Original Articles.

SOME OBSERVATIONS ON MALIGNANT DISEASE OF THE UTERUS.¹

BY F. H. DAVENPORT, M.D.

THE question of malignancy is one which is constantly confronting the surgeon in his work, and determining its character. It is liable to crop out in unexpected forms and places, and the diagnostician should be constantly on the alert to detect its presence, and the operator ready to adapt his methods to the new conditions. Take, for example, the changes to which the endometrium is liable, in the various inflammatory processes of which it may be the seat. The symptoms which draw our attention to a diseased condition of this mucous membrane are hemorrhage and increased discharge. The rational treatment for the relief of these symptoms is dilatation and curetting, and the prudent surgeon will submit what has been removed by the curette to the microscope, for information as to the true character of the process. Too often the pathologist is unable to decide from the scrapings whether the disease is merely a hypertrophic endometritis, a benign disease and one which rarely tends to become malignant, or whether we have to do with a beginning adenoma. Meanwhile the patient's condition improves, the hemorrhage and discharge cease and for a time she considers herself well. But the symptoms return, and then arises one of those important questions to decide whether a second curetting shall be done, or whether a serious radical operation, the removal of the uterus, shall be undertaken. The return of the symptoms favors the probability of malignancy, temporizing may lessen the chances of the complete removal of the disease, and the *pros* and *cons* have to be very carefully and honestly considered in deciding upon one's course of action.

CASE I will illustrate what I have just said. Miss A, forty-two years old, single, entered the Free Hospital for Women, April 22, 1890. Her catamenia began at thirteen, and until within five years had always been regular, lasting five days, and unaccompanied by pain. Then the length of time the menstrual flow lasted gradually increased until it became irregular, varying from nine days to seven weeks. The amount was usually moderate, but at times required the use of six or seven napkins a day. She complained of dull pain in the lower abdomen.

On May 8th the uterus was curetted, and the specimen sent to Dr. W. F. Whitney, who reported as follows: "The fragments removed from the uterus by you on May 8th are grayish, medullary-looking masses which are made up of solid plugs of epithelial cells, separated by a few small bands of fibrous tissue. There was no evidence of glands or other normal structures of the uterus. The diagnosis is cancer."

In view of this report, hysterectomy was advised, and done by the vaginal method on May 29th; clamps were used. The patient made an uninterrupted recovery.

Dr. Whitney examined the uterus and reported that it was "enlarged about one-third, mucous membrane thickened, and projecting into the cavity as little polypoid masses. Microscopic examination showed the glands and interglandular substance both much in-

creased and dipping down below the level of the muscular substance, but only for a very little way. None of the growth could be found beyond this limit. It had apparently all been removed. The diagnosis was malignant adenoma.

The class of cases to which this belongs forms the most favorable for operation; and in view of the fact that scrapings from the uterus are often inadequate for purposes of diagnosis, and that we have no sure evidence that a simple hyperplastic endometritis may not become gradually transformed into a malignant adenoma, and that vaginal hysterectomy is an operation which if properly performed has almost no mortality, I would advocate removal of the uterus in any case of persistent uterine hemorrhage which recurred after one or two curettings, unless some adequate cause, such as a fibroid, or ovarian tumor, could be found to account for it, and that even though the microscope showed nothing but simple hypertrophy of the uterine mucosa.

Again, malignant disease may be present where it is not suspected, and be discovered only at the time of operation, thereby modifying the procedure at the time, or be found out subsequently, influencing the prognosis, and determining what course shall be pursued if later operative measures become necessary.

CASE II is an example of this. Mrs. F., fifty-five years old, consulted me in March, 1895. She had had three children and three miscarriages. She gave a history of constant flow for four and a half years, usually moderate in amount, but at times amounting to hemorrhage, and requiring packing. No pain. Had had electrical treatment for six months. On examination an enlarged uterus was found, about the size of a four months' pregnancy, movable and hard. The diagnosis of a uterine fibroid was made, and in view of the persistency of the hemorrhage, and the anemic condition of the patient, hysterectomy was advised. The operation was done June 10th at St. Margaret's. The enlarged uterus was removed by tying off the broad ligaments on either side, passing ligatures around the uterine arteries near the uterus, stripping down the peritoneum anteriorly and posteriorly and then cutting the uterus across, leaving the cervical portion behind. The peritoneal flaps were then sewed together with fine silk, and the abdominal wound closed. The patient made a good recovery.

