TEN CASES OF CANCER OF THE UTERUS OPERATED UPON BY A MORE RADICAL METHOD OF PERFORMING HYSTERECTOMY.

By J. G. Clark, M. D., *Resident Gynecologist, The Johns Hopkins Hospital.*

Since my report of two cases of cancer of the uterus subjected to a more radical method of performing hysterectomy,* eight cases operated upon by Dr. Kelly and myself have been added to this number.

A review by Dr. Russell of the clinical course of cases of cancer of the uterus operated upon by the vaginal and combined vaginal and abdominal methods, in the Johns Hopkins Hospital between October, 1889, and October, 1895, furnishes valuable data concerning the percentage of recurrence, the inherent tendency of cancer of the uterus to remain localized and not to become metastatic, and its certainty to recur if not widely excised.

The results of Dr. Russell's studies are in the main confirmatory of those of Winter and others, and are a most important and conclusive evidence of the necessity for a more radical operation than any heretofore proposed.

With regard to mortality and regionary recurrence, in 37 cases of cancer of the cervix, the results were as follows: 10 per cent. died from the immediate effects of the operation, 38 per cent. died with recurrence, 5 per cent. were not heard from, and 43.2 per cent. were still alive after a period of one to five years.

In none of the fatal cases could a distinct history of metastasis to other organs be elicited, but all died from local recurrence.

This clinical observation is further substantiated by the records of ten autopsies on inoperable cases, made in the Pathological Department of the Johns Hopkins Hospital, which show metastases in only one case beyond the pelvic and retroperitoneal lymph glands.

In four cases there were carcinomatous deposits in the pelvic and retroperitoneal glands; and in five cases, notwithstanding the most extensive local involvement, there were no metastases.

It is not my purpose at this time to go into the pathological aspects of this question, and these brief statements are only made to point to the necessity for a more radical operation.

The systematic steps laid down in my first article remain practically unchanged, notwithstanding the introduction of certain modifications which have been found necessary for the most complete eradication of the disease in the course of the operations in the eight cases now reported.

The operation is not an easy one, and every detail should be worked out on the cadaver before it is attempted on the living subject.

It requires at least two hours and a half for completion, and on account of the close proximity to the great vessels in the pelvis, especially the external iliac veins and arteries, which must be preserved from injury during the course of the

* See July-August Bulletin, 1895.

Digitized by Google

history-of-obgyn.com

excision of the broad ligament, is tedious and involves the most painstaking care if the best results are to be obtained. If the operation is carried out properly in all of its details, especially those relative to the dissection of the uterine arteries and ureters, the field of operation must be perfectly illuminated either by the brightest sunlight or a good electric light. The close anatomical relations of the bladder and rectum to the uterus necessarily preclude the possibility of any operation if the cancerous process has invaded either of these organs, but fortunately the tendency of this disease is to extend laterally into the broad ligaments before it invades the walls of either the bladder or rectum, and notwithstanding the rather extensive involvement of the broad ligaments, the operation promises good results if the cancer has not extended outside of its cervical limits anteriorly or posteriorly.

So far we have had no death from the immediate primary effect of the operation, and this result is attributable to the great care observed in immediately checking all bleeding, and preventing shock by keeping the patient warm during the operation, and injecting normal salt solution beneath the breast and into the rectum at its close.

Before referring to the eight additional cases operated upon by this method it is necessary to repeat the summarized steps of the operation as laid down in my original article, making a brief commentary upon the various steps, with especial reference to the modifications which have been added.

Summary of Steps.

1. Insert bougies under the local effects of cocaine, to save time and conserve the patient's vital powers for the operation.
2. Place patient in the Trendelenberg posture and make abdominal incision of sufficient length to insure free manual movements.
3. Ligate upper portion of broad ligament with ovarian artery; divide vesico-uterine peritoneum around to opposite side; push bladder off, and spread layers of ligament apart, exposing uterine artery.
4. *Dissect uterine artery out for 2½ cm. from uterus beyond its vaginal branch, and tie.*
5. Dissect ureter free in the base of the broad ligament.
6. Ligate remainder of broad ligament close to iliac vessels and cut it away from its pelvic attachment.
7. Carry dissection well down below carcinomatous area, even though cervix alone seems to be involved.
8. Proceed on the opposite side in the same manner as on the first side.
9. Perforate vagina with sharp-pointed scissors, making strong traction on uterus with small vulsellum forceps so as to pull the vagina up and make its walls tense, then ligate in small segments (1 cm.), and cut each segment as it is tied.
10. Insert iodoformized gauze from above into raw space left by the hysterectomy; draw vesical and rectal peritoneum over this with a continuous fine silk suture.
11. Irrigate pelvic cavity and close abdomen without drainage.

In the first case reported it was found impossible to insert the bougie into the ureters, and it became necessary to proceed with the operation without this valuable aid.

Cases occasionally occur in which it is very difficult or impossible to insert the bougies or catheters, and it is well to know in what way to proceed safely with the radical operation in the face of this obstacle.

Under these circumstances the time consumed by the operation must of necessity be greater, as the most careful dissection is required to avoid ligating or cutting the ureters.

If, however, Steps 4 and 5, as above given, are carefully followed the ureters can be avoided safely, and a thorough operation can be performed.

In cases in which the uterus has undergone senile changes, the uterine artery may be small and rather difficult to locate. To facilitate finding this vessel in such cases, a little manœuvre which was adopted in one case will be of great assistance.

After exposing the intraligamentary cellular tissue (Step 3), the leash of vessels which radiates from the common trunk of the uterine artery and enters the loose cellular tissue lateral to the uterus is included in one ligature, when the artery back of this point at once becomes distended, turgid, and stands out quite prominently.

