

Frankenthal. *American Gynecological and Obstetrical Journal*, 1896, ix, 297.
 Harrington. *Boston Medical and Surgical Journal*, 1894, cxxx, 6.
 Hermann. *British Medical Journal*, 1888, i, 1152; 1890, ii, 722.
 Kokman. *Centrbl. f. Gyn.*, 1897, 1221.
 Olhausen. *Deutsch. med. Woch.*, 1890, 174.
 Ross. *American Journal of Obstetrics*, 1896, 234.
 Schoolfield. *Loc. cit.*, 1898, 270.
 Tait. *British Medical Journal*, 1888, 1001.
 Thomson. *Centrbl. f. Gyn.*, 1900, 189.
 Winckel. *Verhandl. d. deutsch. Gesellsch. f. Gyn.*, 1888, ii, 82.
 Zangenmeister. *Zeitschr. f. Geb.*, 1898, 404.

THE MORTALITY OF HYSTERECTOMY FOR FIBROIDS.¹

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THE question of the mortality of any operative procedure has an important bearing upon the advice we give a patient who consults us for the relief of disease. It modifies very materially the advice given. How important it is, depends upon the character of the disease present, as, for instance, in the case of ovarian tumors, where the outlook, if nothing is done for the patient, is absolutely unfavorable. In such cases we are therefore justified in taking great risks for the sake of cure. That was the state of affairs from twenty-five to fifty years ago, when abdominal operations were in their infancy. Then, even though the physician could not assure his patient that the operation was practically without risk, as he can today, he could still urge it, knowing that the risk of the operation was less than from the disease left untreated. The same is true of cancer today. Any operative measure, however severe, which holds out the least chance of success is to be advised.

The case stands differently with fibroid tumors. In themselves they are benign, that is, they do not necessarily endanger life. In their early stages they rarely give rise to any serious symptoms except hemorrhage, and even when they attain considerable size the symptoms may be unimportant. The frequency of their occurrence, their slow growth and the fact that in a large proportion of them hemorrhage is not an essential feature, has, in my opinion, led the profession to put too light an estimate upon their importance. The fact, too, that the operative measures for their removal were in the early stages of operative work accompanied by a considerable mortality has led to a very conservative course of action on the part of a good many surgeons. It could not fail to have a marked effect upon the opinion of the profession when so prominent an abdominal surgeon as Dr. Keith, of Edinburgh, only ten or eleven years ago, made the following statement: "Hysterectomy is a hazardous operation for the removal of a tumor that of itself rarely shortens life. For myself I have always had grave doubts if I were justified in performing such operations at all, especially hysterectomy, for the mortality attending this operation is out of all proportion to the natural history mortality of uterine tumors, and the results of it are out of all proportion to the benefits received by the few." These sentiments expressed the grounds which led Dr. Keith to abandon all operative treatment of fibroids in favor of the electrical treatment after the method of Apostoli, of Paris. There is no question but that the technique of hysterectomy has made great strides in the last de-

cade, and yet the mortality even then must have been, in the hands of Dr. Keith, a comparatively small one. He speaks of a fibroid tumor as one that of itself rarely shortens life. It seems strange that an observer of so large an experience could look upon fibroid tumors as such innocent affairs. In a series of cases, such as would naturally fall under the observation of a practising gynecologist, there must occur a certain number which would clearly demonstrate that fibroid tumors bring with them distinct dangers and not infrequently threaten life.

