepsis from ptomaïne poisoning, which, however, was directly due to the intestinal obstruction from fecal accumulations above the button, as was proven beyond doubt at the autopsy.

I have not taken into consideration the different varieties of intestinal obstruction following abdominal section, because this would take up more space than is allotted me, and they are fairly well understood; but it has seemed to me that some forms of infection are not so fully recognized as should be the case, and therefore I take the liberty of calling attention to the subject, in the hope that the matter may again receive more careful attention.

In conclusion, a word regarding narcosis. I am, indeed, surprised that deaths are not of more frequent occurrence from this cause than is really the case, because the most important position, next

to the operator himself, is usually entrusted to the least experienced assistant in hospital practice, whereas it should be an exceedingly conscientious and careful observer, with sound judgment, to whom the narcosis is entrusted—a man who should have no other thought at the time than the condition of the patient during narcosis, a man who should know when a warning note is to be given to the operator. The choice of the anæsthetic plays an important *rôle*, on the whole, ether being the safest in the opinion of most American operators; but exceptions do exist, and the experienced narcotizer will recognize when the necessity exists to change the anæsthetic. A patient whose pulse-rate is greatly accelerated under chloroform or ether is in great danger, and the anæsthetic must be changed ere it is too late. Twice in my experience has inattention to this caused a fatal termination, and in two other instances the patients were saved only with the greatest difficulty; the two latter patients stood ether-narcosis very well subsequently. It is generally thought that deaths from chloroform-anæsthesia occur suddenly, and usually during the beginning of its administration. That this is not always the case is shown by the following instance: During the respective operation an inquiry regarding the pulse elicited the reply that it was good; when, however, at the completion of the operation, I made a personal investigation regarding the cardiac action, it was found that the radial pulse was absent entirely; neither did it return, except for a few minutes, after intense stimulation. There was nothing about the operation which should have caused death, and the physical condition of the patient was all that could be desired under the circumstances, showing conclusively that the fatal termination was due to the chloroform-narcosis, but only after the lapse of about six hours, from the depressant action of the anæsthetic upon the heart, thrombi probably having already formed during the narcosis, judging from the muffled heart-sounds. Hence, shock and heart-failure following operation will also be greatly diminished if the strictest precautions are taken with the narcosis. I would, in fact, go so far as to enter a plea that an act should be passed that no one shall be entrusted with the narcosis who has not received training from a more experienced physician, thus doing away with the dangerous habit of giving this important position to the junior assistant in hospitals. What this training should consist of, and how it should be given, is another matter, and does belong to the subject of my remarks.

I do not wish it to be understood that an operator should hurry himself through with an operation at the cost of improper work, for the sake of shortening the narcosis; but at the same time the narcosis should be made as short as consistent with the execution of good work. No unnecessary time should be consumed by inadequate assistants for the handling of instruments or useless manœuvres on the part of the operator, because a long narcosis will depress the action of the heart, and thus cardiac thrombi may result.

II.

The Treatment of Pregnancy Complicated by Fibroids of the Uterus.

(Discussion on the paper of Dr. A. Vander Veer, *Transactions Medical Society of the State of New York.*)

It may be considered a rule that the existence of pregnancy causes changes in the circulation of the fibro-myomata, producing an enlargement and softening of the tumor, generally due to a serous infiltration and occasionally to a hyperplasia of the muscular elements, or both; but contrary to this, a diminution or even a complete disappearance of the tumors may occur. The increase in the size of the tumors, if situated in the walls of the uterus, usually causes a premature expulsion of the uterine contents, from mechanical pressure effects, these causing uterine contractions. We must take it for granted, however, from the study of the endometrium in myo-fibromatous uteri, that the principal cause of abortion is due to some form of endometritis, especially so if the tumor is of the interstitial or submucous variety; this even occurs when the neoplasms are so small as to be entirely overlooked.

The pregnancy will, however, go to term in about 10 per cent. of the cases, if not interferred with. The question of interference with the pregnancy under such circumstances has been frequently discussed, but no unanimous conclusion has been derived. It seems, however, that the majority favor some form of operative interference prior to the normal termination of pregnancy, fearing that the growth of the tumor may produce respiratory and cardiac disturbance or that the neoplasm by the changes produced in its circulation, with the advent of pregnancy, will become gangrenous, or that the growth will cause an obstruction in the outlet, so as to prevent normal delivery; therefore, the production of abortion and the performance of myomectomy is practised to a considerable extent, especially the former. Those of us, however, who have been more conservative on this subject can certify to the fact that with the advancing enlargement of the uterus the tumors are frequently dislodged from the pelvis, so as to permit an unhindered expulsion of the child. I will admit that the dangers mentioned by the advocates of abortion do exist: the uterus may not dislodge the tumor from the pelvis; the neoplasm may increase to such size as to have the abdominal contents interfere with respiration, renal function, and cardiac action; in pedunculated tumors the pedicle

may become twisted, and subsequent gangrene ensue; in interstitial and broad-based subserous tumors, disintegration and gangrene, or abscess, may take place; but all these complications are "mays." Now, why should we, because there is a possibility of one of these complications occurring, undertake a procedure which, to say the least, is far from being devoid of danger? I take the stand that there is greater danger in the production of an abortion in a woman with a fibro-myomatous uterus after the third month of pregnancy than in pursuing the expectant plan, and should our expectation not be fulfilled, to interferee surgically as may be indicated. The production of the abortion does not prevent the disintegration of the neoplasm; and we also know that the danger of gangrene of the tumor is increased if the endometrium is traumatically injured, and the latter is apt to occur if the placenta must be removed manually or with instruments, which is very likely to happen, because a fibro-myomatous uterus does not so readily expel a placenta when abortion is produced.