The dissection is then carried down along the course of the vessel, with the handle of the scalpel (Fig. I). In this way there is little danger of injuring the vessel, and by confining the dissection closely to the artery it is safely carried over the ureter, which appears as a glistening cord, to the internal iliac artery, where it is doubly ligated and cut.

By watching the ureter for a few seconds its identity is perfectly recognized by the characteristic rhythmical passage from above downward, of peculiar serpentine waves, first noted by Dr. Kelly. The ureter is then barred through its course in the broad ligament, and no fear need be entertained concerning the impairment of its nutrition by a close dissection, as it carries its own vessels. When the ureter is freed it can be lightly drawn out of the field of operation by a traction ligature while the operation is continued, or in some instances a more feasible plan is to push it out of harm's way against the pelvic wall.

The operations performed without the assistance of the bougies in the ureters can be made very thoroughly, but are infinitely more difficult, and are impossible in patients where the abdominal walls are thick and the pelvis deep.

There is the greatest comfort in having the danger of injuring the ureters completely eliminated from the operation by the presence of the bougies, which can be felt distinctly as solid bodies whenever it is necessary to determine the exact location of the ureters. The object of the careful dissection of the uterine artery (Step 4) is two-fold, first, to permit a complete excision of the broad ligament, and second, to render the operation bloodless.

It has been found expedient to modify Steps 6 and 7.

In order to expose most perfectly the lymphatic glands at the bifurcation of the external and internal iliac arteries it is necessary to ligate and cut the broad ligament as close to the pelvic brim as possible.

In some cases, especially where the peritoneum clings closely to the pelvic walls, or is more or less fixed by an inflammatory process, it is found necessary, as one of the final steps in the

Digitized by Google
history-of-obgyn.com

operation, to split the peritoneum higher up, at the point where the ureter passes over the brim of the pelvis, in order to gain free access to the glands. This modification will be referred to further on.

After cutting the broad ligament away from the brim of the pelvis close to the iliac vessels, the excision should be carried down towards the pelvic floor, great care being observed to dissect out all of the intraligamentary glandular and cellular tissue with it. Especial attention should be paid to the glands at the bifurcation of the iliac vessels, which may not be visible but can be palpated. These glands should be enucleated with the fingers, and the greatest care must be observed in this part of the operation, as one is in the most dangerous proximity to the external iliac artery and vein. Our usual plan is to leave these glands until the last part of the operation, when it will be found more convenient to remove them as shown in Fig. III. When the excision of the broad ligament has been carried down to a point on the pelvic wall corresponding to a transverse line passing through the vesical orifices of the ureters, it is suspended, and the excision of the base of the ligament, which lies in such close relation with the bladder, ureters and rectum, is completed later from below, upward.

After completing the operation on the opposite side in a similar manner (Step 8), the vaginal puncture should be made.

Especial attention is called to the method of excising the portion of the vagina and base of the broad ligaments which are removed with the uterus.

It is exceedingly important to excise a large cuff of vagina; and to accomplish this with the greatest ease and thoroughness, an assistant should insert his finger into the vagina and definitely locate the margins of the cancer, and then withdrawing the finger at least 2 cm. below this point, make strong pressure upward against the anterior vaginal wall. With this assistance the operator is able to dissect down between the bladder and cervix and vagina, and perforate the vagina at the prominence made by the assistant's finger. In this way a wide area outside of the cancer can be excised.

The vagina is opened with pointed scissors, and the anterior wall is ligated in segments, and cut as far out as the ureters on either side (Fig. II). The ligatures must overlap so that a considerable area of tissue may thus be rendered necrotic and thrown off. This makes the extent of the operation wider than that represented by the excised tissue.

From this point on the operation must be continued with the greatest care. The thumb is inserted through the vaginal opening, if the left side is to be excised, and the index finger is carried behind the posterior layers of the broad ligament, acting as a guide to prevent inclusion of the ureter in the ligature and also to indicate the farthest limit for the excision. By constantly pushing the ureter upward against the bladder with the thumb one is able to continue the ligation and excision well out into the broad ligament beyond the vaginal wall and ureters and thus make the most radical operation possible. Fig. II.

The opposite broad ligament is excised from below in the same way when the uterus, broad ligaments and part of the vagina are removed *en masse*.

Before proceeding to Step 10, the pelvic walls in the region of the bifurcation of the iliac vessels are inspected, and if any glands are palpable they should be removed. We have found the following plan of the greatest advantage in this part of the operation. The gland which is usually most prominent is about the size of a large pea or bean and can be palpated distinctly in the crotch of the iliac vessels.

This is worked out from its bed, and when traction is made upon it, the lymph vessel leading upward is made taut and acts as a guide to the next gland. By this procedure we have been able to remove five glands in one chain. It is not possible to go above the pelvic brim, as the last accessible gland lies at this point; the next group of glands being situated higher up on the vena cava and renal vessels.

In operable cases of cancer the metastases rarely go beyond these glands, and frequently, even in very advanced cases, they are not involved.

A further study of the pathology of this subject may show that the removal of these glands will be of value only from the standpoint of prognosis. If the glands are not readily exposed, a grooved director can be inserted beneath the peritoneum along the course of the ureter, when it can be slit open as far as necessary to make the glands accessible and easily removed.

After enucleation of the glands and adjacent cellular tissue the operation is completed according to Steps 10 and 11.

The analogy between cancer of the breast with its glandular involvement and that of the uterus and its involvement of the broad ligament is apparent to all, and the remarkably good results obtained by the radical operation on the breast and axilla have no doubt turned the attention of many operators to the possibility of a more radical operation for cancer of the uterus.

As evidence of this tendency I find, since the publication of my first two cases, that Dr. Reis* of Chicago has worked out experimentally on animals and on cadavers an operation which has for its object the more complete removal of the diseased areas and the pelvic lymph glands.