The specimen was sent to Dr. W. F. Whitney who made the following report: "The examination of the tumor of the uterus removed June 10th showed a large fasciculated growth in the fundus, white and fibrous-looking. The examination showed it to be a fibro-myoma. 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 fibro-myoma combined with adeno-carcinoma of the uterus."

Here was a case where the operation confirmed the original diagnosis, but where a subsequent examination of the tumor revealed the presence of an additional disease very much more serious than the first apparent trouble. In the light of the later discovery various considerations presented themselves to my mind. In the first place, as to diagnosis, it seems to me that the fact of four years and a half continuous

¹ Read before the Boston Society for Medical Improvement December 16, 1895.

hemorrhage in a woman past the menopause is very unusual from a fibroid alone. The possibility of a malignant degeneration should have presented itself. On the other hand, the absence of foul discharge in all that time favored the diagnosis of myoma alone.

As regards the operation, in either case hysterectomy was indicated, but had I known that there was malignant disease in the fundus, I should have modified my procedure so as to have removed the whole organ and not left part of the cervix. My habit of cauterizing the canal with the Paquelin might, in case the disease had extended below the line of removal, have slightly lessened the chances of a return, but I should not expect a destruction of more than the superficial layers of the mucous membrane from the cautery. My patient was in no condition to have a second operation done for the removal of the button of cervix left, therefore I did nothing at the time. If the disease was confined to the fundus the patient has a good chance of escaping without further trouble; if it had gone beyond the point of separation and invaded the cervical canal, it will return, and some operative interference may be necessary.

At this time, December, 1895, I have just had a letter stating that the patient is perfectly well, has no hemorrhage, discharge or pain, and no evidence of any return of the disease.

These doubtful cases are more often forms of adenoma than other varieties of malignant disease. This arises from the fact that the glandular tissue which forms the basis of these growths is not so accessible as the epithelial surfaces. They are most often found inside the uterus, the lining membrane of which is rich in glandular tissue, but they may arise in other situations, where their origin is not so clear.

An interesting case of this character is the following:

CASE III. Miss M., forty years of age, single, first consulted me July 3, 1895. She brought a letter from her physician, stating that a few weeks previously he had removed a small uterine polypus, and had at the same time discovered a small growth in the upper part of the vagina between it and the rectum, which he feared was malignant. The patient gave a history of having for a year felt a sensation of pressure in the rectum on sitting down, and especially when unwell. General health has suffered somewhat, and has felt very nervous about herself. Examination showed in the upper part of the vagina posteriorly under the mucous membrane a firm oblong body about the size of an almond. It was imbedded in the tissues between the vagina and rectum, apparently not attached to either membrane as vaginal and rectal examination showed. It was also entirely separate from the uterus. Patient was advised to have it removed, the opinion being expressed that it might not be malignant. This was based on the fact that in May, 1893, I removed a growth situated almost similarly, and of about the same size, which Dr. Whitney examined and pronounced a fibro-myoma of the vaginal walls. The operation was done July 23d, and the tumor dissected out and the rectum not opened.

The specimen was sent to Dr. F. B. Mallory who reported as follows: "The two pieces of dense tissue from the vagina show glands in small numbers but often very long and branching, and occasionally a little dilated, imbedded in smooth muscle fibres and dense fibrous tissue. Diagnosis, malignant adenoma.

The source of the growth I am unable to state, but it is more suggestive perhaps of the uterus or ovary than of the rectum. The glands are lined with columnar epithelial cells."

In view of this diagnosis the prognosis is distinctly unfavorable and I should expect a return. In fact, the last time I saw the patient, it seemed to me that there was a thickening at the angle of the cicatrix on the left side which was not to be explained by the induration resulting from allowing the wound to heal by granulation.

