OPERATIONS ON PATIENTS WITH A HÆMOGLOBIN OF FORTY PER CENT OR LESS

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Reprint from
SURGERY, GYNECOLOGY AND OBSTETRICS
September, 1913, pages 276-294

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SEVERAL months ago our worthy secretary, Dr. LeRoy Broun, asked me if I would not look up for this meeting our operative results in cases with a low hæmoglobin. We have examined the cases of the gynecological department of the Johns Hopkins Hospital from 1889 to 1912 and have found records of about 170 cases in which the hæmoglobin was 40 per cent. or below. This, however, by no means represents the total number. In the early days the hæmoglobin estimate was not made as a routine procedure, and from time to time since an occasional omission has occurred. The figures are, however, fairly accurate. I have decided on 40 per cent. as a convenient arbitrary percentage. We are all familiar with the fact that many patients with less than 40 per cent. of hæmoglobin pass through an operation very satisfactorily, but in any case in which the percentage is 40 or less the operator naturally has a certain amount of anxiety. In our group are included a few cases which for various reasons were not operated upon.

Dr. Benjamin O. McCleary has been of the greatest assistance to me in obtaining the necessary data and I gladly acknowledge my indebtedness to him.

For the purpose of convenience I shall divide the cases into two main groups:

1. Patients that recovered.
2. Patients that died.

CAUSES OF THE LOW HÆMOGLOBIN IN THE PATIENTS THAT RECOVERED

Uterine myomata were associated with a low hæmoglobin in 42 cases. As is well known, the position of the myoma is responsible for the bleeding. A myoma may reach very large proportions without occasioning any loss of blood provided it does not in any way encroach on the uterine cavity. On the other hand a submucous myoma not over 1 or 2 cm. in diameter may cause alarming hæmorrhage. Accordingly it is the submucous myomata that are responsible for the very low hæmoglobin.

UTERINE MYOMA

Gyn. No.	Per cent.	Gyn. No.	Per cent.	Gyn. No.	Per cent.
6002	24	9638	21	10618	40
7313	38	9678	23	11077	22
7438	19	9707	26	11139	25
7615	39	9738	30	11743	23
7934	40	9786[2]	20	11889[4]	14
8130	28	10172	29	12086	40
8034	33	10287	35	12234	25
8036[3]	15	10291	35	12257[5]	40
9070[2]	35	10376	30	12890	25
8951	35	10455	40	14247	30
9053	35	10502	35	14458	20
9291	22	10573	38	16001	40
9503	10	10597	25	16405	15
9029	23	10605	30	18185	25

[2] No operation. [3] Tubo-ovarian abscess. [4] Infected. [5] Sloughing.

Hyperplasia of the endometrium was the cause of the low hæmoglobin in 23 cases. This condition is a definite pathological entity that as yet has not been accorded the recognition it deserves. The endometrium presents a most characteristic picture. The mucosa is thicker than usual. The surface may be perfectly smooth or there may be little polypoid outgrowths projecting from the surface. Many of the uterine glands are small and circular on cross section; others are larger and still circular; not a few are at least ten times as large as normal and are somewhat irregular. The glands, whether large or small, have a much higher epithelium than normal and many of them are apparently lined with two or three layers of epithelium. The stroma is much more cellular than usual and its cells frequently contain nuclear figures. The veins in the stroma are often much dilated forming sinuses, which at times are partly or completely filled with organizing thrombi.

Given such a condition one can supply a relatively accurate clinical picture of the patient. She is usually between 35 and 45

[1] Read before the American Gynecological Society, Washington, D. C., May 8, 1913.

years of age and her periods are excessive. As a rule, there is no intermenstrual discharge of any kind. Curettage is usually followed by perfectly normal menstrual periods for from three or four months to a year. The excessive bleeding then recurs, to be again relieved by curetting. The hæmorrhages may be permanently relieved after several curettings, but in not a few cases it is in the end necessary to remove the uterus. I drew attention in 1900 to this group of cases in "Cancer of the Uterus" (p. 479) and in "Adenomyoma of the Uterus" (p. 181, Fig. 53). Since then I have seen this condition several times in young girls. Quite recently I saw a girl, 16 years of age, suffering from a profuse and continuous bleeding. A physician who saw the large amount of mucosa removed felt sure that I was curetting away remnants of an afterbirth and only on microscopic examination of the scrapings was he convinced that no pregnancy had existed. Dr. Elizabeth Hurdon has also seen a case of hyperplasia of the endometrium in a girl still in her teens. This is a condition with which we should all be thoroughly familiar. In some of the 23 cases here mentioned the hyperplasia was of a mild grade, in others it was marked.