The operation which Dr. Reis proposed is not described in detail, but I judge from his article that it is similar to the one employed in our ten cases.

Dr. Rumpf† of Berlin reports one case of cancer operated upon, as Reis states, according to his method.

REPORT OF CASES.

CASE 3,‡ Gynecol. No. 3823. R. P., admitted 9, 21, 95, aged 44 years, black.

Chief Complaint. Pains in back and constant bloody vaginal discharge.

Marital History. Married 23 years, ten children, oldest 22 years, youngest 2 years of age, labors natural, easy, usually in bed 2 weeks after labor.

Three miscarriages, no bad sequelæ.

Menstrual History. Flow appeared first in her thirteenth year,

*The Chicago Medical Recorder, November, 1895.

†Centralblatt für Gynecologie, No. 31, 1895.

‡Cases 1 and 2 reported in July-August number of The Johns Hopkins Hospital BULLETIN.

Digitized by Google

history-of-obgyn.com

always regular until within last year. Periods are irregular and flow profuse, bright red in color, fluid.

Family History. Good.

Past History. Healthy all her life.

Present Illness. In July, 1894, she ceased to menstruate, but felt very well. About four months later, during sleep, there was an escape of watery fluid amounting to about one gallon. A slight discharge continued, accompanied by a feeling of weakness in her back, but no actual pain. After two months she had a severe hemorrhage, discharging large clots and fatty-looking material. This has continued, but not so profuse, up to the present time. She suffers occasionally from nausea. Abdomen not tender, locomotion slightly painful.

General Condition. Well nourished woman, mucous membranes anæmic, tongue coated, appetite good, bowels regular, micturition at times painful.

Examination. Outlet relaxed. A fungating friable mass about the size of a large orange fills the vault of the vagina. This mass breaks down on the slightest touch and gives rise to free bleeding. The carcinomatous process involves the entire cervix and extends 1 cm. into the vagina. The broad ligaments are apparently not involved.

Diagnosis. Carcinoma of cervix and vagina.

Operation by Dr. Clark, Oct. 3, 1895. Removal of uterus, broad ligaments and part of vagina, with enucleation of pelvic lymph glands.

Catheters inserted into ureters without difficulty. Operation carried out in all of its details. Pelvic lymph glands, apparently enlarged, dissected out above the brim of the pelvis. A cuff of apparently healthy vagina 2 cm. in width removed with uterus.

Note. This case would have been considered a favorable one for vaginal hysterectomy by many operators, as the broad ligaments did not seem to be involved. The dissection of the uterine arteries, however, showed carcinomatous tissue in the broad ligaments. Pelvic lymph glands also appeared to be involved.

CASE 4, Gynecol. No. 3888. M. C. D., admitted 10, 17, 95, aged 48 years, white.

Chief Complaint. Bloody vaginal discharge.

Marital History. Married 32 years, eight children, labors not difficult, no apparent sequelæ, youngest child 7 years old. Five miscarriages at various times between the births of her children, none since the birth of last child.

Menstrual History. Began at 12 years, regular, flow free, lasting 4 to 5 days, painless. Became irregular 4 or 5 years ago, flow not appearing for 4 or 5 months at a time. Two years ago it began to appear more frequently and to last longer than earlier in her menstrual life. A year ago the flow became prolonged and copious, lasting two to three weeks, and frequently ending with a free hemorrhage. Since January, 1895, flow has been almost continuous.

Leucorrhœa. When free from bleeding she has a copious offensive yellowish discharge.

Family History. Negative.

Personal History. Hemorrhage from stomach and bowels 15 years ago.

Present Ailment. Constant backache for last year, and for the last few weeks she has had a dull aching sensation in her lower abdomen. History of hemorrhages (*vid. sup.*).

General Condition. Very anæmic, but patient says she does not feel debilitated. She is of very spare habit, but says this is her normal condition. Tongue clear, bowels constipated, appetite good.

Examination. Outlet relaxed, vagina contains fetid bloody discharge. Cervix has been entirely excavated and in its place is a deep punched-out ulcerated pit, which extends upward to the cervico-fundal juncture, outward at least 1½ cm. into the broad ligament, and downward as a ragged area for 2½ cm. into vaginal wall. The ureters seem to be surrounded by the carcinomatous process.

Diagnosis. Cancer of cervix and vagina involving the broad ligaments extensively.

Operation, Oct. 18, 1895, by Dr. Clark. Removal of uterus, broad ligament and 3 cm. of vagina, along with enlarged lymph glands on pelvic walls.

Ureters catheterized before administration of anæsthetic without the slightest obstruction to the entrance of catheters, showing that they were not as extensively involved as at first appeared by the vaginal examination.

Operation much more satisfactory than had been anticipated, as it was found upon opening the abdomen that the carcinoma had involved the broad ligament quite extensively but had not reached the ureters. A very thorough dissection was made, and the carcinomatous tissue in the broad ligaments and vagina was apparently entirely removed. The pelvic lymph glands were not enlarged and appeared normal.

Unfortunately the cancer had extended so far anteriorly and posteriorly that the bladder and rectal walls were probably involved.

At the completion of the operation the patient's pulse was 150, but under the influence of an enema of 1 liter of salt solution and the injection of a similar quantity under the breasts, it quickly dropped to 90 after she was returned to the ward.

10, 24. Vaginal gauze removed, no discharge. Patient has had incontinence of urine since the operation, although she voids almost a normal amount.

General Condition. Steadily improving. Symptoms in every way favorable. Temperature 101°, pulse 110.

11, 10. Patient has made a rapid convalescence. Slight incontinence of urine, but much less than when previously noted.

11, 26. Patient discharged. Still has slight incontinence of urine. General condition excellent.