I do not think the last word has been said as to the method of dealing with beginning epithelioma of the cervix. I am well aware that the statement that it is more surgical to remove the whole organ than a part, because it insures a greater chance of immunity from a return of the disease is plausible and at first sight incontrovertible. But with a larger experience with both operations, I am less and less inclined to give up the high amputation in selected cases. Of ten hysterectomies for malignant disease, eight done for epithelioma all have had a recurrence and are dead. Two cases done for adenoma are living after five years. Of a similar number of high amputations two are living after a lapse of four and three years respectively, one absolutely free from return, the other probably so.

I am of the opinion that the majority of the cases which hold out any reasonable prospects of cure by hysterectomy are equally good subjects for high amputation. When the disease has got beyond the uterine wall, recurrence is almost sure to take place. In such cases I am more and more inclined to advise against operation, and to alleviate the patient's symptoms by minor operations, as curetting, and by the various applications and douches which are usually employed. If the patient, as is now and then the case, demands that some radical operation be tried, it should of course be attempted. The one argument for attempting complete removal in apparently hopeless cases, is that in case of return, the disease manifests itself below the surface and the patient and friends are spared the disagreeable features of a sloughing mass of tissue and there is often less pain.

Where the uterus is movable and the adnexa apparently free from disease, I am governed in my choice of operation by the extent of the growth and its character. Cases of true epithelioma, starting on the external surface of the vaginal portion, forming masses which project outwards into the vagina, and where the cervical mucous membrane is but little affected are particularly suitable for the high amputation. On the other hand, cases especially of adenocarcinoma which begin in the cervical canal and cause deep destruction of the cervical tissues with very little manifestation of the vaginal portion, are better adapted for hysterectomy. In these cases the disease is apt to progress towards the sides, and upwards along the uterine canal so that only the thinnest layer of healthy tissue remains. It is therefore exceedingly difficult in high amputation to keep outside the limits of the disease.

It may be asked, What advantage has the less severe operation in any case of undoubted cancer? I think there are two, and perhaps three, considerations which might turn the scale in favor of amputation. The first of these is the lessened danger of auto-infection. I am convinced that not a few cases of return of malignant disease after hysterectomy are due to in-

fection of the raw surfaces at the time of operation. Even where the greatest care is exercised to thoroughly curette and cauterize beforehand, the danger from this source is great. There are extensive raw surfaces left, to which particles of cancerous tissue may easily be conveyed by instrument or fingers, and become in time the starting-point of a second growth. With the high amputation this danger is minimized. All the cut surfaces are thoroughly cauterized with the Pacquelin, so as to completely destroy any bits of diseased tissue which might accidentally have lodged upon them.

Again, if the disease makes its reappearance it is impossible to reach it for second operation if hysterectomy has been done, while if amputation has been the operation chosen, it may return in such a situation as to make a second operation not only feasible but successful. I have known more than one case where this has occurred, where the disease has cropped out after some weeks or months, and a second or third operation has resulted in a cure, if immunity for years constitutes a cure. To be sure, the objector might say that if the whole organ had been removed these recurrences could not have taken place. True, as regards the place where they did occur, but the patient would have run the risk of auto-infection of which I have just spoken, in which case no second operation could have been done.

A third reason for advocating high amputation in early cases is that many patients would be willing to undergo what to them would be a simple operation, who would not be willing to run the greater risk. Strange as it may seem, even in the face of certain death if the disease is left alone, patients are unwilling to undergo a capital operation. I believe that by advocating the less serious procedure lives could be saved which would otherwise be inevitably sacrificed.

The experience of Dr. John Byrne of Brooklyn with high amputation by means of the actual cautery bears out these propositions. He claims that this method of treating uterine cancer has two most important advantages: First, absolute freedom from danger, immediate or remote; and second a larger respite from recurrence of the disease.² The statistics of Dr. Baker are also confirmative of these views.

As regards definite cure, it is no use to give statistics of cases until a number of years has passed. There are numerous instances of a return after three, four and five years of immunity. An interesting example of this occurred this year. A patient of mine who had shown no evidence of a return for three and a half years, was found to have a recurrence, and in an unusual situation. The history of the case is as follows:

CASE IV. Mrs. W. first consulted me October 22, 1891. She was thirty-one years of age, had been married seven years, had never had a child, and only one doubtful miscarriage, the first year of her married life, when she passed a menstrual period two weeks. Had had a discharge for five months, at first white, now at times colored, and increased in quantity. Had noticed a disagreeable odor for two months. Menstruation for the past few months somewhat more profuse. Some pain in lower part of back, and had lost strength.