HYPERPLASIA OF THE ENDOMETRIUM

Gyn. No.	Per cent.	Gyn. No.	Per cent.	Gyn. No.	Per cent
5783	31	10136	35	13883	20
5976	17	10165	35	14050	40
6128	33	10409	38	14503	38
6689	25	10562	35	13883	15
7846	40	10902	14	14698	
8413	25	11049	25	16341	40
9002	40	11750	35	17244	
9340	29	12070	40	18030	35
10097	20	13344	30		

Squamous-cell carcinoma of the cervix was the cause of the low hæmoglobin in 18 of the cases.

SQUAMOUS-CELL CARCINOMA OF THE CERVIX

Gyn. No.	Per cent.	Gyn. No.	Per cent.	Gyn. No.	Per cent.
7454	35	9266	38	16104	39
7564	22	10849	18	16846	
7786	30	11198	33	16889	30
7819	35	13376	40	17609	
7840	38	13545	40	18153	12
7900	30	13943	19	18333	35
9024	33	13986	40		

Pelvic inflammation was apparently the cause of the low hæmoglobin in 13 of the cases. We are all familiar with the frequency with which a pelvic inflammation, especially if one-sided, may simulate a tubal pregnancy and there are probably few of us who have not opened the abdomen confidently expecting to find a tubal pregnancy only to encounter a pus tube or general pelvic adhesions.

PELVIC INFLAMMATION

Gyn. No.	Per cent.	Gyn. No.	Per cent.	Gyn. No.	Per cent.
6615	30	11764	28	16294	38
8146	40	11934	30	16333	20
9139	38	13826	29	16494	40
9509	32	15745	21		
11652	23	16290	35		

Retained placental tissue had brought about a hæmoglobin of 40 per cent. or less in 13 cases. In one of these the loss of blood had been so great that the patient's hæmoglobin was only 15 per cent. on her admission to the hospital.

RETAINED PLACENTAL TISSUE

Gyn. No.	Per cent.	Gyn. No.	Per cent.	Gyn. No.	Per cent
5759	38	9200	37	11893	40
6164	38	9558[1]	35	14801	17
7794	35	9878[1]	30	18073	30
7908	23	10001	15		
8042	30	10148	19		

[1]Endometrium of pregnancy.

Tubal pregnancy. Where the tube is still intact the abdomen may contain no blood, but if the tube rupture or if there be a tubal abortion, the abdomen may be filled with blood, the amount being only limited by the capacity of the patient's abdomen. Consequently the multipara will naturally lose more than the nullipara whose abdominal walls have never been distended by a pregnancy. In 12 of our successful cases the low hæmoglobin was due to a ruptured tubal pregnancy.

TUBAL PREGNANCY WITH A LOW HÆMOGLOBIN

Gyn. No.	Per cent.	Gyn. No.	Per cent.	Gyn. No.	Per cent
6959	40	11815	28	16296	25
7782	30	11830	35	16615	40
9504	37	13211	35	17438	23
10170	40	15226			
10829	39	15245	35		

Adenomyoma of the uterus was the cause of the low hæmoglobin in 7 cases. In this group of cases we have a diffuse myomatous thickening of the uterine wall. This may be limited to the anterior or posterior walls, or form a mantle around the uterine cavity. The uterine mucosa passes down into the crevices in the myomatous tissue and in addi-

tion the uterine walls often contain discrete myomatous nodules. The excessive loss of blood at the periods, the severe pain at the period so often noted, coupled with the fact that there is no intermenstrual discharge, and that the endometrium is normal, taken together give a symptom complex which renders the clinical diagnosis relatively certain.

ADENOMYOMA WITH LOW HÆMOGLOBIN

Gyn. No.	Per cent.	Gyn. No.	Per cent.	Gyn. No.	Per cent.
6631	24	13407	40	16603	40
7859	30	14060	35		
11919	40	16010	40		

Chorio-epithelioma. One of our patients (10094) on admission had a hæmoglobin of 20 per cent. Another (18034) came to the hospital with a hæmoglobin of 40 per cent.

Other causes of a low hæmoglobin. In looking through this list it will be noted that in addition to carcinoma of the body of the uterus, hæmorrhoids and prolapsed rectum, where the loss of blood could account for the low hæmoglobin, there were other causes such as peritoneal carcinosis, amenorrhœa, chronic interstitial nephritis, mitral insufficiency, ovarian and pelvic abscess. In these the low hæmoglobin was due to some factor other than the loss of blood.