Before discussing the question of the mortality of hysterectomy for fibroid tumors, I desire to point out causes of danger which are operative in case the tumor is left alone. These are, first, hemorrhage. This may become a source of danger no matter what the size of the tumor, and it not infrequently happens that insidiously, and almost unconsciously on the part of the patient, a condition of anemia is produced which may affect the prognosis in case of operation, or exceptionally may be fatal. The second cause is the size of the tumor. A large tumor may so press upon the other abdominal organs as to induce serious disease. A third cause is death of a part of the tumor, from what is known as anemic necrosis. A fourth cause is the development of malignant disease in connection with the fibroid. It may be said that these are rare conditions, so rare that they need not really enter into the calculation in considering the prognosis of these tumors, yet, as will be seen later, they are found too often to be ignored. In the light of the occurrence of these various conditions, it seems almost absurd to speak of a fibroid as almost never shortening life. Such being the case with regard to these tumors if left to themselves, is it not our duty to revise our opinions with regard to their early removal? It is just here that the question of the mortality of operative measures is of importance. If, with the improved methods of operating now at our command, it can be shown that the mortality, if the operation is done in the early stages and at a time which the operator can select, is practically nil, should not we advise our patients to submit to such operation, and get rid of a condition which has such very serious possibilities if left to itself? In order to see what bearing my own statistics have upon this question, I have looked over the cases of hysterectomy for fibroids occurring in the last 100 abdominal operations which I have done for all conditions. I find that they number 19. This comprises both small and large tumors, and of these 19 cases 2 died. Both of these cases were large tumors which had existed for a great many years, and which presumably could have been successfully removed if taken earlier. The histories of these cases show some very interesting points.

CASE I. Mrs. A., fifty-two years old, married, two children, consulted me in July, 1898, for an abdominal tumor which began on the right side about twenty years ago. It grew slowly, but about six years previous to my seeing her had become so large as to occasion her a great deal of annoyance from its size and weight. She then placed herself under the care of an irregular practitioner, who promised her that he could cure her by such simple measures as massage, electricity and tampons. For six years she faithfully continued the treatment advised, all the time being buoyed up with the hope of relief which was always promised, yet all the time conscious that the tumor

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was slowly increasing. There had been slight hemorrhage, but it was not an important factor. There was some swelling of the feet and ankles. Her general health was fairly good and there was no especial trouble with micturition, defecation or digestion. She was not especially anemic. She was a small woman, and, by contrast, the size of the tumor constituted a great deformity. She measured 45 inches around the tumor at its largest circumference, distance from the sternum to the umbilicus $10\frac{1}{2}$ inches, and from the umbilicus to the pubes 13 inches. In view of the size of the tumor, which would render an operation hazardous, the fairly good condition of the patient, and the fact that if possible she wished to avoid an operation, it was concluded to postpone operative interference for the present. She was again seen in October of that year. There was a slight increase in the size of the tumor as shown by the measurements. Early in November she began to suffer from what seemed to be peritonitis. There was fever, increased pain and sensitiveness in the tumor, tympanites and inability to lie down for any length of time. The tumor sagged more and pulled upon the abdomen and the patient's condition was pitiable in the extreme. She could remain but a very short time in one position and it was hard for her to move without assistance. Her sleep was only in snatches, the longest period being half an hour. Two or three hours a night was all the rest she could get. There was a constant formation of gas in spite of large dejections. The abdominal walls became tense and shiny and she said she felt as if the skin were bursting. The veins in the lower abdomen stood out in cords as large as a pencil.

On November 15th Dr. Maurice Richardson saw her in consultation with me. In spite of the gravity of the situation, he felt that an operation held out her only chance, and it was therefore decided upon. The operation was done on November 17th. As her condition was so critical, and it was important to save all time possible, I asked Dr. Bennett, of New York, to superintend the anesthesia. Everything being ready for the operation, she was placed upon the table and anesthesia begun with nitrous oxide gas, for which ether was substituted as soon as unconsciousness occurred. Within three minutes after the beginning of the administration of the gas the operation was begun. On opening the abdomen there were evidences of acute peritonitis. The tumor was adherent extensively over its anterior surface, and there were small collections of turbid fluid at various points. The tumor had so filled up the pelvis that it was almost impossible to get any pedicle, so the capsule was split all around as low down as possible, and the tumor shelled out of its bed, and it and the uterus quickly removed, all bleeding points being clamped and tied as they appeared. Owing to the patient's enfeebled condition, the operation was hastened, and a large amount of shreddy fragments of the capsule and peritoneal surfaces was necessarily left adherent to the stump. As there was considerable oozing, and so much bruised tissue left, a Mikulicz gauze packing and drain were introduced and the incision closed except the lower two inches. The whole operation lasted fifty-five minutes, and the marvellous skill of the anesthetist was shown by the fact that less than two ounces of ether were used. The patient was in fair condition when put back to bed. At the afternoon visit her pulse was from 110 to 120. There