Examination showed an epithelioma of the vaginal portion, principally affecting the posterior lip. It had

not extended beyond the vaginal junction, and the broad ligaments were not involved. I therefore decided to perform high amputation, which was done November 3d. Dr. Whitney confirmed the diagnosis. She made a good recovery, and was seen at frequent intervals the next two years.

June, 1893, she was found to be three months pregnant, but miscarried in July, without known cause. Continued well, without any evidence of a return of the trouble until March 13, 1895, when she complained of a pain in the left leg. Examination showed a small, hard lump, the size of a filbert, in the lower part of the left broad ligament, apparently entirely distinct from the uterus, moderately sensitive. This was dissected out on May 21st and was found to be a metastasis involving the ureter, which was cut. Patient recovered with an ureteral fistula. She was last seen November 5, 1895. The amount of urine which escapes *per vaginam* is growing less and less and the patient's health has improved very much. No evidence of a return of the disease.

In this case one would have expected that if there was a tendency to a return of the disease, it would have manifested itself most readily in connection with the pregnancy and miscarriage, and on the cervix. Instead, an isolated nodule appeared at some little distance from the cervix, and three and a half years subsequent to the first operation. Such a case emphasizes the fact that malignant disease is a most uncertain factor to deal with.

There is one other form of malignant disease which is most discouraging to the operator, namely, malignant degeneration of ovarian tumors. Occasionally the diagnosis may be made beforehand, but more often it comes as an unwelcome surprise to the operator. It is not always an easy matter to know what course to pursue under the circumstances. Many surgeons, if they are convinced that malignant disease exists, close the abdomen without attempting to do anything. My own practice has been to do as much as I safely could, and the reason which has led me to adopt this course is that I think it is a satisfaction both to the patient and her friends to feel that an attempt has been made to complete the operation. Nor is it in my opinion possible to always diagnose malignancy from the gross appearances, and an honest effort should be made to remove whatever is diseased. I had two cases this past summer which, as regards the gross appearances of the tumors, so resembled each other, that from that alone I could not have told that one was malignant and the other not. The presence of metastases in the omentum in one showed the true nature of the case; but the other might well have been an earlier stage of the process. They certainly seemed almost equally hopeless during the operation. The case of cancer was that of a woman of fifty-five, who had had an abdominal growth for two or three years. It had not, however, inconvenienced her to any great extent until a few months before I saw her, when she slipped on getting on to an electric car and strained her side. From this time she began to have pain, the abdomen grew larger, she began to emaciate and grow weak. Her physician sent her to me June 18, 1895, and I operated the next day. On opening the abdomen, there were found two large ovarian cysts, the right the size of a child's head, the left a little smaller. They were universally adherent to bowels, omentum and abdominal parietes. Many of the adhesions were

² Brooklyn Medical Journal, October, 1892.

easily broken up, but others were very firm and had to be tied off. The bases of the tumors were transformed into masses of solid tissue, which were in places tied off and in others separated forcibly. The omentum was studded with metastatic deposits and the peritoneal surfaces roughened with small transparent bodies. Both tumors and a considerable portion of the omentum were removed. The patient did well for four days, took nourishment, had movements from the bowels, pulse and temperature satisfactory. On the fifth day there was a sudden rise of temperature, and the patient died in a few hours.