	Gyn No.	Per cent.
Abdominal carcinosis	8219	25
Hæmorrhoids	8369	35
Adenocarcinoma of ovary with metastases	8907	40
General peritoneal carcinosis	9312	35
Adenocarcinoma of uterus, left tube and ovary	9570	38
Pregnancy	9940	40
Carcinoma of body of uterus	10838	40
Prolapsed rectum	11325	36
Menorrhagia (no op.)	11347	28
Large ovarian cyst—refused operation	11555	40
Chronic ulcer of cervix	11278, 11562	40
Carcinoma of body of uterus	11762	35
Abscess occupying right side of abdomen after labor	12456	26
Abscess in left broad ligament	13564	37
Ovarian cyst, abscess in right broad ligament	13601	50 (fell to 32%)
Amenorrhœa, infantile pelvic organs, T. B.	14544	30
Tuberculosis of endometrium and appendicitis	15542	21
Hypertrophy of cervix	15838	30
Indefinite menorrhagia	16264	35
Adenocarcinoma of cervix	17080	28
Amenorrhœa, retroposition, pulmonary tuberculosis	14544, 17322	30
Pelvic melanosarcoma and ascites	17377	40

PERCENTAGE OF HÆMOGLOBIN

In our series of patients that lived, 14 had a hæmoglobin below 20 per cent. The lowest were 10 per cent. (9593), 12 per cent. (18153), 14 per cent. (10902), 14 per cent. (11889), 15 per cent. (10001), 15 per cent. (13883 and 14698), 15 per cent. (16405).

In summing up the hæmoglobin in 152 cases we find approximately the following:—

	No. Cases
Between 40 and 36 per cent., inclusive	49
Between 35 and 31 per cent., inclusive	30
Between 30 and 26 per cent., inclusive	29
Between 25 and 20 per cent., inclusive	30
Below 20 per cent	14
	152

OPERATIONS ON PATIENTS WITH A HÆMOGLOBIN BELOW 30 PER CENT.

Curettage. An ether examination with curettage even with a very low hæmoglobin gives rise to little or no trouble, as is indicated by the following list.

CURETTAGE

Gyn. No.	Per cent.	Gyn. No.	Per cent.	Gyn No.	Per cent.
5976	17	13883, 14698	15	For retained membranes	
10097	20			7908	23
10902	14	15745	21	7908	23
11049	25	For chorio-epithelioma		10001	15
11652	23	10094	20	10148	19
13883	20				

Vaginal removal of a submucous myoma. In seven cases this was successfully accomplished. Where, however, only a portion of the myoma is submucous, the greater part of the tumor being interstitial, and the hæmoglobin index very low, the vaginal operation is out of the question and any operative interference is fraught with great danger, particularly when the myoma is sloughing.

Gyn. No.	Per cent.	Gyn. No.	Per cent.	Gyn. No.	Per cent.
6002	24	9678	23	16405	15
9629	23	11743	23		
9638	21	11889 (partial)	14		

Abdominal operations in the presence of a low hæmoglobin. These consisted in an exploratory laparotomy, conservative operations, removal of the appendages on one or both sides, removal of tubal pregnancies and the drainage of an abdominal abscess in a desperately ill patient. Even with the low hæmoglobin the patients stood the operations well.

	Gyn. No.	Per cent.
Exploratory laparotomy	8219	25
Conservative abdominal operation	16333	20
Removal of tubes and ovaries	6689	25
Removal of tubes	11764	28
Removal of right appendages	17438	23
Removal of tubal pregnancy	11815	28
Removal of tubal pregnancy	16296	25
Opening abdominal abscess following labor (desperate condition)	12456	26

Hysterectomy on patients with a low hæmoglobin. As seen from the accompanying table, vaginal hysterectomy was performed in two cases and abdominal hysterectomy in 17 cases with success, despite the fact that in one case the hæmoglobin was only 19 per cent. and that in several others it was below 25 per cent. The results clearly show that even with a very low hæmoglobin, hysterectomy may be safely undertaken. In such cases, however, the utmost care must be taken to avoid any unnecessary loss of blood and I have also found that in such cases the shorter the time the patient is on the operating table the better.

HYSTERECTOMIES PERFORMED ON PATIENTS WITH HÆMOGLOBIN BELOW 30 PER CENT.