Vaginal wound perfectly healed. No apparent disease visible.

Bladder carefully examined and ureters catheterized to prove definitely that the incontinence did not come from a ureteral fistula. Both ureters found to be normal.

Incontinence probably due to a slight paralysis of the *sphincter urethræ.*

Feb. 24, 1896. Patient's husband reports to-day that his wife is apparently well, has gained in flesh and strength, and is able to do all of her house work. Incontinence quickly passed away after she returned home.

Note.—This case represents the extreme limit of the operation for the radical removal of cancer of the uterus. Prognosis as to cure unfavorable, but as to relief of symptoms and prolongation of life good.

CASE 5, Gynecol. No. 3923. E. J. C., admitted 10, 30, 95, aged 53 years, white.

Chief Complaint. Bloody vaginal discharge.

Marital History. Married twice, the first time 30 years ago, the second time 17 years ago. One child, 23 years of age, labor easy, no bad sequelæ. One miscarriage in the second month 25 years ago.

Menstrual History. Began at 16 years, regular, flow free, lasting 4 to 5 days, without pain. Climacteric one year ago.

Leucorrhœa. For the last few months she has had a thick, yellowish, irritating and offensive discharge.

Family History. One sister dead of phthisis, grandfather had a cancer, otherwise history negative.

Personal History. Healthy as an adult, except an attack of rheumatism four years ago.

Present Ailment. For the last four or five months has had a yellowish discharge, which has lately become blood-tinged. The latter has steadily increased, never amounting to a hemorrhage, but only a slight oozing, more marked after exertion. She has had no pain. Defecation at times painful.

Digitized by Google

history-of-obgyn.com

General Condition. Patient has lost flesh and strength in the last six months. Appetite fair, bowels regular.

Examination. Outlet normal (parous). Cervix excavated by ulcerative process, the normal outlines of the cervix being entirely obliterated, and in its place there is a deep pit which extends up to the cervico-fundal juncture, and out into vaginal walls. Bladder and rectum apparently not involved. Broad ligament slightly fixed and indurated.

Diagnosis. Cancer of cervix and vagina, extending out into broad ligaments.

Oct. 31, 1895. Preliminary curettement without ether, all redundant tissue removed and vagina cleansed.

Nov. 2. Operation by Dr. Kelly. Removal of uterus, broad ligaments and part of vagina, also lymph glands at brim of pelvis.

Bougies inserted before operation. Details of operation carried out in full.

Patient lost no blood during operation, and was returned to ward with a pulse of 112. Saline injection under breasts and salt solution enema of one liter given. Incision closed with buried silver wire and subcutaneous catgut sutures.

Nov. 10. Vaginal gauze removed. Patient has had no nausea or vomiting following operation.

Nov. 11. The incision broke down and discharged a large amount of pus. General condition of patient very good.

Nov. 24. Incision perfectly healed without removal of silver sutures.

Dec. 3. Patient discharged to-day. Examination in the knee breast posture shows the vaginal vault almost completely healed. A small point of cleavage is still present, which is covered with granulation tissue. Imbricated sutures are seen well outside of the limit of granulation tissue.

So far as now demonstrable the result is satisfactory. Patient has made an ideal recovery, with the exception of the suppuration of abdominal wound.

CASE 6, Gyn. No. 3980. M. K., admitted 11, 4, 95, aged 44, white.

Chief Complaint. Constant vaginal discharge of yellowish or bloody matter.

Marital History. Married 29 years, five children, labors normal, three miscarriages, no bad sequelæ.

Menstrual History. Menstruation began at fifteen years, regular, not painful, duration usually four days, but for last two years a day has occasionally intervened during the menstrual flow when the discharge has ceased.

During the past year the flow has occurred at times every two weeks. Two months ago the flow was very copious, amounting as the patient thinks to a hemorrhage. Last period one month ago, of short duration and very scanty. Since last period constant hemorrhagic discharge. Menstruation previous to last two years has been copious, at times discharged in large clots.

Family History. Negative.

Personal History. Measles when a child. Has never been strong.

Present Condition. In June, 1895, patient first noticed that menstrual flow became more or less constant. It has continued without cessation up to the present time, and has increased rapidly in the last three weeks. Discharge is brownish, very fluid, offensive and irritating.

General Condition. Has lost about 20 pounds in past year. Appetite good, marked anæmia, patient feels weak and languid, bowels constipated, micturition painless.

Examination. Outlet greatly relaxed. Filling fornix of vagina and projecting half-way down into the vagina is a fungous mass about the size of a fœtal head. The mass bleeds on the slightest touch, is very friable, and the odor from the discharge is very offensive. The carcinomatous process has destroyed the cervical portion of the uterus, but the vaginal walls seem to be but slightly involved. Vesical and rectal walls not encroached upon. The broad ligaments are apparently involved as far out as the ureters.

Fundus uteri normal in size, freely movable and not adherent. Appendages normal.

Diagnosis. Cancer of cervix extending into broad ligaments.

Operation, Nov. 7, 1895, by Dr. Clark. Removal of uterus with broad ligaments and part of vagina.

Ureteral catheters introduced before ether was administered. The right ureter was catheterized with great difficulty on account of an apparent constriction of its lumen, and during the cleansing of the vagina the catheter slipped out into the bladder, but with the aid of the catheter on the opposite side the operation was completed without great difficulty.

Preliminary curettement of cervical mass attended with much hemorrhage, requiring a tight pack to control it while the abdomen was being opened and the uterine arteries ligated.

Uterine artery senile, requiring a ligature around its branches close to the uterus to make it stand out prominently.

On the right side the carcinomatous process had extended out farther than on the left.

Lymphatic glands in broad ligament not enlarged, and apparently not the seat of metastasis.

Pulse at completion of operation 108, no blood lost during the hysterectomy.