Dr. Mallory's report of the specimens is as follows :

"Two ovarian tumors, one larger than the other ; the size of each mainly due to a large cyst which had been punctured. The two tumors were much alike in structure. Besides the large cyst each contained a number of small cysts and masses of solid tissue. The inner wall in places of the large and small cysts was covered with a delicate papillary growth, in some places one centimetre in depth. Microscopic examination of the solid tissue showed numerous glands lined with columnar epithelium, also in places solid masses of epithelium, many of the glands contained small masses of hyaline material, and some were dilated into small cysts, with papillary masses projecting into them. The stroma was well marked, and consisted of fibrous tissue. The papillary masses on the wall of the large cyst showed a similar outgrowth of connective tissue covered with a columnar epithelium. On the base of the papillary masses were numerous glands. Several of the small cysts on the surface of the tumors had ruptured, and papillary masses projected out of them. The Fallopian tube on the larger tumor had two fibrinated openings. Attached to the larger tumor was a considerable portion of the omentum throughout which were disseminated many small nodules from the size of a pin's head to a small marble. Examination of them showed them to be made up of glands and masses of epithelial cells similar to those in the more solid parts of the ovarian tumors, imbedded in a well-marked connective stroma. Diagnosis, papillary adenocystoma of each ovary, with adeno-carcinomatous transformation, and metastasis in omentum."

Dr. Mallory further says that the transformation of a papillary adenocystoma into a malignant growth is not very common, although well-known to occur.

The other case, which was operated on within a week of this one, had the same papillary growths and the same solid masses at the base and I should not have been at all surprised to learn that it, too, was malignant, but no such change was found.

A word or two in closing as to prophylaxis. In the case of abdominal tumors, operate early. Such a case as the last reported might have been saved had the patient consented to operation when the tumor was first discovered. In the case of hemorrhage from the uterus, curette, subject the scrapings to the microscope and at the first return of symptoms curette again and get mucosa into a healthy condition if possible, but if the hemorrhage recurs even though the microscope fails to detect malignancy, be on the side of radicalism, and remove the uterus.

As regards cancer of the vaginal portion, especially epithelioma, I believe lacerations of the cervix stand in a certain causal relation. I would, therefore, on that ground alone, even in the absence of other symptoms referable to the lesion, urge the repair of all lacerations

of the cervix which present themselves. I believe if this practice could be carried out, the number of cases of cancer would diminish. Finally, I would emphasize the duty of the profession to examine early all cases of irregular hemorrhage or foul discharge, that if malignant disease be present they may be operated on immediately.

ENURESIS IN CHILDREN.¹

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IN looking over my notes for something to present to your attention this evening I find that in the past five years I have treated 62 cases of nocturnal enuresis in children, a number which is certainly sufficiently large to apologize for my directing your notice to this troublesome affection. It is, moreover, a source of surprise to me to see how lightly this subject is dismissed by most of our modern authors. Sachs, for example, in his treatise on the nervous diseases of children, in spite of the fact that the infirmity is now classed among the neuroses, disposes of the whole question in a single page in which I find the assertion that: "Many medical men have seriously suggested that corporal punishment applied to the nates is the only efficient remedy . . . but . . . it is very certain that such punishment need not be inflicted in the majority of cases." The relative frequency of the infirmity and the slight notice it has attracted are my reasons for bringing this subject to your notice this evening.

Of the 62 cases included in my notes, 34 were in girls and 28 were in boys, thus showing that sex does not play an important part in its causation. The ages of the patients were as follows :

TABLE OF AGES.

Ages.	Boys.	Girls.	Total.
Two	2	1	3
Three	0	3	3
Four	3	6	9
Five	2	0	2
Six	1	3	4
Seven	4	6	10
Eight	1	3	4
Nine	1	2	3
Ten	3	1	4
Eleven	3	2	5
Twelve	4	5	9
Thirteen	1	1	2
Fourteen	1	0	1
Fifteen	2	1	3
Total	28	34	62

From this table we again see that age does not seem to be a particularly important factor, though in this context it is interesting to note that while Dr. Rotch, in his new book on pediatrics, in the two pages devoted to this affection says: "The cases in which enuresis does not disappear at puberty are nearly always in girls," we find that in the fifteen cases in the table occurring after the twelfth year rather more than 50 per cent. occurred in boys.

In 13 of the cases a definite cause of reflex irritation was detected and corrected, in 12 with a cessation of the enuresis. These causes were as follows: Adherent prepuce, four cases; vulvo-vaginitis, with gonococci, one case; oxyuris vermicularis, five cases; chronic ileo-colitis, one case; prolapse of the rectum,

¹ A paper read before the Medford Medical Club, December 16, 1895.