(a) Vaginal hysterectomy:

Gyn. No.	Per cent.
6631	24
7564 Carcinoma of cervix	22

(b) Abdominal hysterectomy:

Gyn. No.	Per cent.	Gyn. No.	Per cent.	Gyn. No.	Per cent.
7438	19	8413		11139	25
8130	28	Curettage	25	12234	25
9291	22	Hysterect.	38	12890	25
9340	29	9786	20	14458	20
9593.10&23(Op.)		10172	29	15542	21
9707	26	11077	22	17080	28
				18185	25

PATIENTS WITH A LOW HÆMOGLOBIN, UNABLE TO UNDERGO AN OPERATION AND WHO DIED IN THE HOSPITAL

I shall here briefly record the history of each of these cases. Cases 8804, 11337 and 14477 indicate very clearly that myomata, if left alone, occasionally are the direct cause of death. Elsewhere [1] I have shown that in over 1 per cent. of our myoma cases sarcoma developed in or was associated with the myomata and that in over 1 per cent. of the myoma cases carcinoma of the cervix was found; and further that in 1.7 per cent. of the myoma cases adenocarcinoma of the body was also present with the myomata. Here we have three cases in which the death was directly due to the hæmorrhage from submucous myomata, the hæmoglobin being 20 per cent., 12 per cent. and 10 per cent. respectively.

In cases 10975 and 18533 the low hæmoglobin coupled with the infection was amply sufficient to cause death. In the two remaining cases the carcinoma with its secondary complications naturally caused a fatal outcome.

A large, sloughing submucous myoma; irrigation and packing of the uterine cavity. Hæmoglobin 20 per cent.; death. Gyn. No. 8804. M. P., white, aged 45. Admitted to the Johns Hopkins Hospital May 30, 1901; died June 1, 1901. For nearly four years the patient had had frequent uterine hæmorrhages and for three weeks prior to admission had passed clots. She had grown progressively weaker and for the last two weeks had had fever. On admission she looked desperately ill; the hæmoglobin was 20 per cent. The abdomen was markedly distended by the myomatous uterus. The uterine discharge was offensive. The cavity was irrigated and a litre of foul clots came away. Death soon followed.

Submucous myoma, hæmoglobin 12 per cent. No operation; death. Gyn. No. 11337. B. H., aged 38, colored, nullipara. Admitted to the Johns Hopkins Hospital June 6, 1904; died June 10, 1904. Her complaint on admission was weakness and uterine hæmorrhage. She had been married ten years. She began bleeding on December 16, 1903 (7 months before admission); each flow was profuse and lasted two weeks up to March, 1904. She had lost so much in strength that she was forced to remain in bed. After March the hæmorrhages had become constant, very severe at times, large clots had been passed and there had been in addition a very foul leucorrhoeal discharge. The bowels had been constipated and she had suffered a great deal from nausea and vomiting. On admission she was fleshy but very anæmic. The abdomen was tender just above the symphysis on both sides and a mass could be made out extending above the symphysis. The cervix was smooth and normal, the os patulous. Occupying the position of the fundus was a mass the size of a cocoa-nut. The patient bled profusely from the prick in her ear made to obtain the blood for the estimation of the hæmoglobin, although the needle was of small size. Adrenalin had little effect. The bleeding was checked by the use of compresses and collodion. The blood obtained showed a hæmoglobin of 12 per cent, red blood corpuscles 1,828,000, white blood corpuscles 8000. On June 8th the patient was markedly nauseated and vomited. The vagina was packed tight with gauze. The patient continued to grow worse, became irrational and restless, and died on June 10, 1904.

[1] Myomata of the Uterus, Kelly and Cullen, pp. 169, 262, 274.

At autopsy, in addition to the myomatous uterus there was double hydrosalpinx and an ovarian cyst, extreme secondary anæmia, fatty degeneration of the heart and other organs, focal necroses in the liver and a healed infarct of the spleen.

Submucous uterine myomata, hæmoglobin 10 to 15 per cent, pulse 160 to 180. No operation. Death from weakness and shock.