On account of great anæmia and liability to shock, 1 liter of normal salt solution was injected beneath the mammary glands, and 1 liter of salt solution given by enema.

Abdomen closed with buried silver wire and subcutaneous catgut sutures.

Nov. 8. Patient has complained of no thirst, pulse 60, full and strong, rapid recovery from ether.

Nov. 13. Vaginal gauze removed without difficulty.

Nov. 16. Abdominal incision perfectly healed. General condition excellent.

Dec. 5. Patient discharged. Vaginal vault healed with the exception of one small area which looks suspicious.

Note.—On account of the wide extension of the disease on the right side this case is considered unfavorable for permanent cure.

CASE 7, Gynecol. No. 4031. A. A. L., admitted 12, 19, 95, aged 41 years, white.

Complaint. Backache and a constant irritating watery discharge.

Marital History. Married at 17 years of age, two children, oldest 21 years, youngest 19 years. Labors normal. One miscarriage 18 years ago.

Menstrual History. Menstruated first at 13 years of age. Always regular until two years ago. Since that time irregular (see *Present Illness*).

Leucorrhœa. Has had a slight discharge for several years; for last six months this has assumed a watery consistency and is slightly tinged with blood.

Family History. Good.

Past History. Always strong and healthy until present illness began.

Present Illness. Began with a hemorrhage about one and one half years ago while nursing a sick member of the family. This occurred at a regular period, and she gave but little thought to it. The next menstrual epoch was ushered in the same way, the flow continuing more or less profuse for five weeks. Flow then appeared regularly until September, 1895, when she again had a profuse hemorrhage, which recurred November 4th and 26th. Since the last date she has had irregular hemorrhages, with a watery, acrid discharge in the intervals.

General Condition. Patient has not lost an appreciable amount of flesh, but has grown weaker and paler. Bowels constipated, urination normal, appetite poor. Fairly well nourished, mucous membranes pale and anæmic.

Examination. Outlet relaxed. In the vaginal vault there is an ulcerated area 5x7 cm., its longest diameter transverse. The cervix uteri seems only slightly if at all involved. The disease reaches

Digitized by Google

history-of-obgyn.com

within 1½ cm. of the os uteri, which is slightly lacerated but not infiltrated. A small mucous polyp hangs from the cervix. The infected area has a typical carcinomatous appearance, the central portion is necrotic, white, and exhales a fetid odor. The margins are raised and are of a pinkish color, and there is a sharp line of demarcation between it and the surrounding mucous membrane. The entire upper third of the vagina and the upper part of the middle third are involved, and the disease extends over into the right lateral wall. Rectal examination shows no extension of the disease in that direction. Uterus and appendages normal.

Diagnosis. Carcinoma of vagina extending up into right vaginal fornix, and involving broad ligament.

Operation, Dec. 23, 1895, by Dr. Kelly. Removal of uterus, broad ligaments, infected portion of vagina, and accessible pelvic lymph glands.

Black rubber bougie inserted into ureters before the administration of ether.

In this case the usual steps of the operation were departed from, in that the carcinomatous area in the vagina was first outlined by an incision, and partly dissected up to the vaginal fornix, after which the abdominal incision was made and the operation completed in its usual way. It was attended by more bleeding than usual on account of the extreme vascularity of the vaginal walls.

The lymph glands on the right side were enlarged and distinctly palpable. A chain of five glands was dissected off from the bifurcation of the external and internal iliac vessels.

At the completion of the operation, while the ureter on the left side was being pushed to one side, the bougie suddenly broke close to the bladder with an audible snap. Dr. Kelly attempted to push the broken end down into the bladder and catch it with forceps introduced through the urethra, but this proved impossible. He then pushed it back to its former location, and splitting the ureter open longitudinally, withdrew it. The incision was neatly closed with one fine silk mattress suture, without occluding the ureter or diminishing its caliber. Since this accident, hard rubber bougies have been discarded and the English catheter substituted.

At the completion of the operation the patient's pulse was 140 and weak, but it improved at once under the effects of the submammary injections and rectal enema of normal salt solution. Her pulse when she returned to the ward was 128. Incision closed with silver wire and subcutaneous catgut.

Dec. 24. Patient has had considerable pain and nausea. The question of occlusion of the ureter is certainly eliminated by the fact that she has passed twelve hundred cubic centimeters, or a normal amount of urine within the last 24 hours.

Dec. 29. Patient has been exceedingly nervous and complains of great pain. Temperature 100° F., pulse 90. No tenderness or tympanitis. Bowels have moved very satisfactorily. Vaginal gauze removed, slightly blood-stained.

Dec. 30. Abdominal incision separated on account of the breaking of one of the silver wires. Cocaine was at once applied and the edges of the wound were brought together with penetrating silkworm-gut sutures.

Jan. 27th, 1896. Patient has made a steady recovery since the last note and is discharged to-day. The vaginal wound is not entirely healed, but appears perfectly healthy.

CASE 8, Gynecol. No. 4056. G. H., admitted 1, 4, 96, aged 34 years, white.

Complaint. Bloody vaginal discharge.

Marital History. Married 14 years, five children, all labors easy except fifth, which was very tedious. Last labor 3 years ago. Three miscarriages—first in the seventh month, second in the sixth month, and third in the fifth (twin pregnancy), occurring in June, 1895, 1 fœtus macerated, the other living at birth.

Menstrual History. Menses began at 13 years, regular, painless, flow moderate, never clotted previous to July, 1895. Since then the discharge is always clotted and offensive.

Leucorrhœa. None.

Family History. Negative.

Personal History. Always healthy up to July, 1895.