had been no vomiting, only slight nausea, and for the first time in years she was lying on her back without discomfort. The day following the operation an enema was given, with the result that enormous quantities of gas were passed. The patient complained of no pain, but was apprehensive and could not sleep. Quantities of serum oozed away from the abdominal wound. On the 19th, that is, two days after the operation, the drain was removed. A large amount of pink fluid without much odor was aspirated, and in the evening the abdomen was washed out and a glass tube inserted. The patient took nourishment freely, and the bowels moved at intervals. The temperature gradually rose, however. It reached 104° on the evening of the 19th. It was lower on the 20th, the patient's tongue was cleaner, and her general condition better. Following this, however, there was a gradual sinking of the patient. The discharge from the wound became very foul, the edges of the abdominal wound looked gangrenous, and in fact, it seemed as if there were no life in the abdominal wall. The appetite failed, the temperature gradually sank, while the pulse increased in rapidity, until the patient died on the morning of the 24th, just a week after the operation.

Dr. Whitney reported that the tumor weighed 32 pounds after being cut open and considerable fluid escaping. There was no evidence of any degeneration.

CASE II. Mrs. H., forty-two, no children, consulted me December, 1896. She first noticed five years before an abdominal tumor which had grown steadily, until now it was about the size of the pregnant uterus at term. The symptoms she complained of were irregularity of the menstruation, with more or less constant flowing, generally scanty. She had pain in the left side at night. For the last six months there had been a more rapid increase in the size of the growth, and greater weight. An operation for its removal was advised, and it was done on December 31st. The abdomen was opened, and the tumor, which was found to be free from adhesions, was removed in the usual way, leaving the cervix. On the right side the growth had pushed into the broad ligament, and had so dislocated the right ureter that it was cut when the broad ligament was tied off. As the upper portion was too short to be brought down and inserted into the bladder, an end-to-end suture of the ureter was made with fine silk. Fearing that the suture might not hold, and that there might be leakage of urine into the peritoneal cavity, a drain was employed. There was a good deal of shock following the operation. There was absolute suppression of urine for thirty-six hours. It then began to be secreted, and for the next two days there was a normal amount passed. Symptoms of peritonitis appeared, although apparently the suture of the ureter held, and the patient died from septic peritonitis on the fourth day.

These 2 cases whose histories I have given are the only fatal ones occurring in a series of 19, and it will be seen that they were both large tumors, presenting conditions which made the operations much more serious than if they had been smaller. Could these patients have been operated upon at an earlier stage there is very little doubt but that they would have recovered. The lesson that these cases has taught me is that there are distinct dangers in delay, and that a fibroid tumor which is giving rise

to symptoms should be removed, and that the mortality from such operations is practically *nil*.

The prominent feature and the element of danger in the 2 cases whose histories have been given was the size of the tumor. There are, however, as I have said before, other dangers which are no less to be feared. Thus in these 19 cases there were 2 where there was found malignant degeneration. I say malignant degeneration, though I believe pathologists are in doubt whether such cases are the occurrence of cancer alongside of a fibroid, independently, or an actual change of a fibroid into a cancer, with the probabilities in favor of the former. At least, Dr. Whitney says he never has seen a case where there seemed to be an actual change of one tissue into the other. Dr. Whitney's report of one is as follows: "The examination of the tumor of uterus removed June 11th showed a large fasciculated growth in the fundus, white and fibrous looking. The examination showed it to be a fibromyoma. The fundus of the uterus was enlarged, the cavity filled with a shaggy growth, and the walls extensively infiltrated with a soft, opaque new growth. Microscopic examination showed it to be made up of irregular masses of gland-like tissue in places filled quite solid with epithelial cells. The diagnosis is a fibromyoma combined with adenocarcinoma of the uterus."