Gyn. No. 14477. S. F. B., aged 36, colored. Admitted to the Johns Hopkins Hospital January 6, 1908, died January 7, 1908. This patient was seen at her home on January 6, 1908. She was extremely anæmic. Her hæmoglobin varied from 10 to 15 per cent., her pulse from 160 to 180. She had all the symptoms of internal hæmorrhage, was extremely restless, had marked pallor and was dyspnœic. For some years she had had a very profuse menstrual flow at intervals of from two to three weeks, lasting several days. She would pass a large quantity of clotted blood with a great deal of pain. Her physician at that time advised removal of an abdominal tumor. There had been a partial prolapse of the uterus. She has been confined to bed for some time. When seen at her home she had not voided for 36 hours and her general condition was precarious. The submucous vaginal growth was apparently attached by a pedicle 4 to 5 cm. in diameter. On abdominal examination the bladder was found to be markedly distended and reached almost to the costal margin on the left. This accounted for her inability to void. On the right side could be felt a hard indurated nodular mass, apparently a myomatous uterus movable from side to side, but firmly fixed in the pelvis. On admission to the hospital the condition was so critical that operation was deemed out of the question. The rectal temperature was 94° F. She died at 3 P. M. of the same day. At autopsy a myomatous tumor of the uterus was found. The cervix was dilated to 6 or 8 cm. in diameter. Death was due to extreme weakness and shock.

Puerperal infection developing three weeks after labor. Hæmoglobin 25 per cent. No operation; death. Gyn. No. 10975. B. G., married, aged 20, white. Admitted to the Johns Hopkins Hospital January 6, 1904, died January 8, 1904. This patient entered the hospital with fever, shortness of breath and at the time of her admission she had a hæmoglobin of 25 per cent. She had been married 2 years, had had one child and one miscarriage. Three weeks before she had had a full-term child. For the first day after, she had felt well, but then began to suffer with pain in the abdomen. The bleeding kept up continually. She was curetted 4 days later by her physician, but had a severe chill and fever on the day following. The fever and the chills continued and there was vomiting every day, incontinence of feces, a vaginal discharge and pain in the abdomen. On admission she was exceedingly pale and there was a purulent reddish vaginal discharge. The cervix was soft, the uterus subinvoluted, in anteposition. There was some thickening in the broad ligament and marked tenderness everywhere in the pelvis. Her red blood count was 2,100,000, leucocytes 7200, hæmoglobin 25 per cent. She gradually grew worse and died January 8, at 9:15 P. M.

Thrombosis of the ovarian veins, vegetative endocarditis of tricuspid valve, pericardial effusion, bilateral fibrinous pleurisy, lobar pneumonia. No operation; hæmoglobin 25 per cent; death. Gyn. No. 18533. H. P., colored, aged 40. Admitted to the Johns Hopkins Hospital July 18, 1912, died August 1, 1912. On admission she was irrational and her history had to be obtained from a relative. She had been feeling badly for a month but had worked up to a week of her admission to the hospital. She complained of pain in the lower abdomen and had fever. She had been married 20 years and had had 8 children and one miscarriage. She had always been well up to the present illness, about ten or twelve days before admission. When she entered the hospital she was very drowsy, irritable when aroused, did not answer questions clearly, could not tell her age, but was conscious of the fact that she was in a hospital. She apparently understood questions, but only when they were asked a number of times. The skin was hot and her tongue coated. The breathing was harsh and there were sibilant râles. The heart was slightly enlarged; the pulse rapid. The abdomen was somewhat distended. Its walls were thin. There was considerable voluntary resistance.

On vaginal examination the mucous membranes were found to be pale. There was bulging of the anterior and posterior walls. The os readily admitted the tip of the index finger. The cervix was larger than normal. The fundus could not be made out on account of resistance. The hæmoglobin was 25 per cent.; the leucocytes were 17,400. On the following day the leucocytes were 21,500, red blood corpuscles 3,300,000. On July 20 the patient was gradually becoming worse. Blood cultures showed Staphlococcus aureus.

On July 23d a mass of doughy consistency and tender was found in the right side just in front of the iliac bone.

On July 25th the condition was about the same. The kidneys were acting normally. Red blood cells 1,736,000, whites 20,300, hæmoglobin 25 per cent.

July 30th. The patient refused all food. Nutrient enemata were expelled. The respirations rose to 60 per minute. There was a slight cough with blood-tinged sputum.

July 31st. Consolidation was noted in the lower left lobe. Death occurred at 12.15 P. M.

In this case a Wassermann test was negative. Blood cultures showed staphylococcus aureus. Autopsy revealed thrombosis of the ovarian veins. There was vegetative endocarditis of the tricuspid valves, pericardial effusion, bilateral fibrinous pleurisy, lobar pneumonia, chronic congestion of the liver.