Present Ailment. In July, 1895, one month from the time of her last miscarriage, she began to have a discharge of clotted blood, which increased in frequency and amount until three months ago, when her physician excised part of the cervix. She was temporarily relieved, but flow again appeared and continued up to seven weeks ago, when the cervix was curetted, followed again by slight checking of the discharge.

The discharge is now thick, pinkish and offensive.

General Condition. Has lost considerable flesh. Is of spare habit, anæmic, anxious expression, appetite good, bowels regular, micturition painless.

Examination, Jan. 8, 1896. Outlet moderately relaxed. Projecting from anterior and posterior lip of cervix is a fungating mass, about the size of an egg, which bleeds on touch.

It is almost entirely limited to the cervix, and only projects slightly into anterior and posterior vaginal walls. Fundus uteri slightly enlarged, movable, appendages normal. Broad ligaments do not seem to be involved.

Diagnosis. Cancer of cervix.

Operation, Jan. 8, by Dr. Clark. Removal of uterus, broad ligaments and a wide cuff of vagina, and pelvic lymph glands.

Bougies inserted under the influence of cocaine without difficulty before etherization.

This operation was uncomplicated, and so far as macroscopic appearances of the removed specimen, all of the disease was removed.

Submammary injections of salt solution and rectal enema of 1 liter of salt solution given. Pulse at completion of operation 140 and very weak. In two hours it had dropped to 90 and was full and strong.

Jan. 10. Patient reacted well from operation.

Jan. 16. Vaginal pack removed without difficulty. Patient has been a victim of the morphia habit before she entered the hospital, and suffered greatly from the withdrawal of the drug after operation.

Feb. 8. Patient has made an uneventful recovery. She has increased in weight; her expression is now good, color of skin and mucous membranes greatly improved. General condition excellent.

Examination shows the vaginal vault to be completely healed and there are no apparent remains of the cancer left.

CASE 9, Gynecol. No. 4070. E. P., admitted Jan. 11, 1896, aged 43 years, white.

Complaint. Pain in the lower right abdomen and across kidneys. Almost constant bloody vaginal discharge.

Marital History. Married 26 years. No children and no miscarriages.

Menstrual History. Began at 13 years, always regular, periods occurring every fourth week, not painful, amount moderate, lasting one to two days, bright red, not clotted. Last period Jan. 1, 1896.

Leucorrhœa. For last 10 years, profuse yellowish-green, non-offensive, irritating discharge.

Family History. Negative.

Personal History. No illness since maturity up to the beginning of this ailment.

Present Condition. First noticed pain in left lower abdomen two years ago, occurring suddenly as a sharp cutting pain, which has gradually grown worse, and has often confined her to bed for three days to one week at a time. During attacks pain may be "sharp or dull thudding," does not radiate.

Patient lies on left side with left thigh flexed upon the abdomen. Nausea and vomiting are at times present, though not confined to attacks. Tenderness is more marked during attacks.

When walking she limps and inclines the body forward. Pain

Digitized by Google

history-of-obgyn.com

FIG. I.—Method of dissecting uterine artery out to its origin. Ureter is seen passing immediately beneath uterine artery.

FIG. II.—Uterine artery doubly ligated and cut. Fore-finger posterior to broad ligament, thumb inserted through vaginal incision pushing ureter towards pelvic wall, thus permitting a wide excision of the broad ligament.