We now come to the other important question—whether it is indicated to do an abdominal section during the pregnancy, for the purpose of performing a myomectomy to prevent premature expulsion of the uterine contents. I do not believe that such is a justifiable indication, although the operation has been successfully performed for this purpose; but it is doubtful in my mind that the myomectomy prevented an abortion. I would put it in this light —that *although the myomectomy was performed, abortion did not occur.* All the recommendations which myomectomy has received under such circumstances do not convince me that it is a good procedure when we look at accumulated facts. It is not often that the fœtus is carried to term, aside from the dangers of the operation itself, which are not inconsiderable, owing to the larger surface of the tumor-bed and the great blood-supply. The Porro operation, which has also been performed prior to the normal termination of the gestation-period, should find no place in our field of work, except when the interference of other functions, from the enormity of the abdominal contents, make it imperative, because the results for the mother are no better than if performed at the termination of gestation, and for the child, if operation is undertaken before the seventh month, the mortality is 100 per cent. I therefore take the ground that we should await the normal termination of pregnancy, and then act according to indications. We can, under narcosis, perhaps, dislodge a pelvic tumor, which is most readily accomplished immediately after rupture of the membranes, if it has not already been accomplished by the growth of the uterus; should the necessity for operation arise, the chances, as far as the life of the child are concerned, are excellent, and are no worse for the mother than if the operation had been performed earlier. A woman who has had an impacted pelvic myofibroma,

so that she cannot give birth to the child, should have the generative organs removed entirely, under the circumstances mentioned, so as not to place her in danger again by a subsequent pregnancy, and I advocate the Cæsarean section with removal of the uterus, but not according to Porro, but its complete removal—a pan-hysterectomy.

Fibro-myomta in the infravaginal portion of the cervix can be successfully enucleated from below, and for this class of tumors vaginal myomectomy is indicated and advisable at a very early stage of pregnancy, before the end of the third month, or, if seen later, one should wait until the beginning of labor at term.

Pan-hysterectomy, as mentioned above, is advocated by me in preference to the Porro operation, for precisely the same reasons that we have almost universally abandoned the extra-peritoneal treatment of the stump in hysterectomies under other circumstances. The difference in the time consumed by such complete operation is very little more, and the advantage must be obvious to all. Those who prefer to leave a small portion of the cervix, the same as is practised by many in doing suprapubic hysterectomy, can safely pursue this course, provided, however, that the patient has not been infected by manipulation from below; my chief objection being raised against the extra-peritoneal treatment of the pedicle.

A fibro-myomatous uterus has not the same even contractile power as the normal uterus, and herein lies one of the great dangers which must be thought of by the accoucheur. Although no obstruction exists to the expulsion of the child, there is danger of rupture of the uterus during labor-pains at the boundary-line of the tumor with the muscular structure of the uterus; therefore, the attendant in a case of this kind should always be prepared for an abdominal section in the event of such calamity. In some cases, however, the tumor, if it is of the submucous variety, will, by the efforts of expulsion, become pedunculated, and may be removed by simply twisting it off.

Another great danger which we may be called upon to contend with in interstitial and submucous fibromata, after expulsion of the child, is hemorrhage, especially if the seat of the placenta is on the site of the tumor, because the neoplasm will prevent the contraction of the bloodvessels in that locality, and the most energetic means must be employed to control it. If, despite of this, it is found impossible to check the bleeding, I would advise the clamping of the uterine arteries from below, using at the same time the appropriate remedies for acute anæmia. In some instances it may be even advisable to proceed more radically and remove the uterus. It is self-understood that such *dernier ressort* should be considered only in the event of imminent danger. If the labor has terminated spontaneously, and the tumor, during the puerperium becomes gangreneous, or if sepsis arise from such fibromatous uterus, we can-

not be too early with radical interference; no time should be lost with the ordinary therapeutic measures in vogue for the combating of puerperal sepsis, but make an abdominal section and remove the offending organ before general sepsis ensues.

To summarize: Abortion should not be performed. Wait until the termination of gestation, and if the tumor is in the lower segment of the cervix, enucleate it from the vagina; if above, and it cannot be dislodged under an anæsthetic immediately after rupture of the membranes, open the abdomen and perform a Cæsarean section, followed by complete hystero-myomectomy.

Watch the patient carefully, and act according to indications after spontaneous, manual, or instrumental delivery.

Do not make any attempts to accomplish delivery by instruments or version, unless it is obvious that it really can be done, because useless attempts at this lessen the chances for both mother and child by the performance of delivery per abdominal section.