The second case which showed a malignant change was a very interesting one. The tumor was about the size of a fetal head, and was of a multiple variety. One nodule had developed low down in the cervix, and it extended towards the left in the base of the broad ligament, so that its removal without cutting the ureter was almost impossible. A portion of it was therefore left. The greater part of the mass, according to Dr. Whitney's report, which I will not give in detail, was composed of nodules of varying size, which had undergone marked calcification, and at one part had become cystic, with rather gelatinous contents, and fragments of anemic necrotic tissue. In one small nodule projecting from the fundus there was a condition which, according to the microscopical examination, justified the diagnosis of a calcifying sarcoma, which Dr. Whitney did not regard as of a very malignant type. The patient returned home in a month, but there was a rapid growth of a malignant character in the course of a few weeks, and she died about four months after the operation.

It will be noticed that in the last case there was in addition to the other conditions a beginning anemic necrosis. This same change occurred also in 2 other cases, both large tumors, but both of which made good recoveries from the operation. One of them was distinctly septic before the operation, and it was undertaken only after a consultation and with grave doubts as to the outcome, but the recovery was absolutely uneventful.

To sum up these grave conditions incident to what are so often called benign and harmless tumors, we have 2 cases of death where the tumors were large, 2 cases of malignant degeneration, and 3 of anemic necrosis, 1 of the latter cases presenting malignancy as well. We thus have out of 19 cases 6 where life was threatened by the presence of these growths. With this array of possibilities before us it seems to me that when patients present themselves with tumors of moderate size, which are clearly causing symptoms which interfere with the patient's en-

joyment of life, that their removal should be urged. By this statement I do not mean that every fibroid tumor should be operated upon. Many give rise to absolutely no symptoms. They may either grow not at all, or so slowly that the menopause may be reached and the tumors atrophy, without in any way proving a source of disturbance. But when a tumor is causing hemorrhage, is causing pain and discomfort, is a source of embarrassment, as it well may be in a single woman, the operation may be prescribed, as not the only, but on the whole the best, course to pursue.

Modern methods of operating have lessened the weight of some objections; thus in young married women who do not contemplate with equanimity the loss of the uterus and an absolute end to all possibility of pregnancy, the hope that a myomectomy can be done may be held out. Increased experience shows that this may be done in the case of tumors of considerable size, and many a woman would be willing and glad to part with her tumor if she need not thereby lose uterus and ovaries.

I therefore find myself, as my experience in the history of these tumors, if left to themselves, enlarges, and the fear of a fatal issue in operating for small tumors lessens with improved technique, advising their removal at an early stage if symptoms are present. How strongly I urge the operation depends somewhat upon the circumstances under which the patient lives. If she is where I or some careful practitioner can watch her, and examine her from time to time, note the effect of any hemorrhage which may be present, observe the rate of growth of the tumor, and be prepared to operate or advise operation before the patient's general health has been undermined, I do not urge immediate operation so strongly. Should she desire an operation, however, I should accede willingly, as I believe a patient has a right to decide for herself in such a matter. In the case, however, of a patient who lives at a distance, who cannot be watched, and who cannot command skilled oversight or service, I should urge operation without delay.

HYSTERECTOMY FOR MYOMA IN AMERICA.¹

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IN the development of the operation of hysterectomy America has had a large share, both by original inventions and by adopting and perfecting the work of Continental and British operators. Although the earlier surgeons worked in isolation, and in ignorance of the methods of each other and of European operators, yet during the last generation a constant succession of ambitious youths and of successful and mature surgeons has taken advantage of the unbounded courtesy of distinguished European operators, and especially those of Germany, to complete their education or to improve their practice, respectively, by observations in the great clinics of the Old World.

A complete review of the evolution of hysterectomy in America would be too voluminous for this occasion and the writer would refer to an article already published by himself on that subject.² It may suffice to

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² Evolution in America of Abdominal Hysterectomy and the Total Extirpation of the Uterus. *Zeitschr. f. Geb. u. Gynäk.*, 1895; *Annals of Gynecology and Pediatrics*, June, 1895.