history-of-obgyn.com

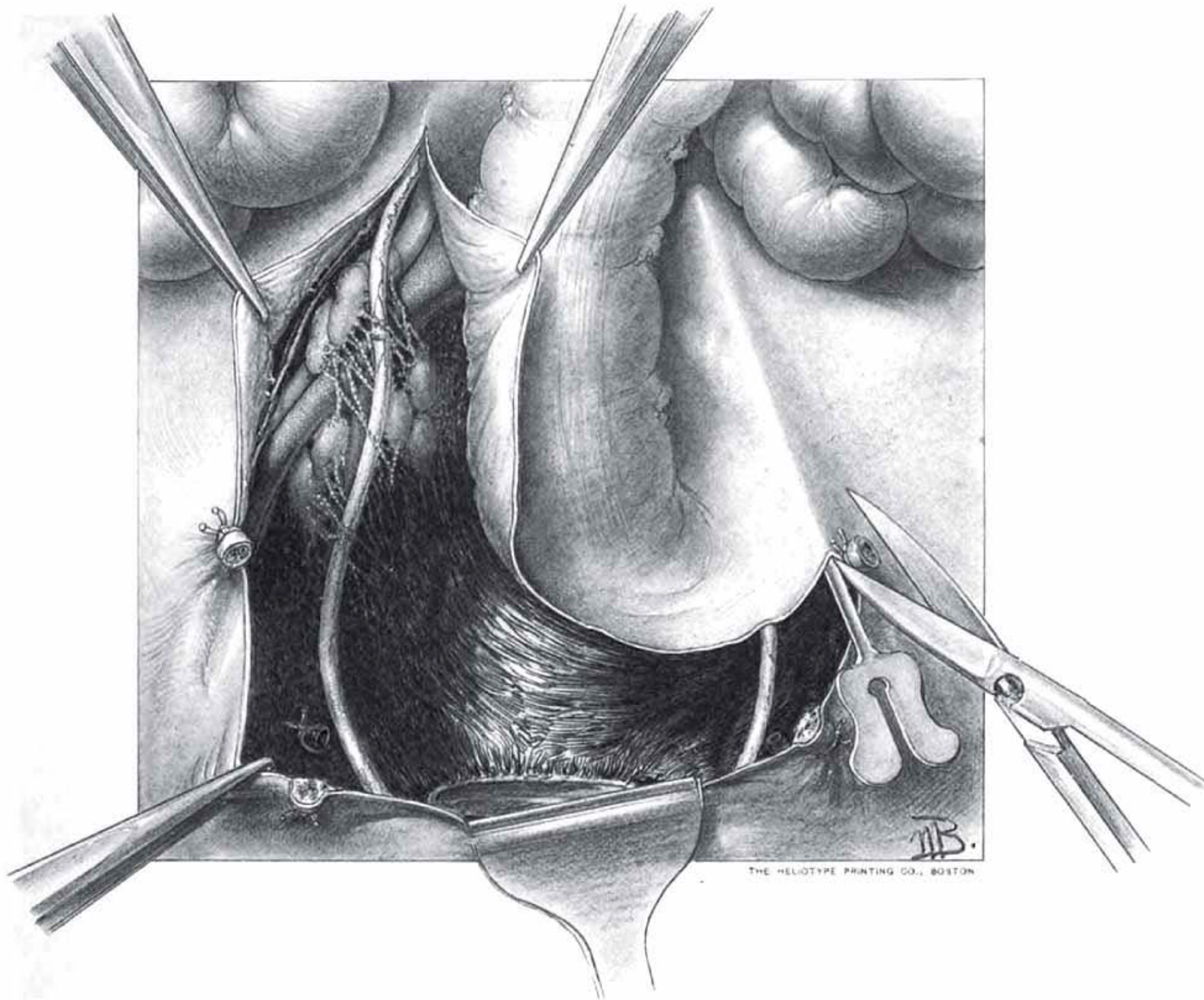

Fig. III.

RADICAL OPERATION FOR CANCER OF THE UTERUS.

ON THE LEFT SIDE THE METHOD OF SPLITTING THE PERITONEUM IS DEMONSTRATED, WHILE ON THE RIGHT THE PERITONEUM IS LAID OPEN, EXPOSING PELVIC LYMPH GLANDS AT THE BIFURCATION OF THE INTERNAL AND EXTERNAL ILIAC VESSELS; ALL THESE GROUPS OF LYMPH GLANDS ARE SELDOM ENLARGED IN ONE CASE. BOUGIES HAVE BEEN INSERTED IN THE URETERS, WHICH STAND OUT PROMINENTLY. STUMPS OF LIGATED UTERINE ARTERIES ARE SEEN EXTERNAL TO THE URETERS.

history-of-obgyn.com

"across the kidneys" began two years ago, and has gradually increased until the present time, when it is a constant ache, which at times is increased to sharp, cutting pain. During these exacerbations of pain the vesical distress is increased, causing frequent voiding of small amounts of urine, which is accompanied and followed by pain and burning.

For past year micturition has been increased in frequency. Retention of urine is painful.

Bloody vaginal discharge began two years ago, at first at variable intervals, but for past year is constant. At first bright red, it varies at present between pink and dark red.

Two months ago she had a larger hemorrhage than usual, discharging a pint of clotted blood.

General Condition. Has lost flesh, fairly well nourished, color not good as formerly. Patient looks much older than the age given (43 years). Appetite good. Bowels constipated. Urine contains a moderate number of pus and epithelial cells.

Examination. Outlet intact, cervix excavated with jagged ulceration, leaving a shell-like margin. This ulcerative process is confined to cervix and has not invaded the vaginal walls.

The broad ligaments appear to be free. Fundus in retro-position freely movable.

Considerable pain on pressure in left ovarian region. Appendages normal.

Diagnosis. Cancer of cervix.

Operation, Jan. 15, by Dr. Kelly. Removal of uterus, broad ligaments, part of vagina and pelvic lymph glands.

Ureters catheterized before administration of ether. Details of operation carried out as usual. A very thorough dissection of intraligamentary and pelvic cellular tissue with the lymphatic glands and vessels. Cancer was found to run out closely to the ureters, and appeared to involve the bladder at these points. The muscular coat of bladder was slightly lacerated, bnt not more so than in former operations. At the completion of the operation the patient was in a very good condition, considering the extensive operation to which she had been subjected.

The usual submammary injection of 1000 cc. of salt solution and a rectal enema of 1000 cc. of salt solution were given.

Incision closed with buried silver wire and catgut.

Jan. 19. Patient has reacted well from the operation. Pack removed and found covered with a slight bloody discharge.

Jan. 22. For the last few days patient has complained of incontinence of urine, with burning pain on micturition. Temperature 99° F. and pulse 90. Patient weak and drowsy.

Jan. 27. Line of incision perfectly healed. Condition otherwise almost same as noted above. Vesical irrigations bring away considerable amount of pus and flaky matter.

Feb. 1. Incontinence continues the same, vulvæ excoriated and red. External genitals bathed with boric acid solution and covered with zinc oxide ointment. Patient's general condition worse.

Feb. 7. Patient very weak and drowsy, expression listless, complete incontinence of urine.

Feb. 10. Patient is now suffering intense pain in bladder and rectum. Condition growing worse rapidly.

Feb. 12. Patient died suddenly this morning.

Autopsy, Feb. 13, by Dr. Flexner.

Anatomical Diagnosis. Operation wound for extirpation of uterus and broad ligament; sloughing cystitis and pericystitic infiltration (purulent). Rupture into rectum. Purulent proctitis. Ascending pyelo-nephritis.

Surface. Body 146 cm. long, slightly built, greatly emaciated, abdomen scaphoid, no subcutaneous œdema.

Mucous membranes of conjunctiva pale.

In midline of body from umbilicus to symphysis, linear scar 14 cm. long, completely healed.

Omentum. The omentum is adherent to under surface of incision by delicate fibrous adhesions; with this exception, the omentum is free; it contains a small amount of fat.

Peritoneum. Peritoneal cavity does not contain any excess of fluid. Intestines free from adhesions, serosa delicate, perhaps a little granular, especially on the jejunum.

Mesenteric glands not enlarged, but through mesentery appear congested. Delicate adhesions between one of the lower loops of the ileum and the stump of the ovarian vessels on the right side.