Bilateral ovarian adenocystomata, multiple uterine myomata, carcinoma of the sigmoid, perforation of the

lower bowel, gangrenous peritonitis, hæmoglobin 40 per cent. No operation; death. Gyn. No. 12056. E. C., aged 30, colored. Admitted to the Johns Hopkins Hospital January 25, 1906, died February 8, 1906. This patient had never been pregnant. She was suffering from diarrhœa, having four or five stools a day. She had been passing blood in the stools for a long time, probably a year, but had not suffered from hæmorrhoids. In June, 1905, she had continuous severe abdominal pain, especially in the lower portion; this had gradually become worse. It had borne no relation to menstruation. She had noticed an abdominal swelling about 5 months before admission. The swelling had rapidly increased and night sweats appeared. There had been no leucorrhœal discharge, but loss of weight and strength. She had become very weak and emaciated. On admission the temperature was 102° F., the pulse 120; the red blood corpuscles were 2,720,000, whites 34,400, hæmoglobin 40 per cent.

Her condition gradually grew worse and she died February 8th. At autopsy bilateral ovarian adenocystomata, multiple myomata of the uterus, carcinoma of the sigmoid, perforation of the bowel and a gangrenous peritonitis were found.

Squamous-cell carcinoma of the cervix with extension to the pelvic structures. Metastases to the liver and rectum, double hydro- and pyonephrosis. Hæmoglobin 28 per cent, no operation, death. Gyn. No. 8958. H. B., colored, aged 28. Admitted to the Johns Hopkins Hospital July 31, 1901. The patient gives a history of sudden profuse uterine hæmorrhage in September of the preceding year. She was sewing at the machine at the time, became so weak that she fainted and large clots came away. She has been passing large clots from time to time since then and has undergone some operation at another hospital within the last few months. At the present time she complains of pain in the hip, which radiates up and down the leg, of colicky pains in the abdomen every few minutes and of cramplike pains in the umbilical region. She has a great deal of nausea; even a sip of water will make her vomit. At times she is very hungry, but afraid to eat. She suffers from constipation, increased frequency of micturition and at times difficulty in passing water.

When the patient was admitted she was very weak and considerably emaciated. The inguinal glands were palpable on both sides. There was a foul smelling vaginal discharge, watery in character, and almost the entire vagina was filled with a nodular mass which was fungating; it involved the anterior vaginal wall and extended far out on the lateral walls.

Clinical diagnosis. Squamous-cell carcinoma of the cervix with pelvic involvement. At this time the hæmoglobin was 28 per cent. The patient was in no condition to stand operation. She died on September 3, 1901.

Autopsy. Anatomical diagnosis: Carcinoma of the cervix with metastases in the broad ligament, pelvic, inguinal and abdominal lymph glands, in the labia, the rectum and liver; double hydro-ureter and hydronephrosis. Effusion in the pleural cavities; cystic ovary.

DEATHS FOLLOWING OPERATION ON PATIENTS WITH A LOW HÆMOGLOBIN

We have had 13 patients with a low hæmoglobin that succumbed after operation.

Case		Per cent.	
8024	Abd. hysterectomy for myoma; hæmoglobin	40	Death[1]
10678	Removal of tubal pregnancy; hæmoglobin	15	Death
15314	Removal of tubal pregnancy; hæmoglobin	32	Death
10303	Abd. removal of tubo-ovarian abscess	38	Death
9362	Abd. hysterectomy for squamous-cell carc. of cervix	39	Death
9387	Vag. hyst. for squamous-cell carc. of cervix	35	Death
16132	Explor. abd. op. in advanced squamous-cell carcinoma of cervix	15	Death
18341	Abd. hyst. for squamous-cell carc. of cervix	33	Death
9911	Abd. hyst. for carc. of body of uterus	35	Death
7610	Expl. of abd. Inoperable carc. of ovary	27	Death
10099	Expl. of abd. Inoperable carc. of ovary	35	Death
10306	Abd. removal of pelvic structures for carc. of ovary	38	Death
16098	Abd. hyst. for chorio-epithelioma	35	Death[2]

[1]On 28th day. [2]After several months.

Myoma. In Case 8024 in which an abdominal hystero myomectomy was performed the convalescence, as seen from the history, was normal until the 16th day when intestinal complications developed. We have had numerous abdominal hysterectomies on patients with a hæmoglobin lower than 40 per cent. and had this patient not developed the intestinal complications she would certainly have recovered.

A myomatous uterus, hæmoglobin 40 per cent Hysteromyomectomy, death. Gyn. No. 8024. Path. No. 4255. S. F., aged 45, colored. Admitted to the Johns Hopkins Hospital July 28, 1900, died August 28, 1900. This patient had been married 22 years, had had one child, no miscarriages. For eight weeks she had gradually been losing weight and strength. When she was first taken ill she had had vomiting and could keep nothing on her stomach. She had noted something growing in the lower abdomen for about two years. There had been slight straining at micturition. On admission the patient was poorly nourished. The lower portion of the abdomen was distended by a rounded tumor mass about the size of a six months' pregnancy. At the time of operation the hæmoglobin was 40 per cent.,

but from the history we could gather no indication as to the cause of this low percentage. On August 1, 1900, a complete hysterectomy was done. Convalescence was normal and the patient was up in a wheel chair on the 16th day. Frequent stools began on the 17th day and continued to the 22d day. In spite of appropriate treatment the patient died on the 28th day. She was delirious for several days and had fever for three days before death.

Tubal pregnancy. Although in Case 10678 the hæmoglobin was only 15 per cent, the patient stood the operation fairly well but died on the following day. In Case 15314 at the time of operation the hæmoglobin was 32 per cent. Most patients with such a percentage would be considered a fair risk. The only two cases of extra-uterine pregnancy that I personally have ever lost each had a complicating general peritonitis associated with intestinal obstruction.

Tubal pregnancy, hæmoglobin 15 per cent. Removal of Fallopian tube; death. Gyn. No. 10678. Path. No. 6910. L. McG., aged 25, white. Admitted to the Johns Hopkins Hospital August 23, 1903, died August 25, 1903. This patient was exceedingly ill when brought to the hospital. She had felt perfectly well until a week before admission. Her last menstruation had occurred five weeks previously. She had been bleeding a little every day for two weeks and one week before admission she had been seized with violent cramp-like pain in the right side. Similar attacks had occurred a couple of times during the week. When she came to the hospital she was exceedingly dizzy and very pale. Her hæmoglobin was 15 per cent. Shortly after admission on the same day the right tube was removed.

After operation the temperature was 101° F., pulse 160. The patient was exceedingly pale, and dizzy. Stimulants were employed, but on the following day the pulse became rapid and weak, the temperature rose and at 6 P. M. was 105.5°. The patient became delirious, extremely restless and died at 8.30 P. M., August 25th. Her hæmoglobin at that time was 10 per cent.

Extra-uterine pregnancy with a hæmoglobin of 32 per cent. at operation; death. Gyn. No. 15314. K. W., aged 35, married. Admitted to the Johns Hopkins Hospital November 26, 1908, died December 1, 1908. She gave a history of having had no children for 13 years. She had missed her period for two months when there commenced to be a slight hæmorrhagic discharge. She was suddenly taken with severe abdominal pain; her skin became cold and clammy and she was in a condition of shock. Her physician immediately brought her to the hospital, but at that time operation was entirely out of the question. After appropriate treatment she rallied somewhat but nausea and vomiting persisted. On November 28th the hæmoglobin was 32 per cent. There was much abdominal pain and distention and operation seemed to afford the only hope. When the abdomen was opened an extra-uterine pregnancy on the right side about the size of a two months' fœtus was found. The abdomen was filled with bright red blood. As far as possible this was evacuated. The patient became gradually worse, grew irrational and died at 4 A. M. December 1st.

Tubo-ovarian abscess. The death in Case 10393 was without doubt due to the dissemination of the streptococcus infection that already existed in the tubo-ovarian abscess. The percentage of hæmoglobin was not excessively low and had it not been for the virulence of the streptococcus this patient should have recovered.

Tubo-ovarian abscess, hæmoglobin 38 per cent., death. Gyn. No. 10393. I. S., aged 26, white. Admitted to the Johns Hopkins Hospital April 6, 1903, died April 11, 1903. This patient had been married three years; had had no children and no miscarriages. For a year she had noticed pain in her right side low down along Poupart's ligament and high up in the groin. The pain was of a dull type and came on at different times, was never constant, never severe. The patient was supposed to have had typhoid in August, 1902. She suffered from severe headache, nausea and vomiting and the abdomen became swollen. There was severe pain paroxysmal and sharp. The abdomen was prominent in the mid-line and on the right side. The patient was very ill at that time, but finally recovered. During the winter at various intervals she had vomiting spells bringing away tarry blood, but she had had no vomiting of this character for three months before admission. She had lost a great deal in weight and had had slight pain on micturition. On admission the patient was poorly nourished. The abdomen was scaphoid and was tender everywhere. A vaginal examination was not made at that time on account of the extreme tenderness.

Operation April 18, 1903. A right tubo-ovarian abscess was removed. At the time of operation her hæmoglobin was 38 per cent.; the leucocytes were 6500. After operation she developed a streptococcus peritonitis. She had several attacks of dyspnœa, but no cyanosis, and vomited occasionally. She suddenly grew worse, and died on April 11th.