Appendix. Normal.

Sigmoid flexure. The sigmoid flexure projects to the right side and is bound by very light adhesions to the peritoneum over the iliac muscles, by firmer adhesions to the bladder. On breaking these adhesions to the bladder this is noticed to be much discolored, of a greenish and in places almost black hue, which extends to the peritoneum covering the sigmoid flexure.

The seat of operation is apparently in perfect condition, the peritoneum is firmly united, and the catgut suture joining the vesical and rectal reflections of the peritoneum is not yet absorbed.

Heart. Normal.

Lungs. Normal.

Spleen. Small, but appears normal.

Left kidney. Free from adhesions. Is not markedly dilated. Capsule is adherent; in some places corresponding to the adherent areas the surface is granular.

The cortex generally has a slight pinkish tint in which there are many white elevated nodules, varying in size from a miliary tubercle to lines and dots of sand. On section these agree with linear lines of varying width extending upwards from pelvis.

Pelvis dilated, mucous membrane thickened and congested and shows numerous ecchymoses.

Pelvis contains greenish thick pus.

Ureter dilated to size of a large quill, mucous membrane much congested, thickened and contains small ecchymoses.

Right kidney. Somewhat larger than left, capsule firmly adherent. Pelvis not dilated, but mucous membrane thickened, ecchymotic and very hyperæmic. Kidney a mass of small and confluent abscesses; on section of these, pus escapes only occasionally. It seems to be a diffuse interstitial infiltration rather than localized abscess-formation.

Bladder. Bladder is fixed to pelvic wall and cannot be removed without more or less tearing of its substance. On both lateral walls the soft tissues are necrotic, pigmented, and gangrenous in appearance, as deep as the bony structures. A considerable amount of semi-fluid pus escapes on exerting the slightest pressure on the tissues about the bladder on either side; there is more, however, on the left than right. The bladder itself has thickened walls; its mucous membrane is a pultaceous pigmented purulent mass. There are some mineral concretions in the dark pus which covers the surface.

Left ureter is evidently occluded at its point of entrance into the bladder, but is certainly not included in a ligature.

Intestines. The jejunum is pale and moderately distended. The ileum is contracted. The large intestine is normal. Mucous membrane of the rectum covered with pus, and in its middle third there is an opening communicating with pericystic abscess and bladder.

Pancreas. Pale and firm.

Stomach. The mucous membrane is pale.

Duodenum. A few small congested patches.

Œsophagus. Normal.

Liver. Small, free from adhesions. On section somewhat mottled. Central veins very distinct. Weight 960 grams.

Gall bladder. Moderately distended with thick dark bile.

Glands. All of the glands in the abdominal cavity, so far as they could be found, were dissected out and examined macroscopically.

The retroperitoneal, above the pelvic brim as well as those in the abdominal cavity, especially the glands lying upon the external iliac vessels and between these vessels and the psoas muscle, were removed. In no case were they found to contain metastases, nor were they perceptibly enlarged.

The absence of metastasis refers to the examination by the

Digitized by Google

history-of-obgyn.com

unaided eye. It will be necessary to make sections to exclude metastasis with certainty.

Microscopic Examination. Lymph glands normal.

CASE 10, Gynecol. No. 4143. M. E., admitted 2, 11, 96, aged 33 years, white.

Chief Complaint. Bloody vaginal discharge.

Marital History. Married 17 years, seven children, labors usually long and tedious, especially the first and sixth, non-instrumental. Twin births at one labor.

Attended in confinements by a midwife. Laceration of perineum during first labor. Last labor 3 years ago. One miscarriage in December 1895, no ill effects.

Menstrual History. Flow began at 14 years, regular every fourth week up to 3 years ago. For past three years periods have been exceedingly irregular, varying from one to two months apart. During last six months she is unable to differentiate the menstrual flow from an almost constant hemorrhage which she has had.

Leucorrhœa. During the last six months she has had a profuse, yellowish, non-irritating, offensive discharge, when the bloody discharge was not present.

Family History. Negative.

Personal History. Since maturity no definite illness, but patient has never felt perfectly well.

Present Condition. First noticed bloody vaginal discharge about six months ago, at which time it was very scanty, but has continued almost constantly since that time. At times the flow is very profuse, coming in gushes which vary in amount from ½ to 1 pint.

General Condition. Has lost some flesh, but is still a very stout woman, weighing about 190 pounds. She is very anæmic, appetite good, bowels constipated, micturition normal.

Examination. Outlet considerably relaxed, cervix occupied by a fungating mass which is about the size of a base-ball, and projects half-way down into vagina. This mass springs from the posterior lip of the cervix and has apparently not spread beyond this point. The tissue is very friable and breaks down under the lightest touch. Uterus movable, not adherent. Appendages normal. Broad ligaments do not seem to be involved. The abdominal walls are very thick, and hang pendulous in a large fold.

Diagnosis. Cancer of cervix.

Operation, 2, 13, 96, by Dr. Clark. Removal of uterus, broad ligaments, a cuff 3 cm. in width of vagina, and the pelvic lymph glands.

Catheters inserted into ureters without difficulty before etherization. In this case the operation would have been impossible without the catheters in the ureters, as the abdominal walls were thick, 8 cm. (3 in.), and the pelvis was very deep, which rendered the operation exceedingly difficult.

The entire web-like structure of lymphatics with numerous glands were removed from the lateral pelvic walls, and the vagina was widely excised around the margin of the cancer. The operation required three hours to complete it. The patient's pulse was 146 when she left the table, but under the influence of the salt enemata and injection beneath the breasts, quickly dropped to 110, and the patient recovered rapidly from the anæsthesia without the slightest sign of shock.

Digitized by Google

history-of-obgyn.com