No complete autopsy could be obtained.

Squamous-cell carcinoma of the cervix. Patients with advanced cancer of the cervix are invariably bad risks even though the hæmoglobin index is high. When it is low the immediate outlook after operation is always gloomy.

Squamous-cell carcinoma of the cervix in a patient with a hæmoglobin of 39 per cent. Abdominal hysterectomy; death. Gyn. No. 9362. I. H., married, white, aged 31. Admitted to the Johns Hopkins Hospital January 25, 1902, complaining of a bloody offensive vaginal discharge, and discomfort in abdomen and back. She had had six children, no miscarriages. The bloody discharge had persisted for a year and a half, was slightly offensive, pale pinkish in color. The condition had gradually grown worse during the last nine months, and she had had bearing down pains. There had been a good deal of swelling in the abdomen for the last two years. The cervix was replaced by a deep excoriation 3 to 4 cm. across, and extending far into the uterine cavity. It encroached very closely on the base of the bladder. The body of the uterus was almost normal in size.

On February 6, 1902, an abdominal hysterectomy was performed. Following operation there was marked gastric and intestinal distention and excessive vaginal bleeding. The patient's hæmoglobin on her admission was 39 per cent., but prior to operation it had risen to 56 per cent. Death occurred on February 9, 1902.

The autopsy showed localized fresh peritoneal adhesions, hæmorrhages into various pelvic structures, acute fibrinous pleurisy, acute diphtheritic and hæmorrhagic colitis.

It will be noted that in this case the patient really had a hæmoglobin of more than 40 per cent. It was below 40 when she entered the hospital, but at the time of operation the percentage was 56.

Squamous-cell carcinoma of the cervix with a hæmoglobin of 35 per cent. Vaginal hysterectomy; death. Gyn. No. 9387. M. E. M., married, aged 46, white. Admitted to the Johns Hopkins Hospital February 5, 1902. This patient complained of an offensive white vaginal discharge which was sometimes blood-tinged. She had had ten children and one miscarriage. A year before admission she had had a milky vaginal discharge small in amount, now and then irritating, but not offensive. This had become greenish in color and streaked with blood. In October she had a hæmorrhage and lost a great deal of blood. At that time she had hæmorrhages every two or three days for two weeks. The cervix was curetted and a diagnosis of squamous-cell carcinoma made (Path. Nos. 5574 and 5627). Vaginal hysterectomy was done on February 26, 1902; the patient died about noon on the following day. After operation the pulse, which was exceedingly weak, became stronger and rose to 144. About 4:30 next morning she complained of difficulty in getting her breath and the respirations were gasping in character, 36 per minute. She died on Feb. 27th.

In this case it may be noted also that the hæmoglobin was 35 per cent when the patient was admitted to the hospital on February 5th, but before operation on February 25th it had increased to 54 per cent. so that the operation itself was not done on a patient with a hæmoglobin under 40 per cent.

Squamous-cell carcinoma of the cervix, hæmoglobin 15 per cent., minor palliative operation; death. Gyn. No. 16132. Path. No. 14305. B. J., colored, aged 32. Admitted to the Johns Hopkins Hospital October 20, 1909, died November 11, 1909. This patient had been married 4 years, and had had two children, no miscarriages. There was a moderate white vaginal discharge. For six months she had had severe abdominal pain and the last three months this had become gradually worse and continuous and she had been having irregular uterine bleeding. She had passed many large clots. The bleeding on admission was very profuse. Urination had been frequent and painful, and the patient had lost a great deal in weight and strength.

On vaginal examination the cervix was found firm and rounded. The anterior lip was hypertrophied, the posterior roughened, and indurated, on each side of the cervix was a mass extending up from the cervix. This was firm and immobile. A diagnosis of myomatous uterus, densely adherent and malignant, was made. This patient had a hæmoglobin of 15 per cent.; leucocytes 34,000. It was clearly recognized that a radical operation could not be performed, but on account of the leucocytosis it was deemed wise to do a posterior vaginal drainage. Drainage was also made through the abdominal walls at numerous points. It was realized that little could be done, particularly on account of the low hæmoglobin and the fact that the patient was suffering from mitral stenosis and insufficiency in addition to the local trouble. After operation the patient steadily grew worse and died on November 11th. Carcinomatous masses were found filling the entire pelvis. These were rigid and immobile and there were extensions to the peritoneal viscera and the omentum contained implantations from the growth.

Path. No. 14305. The diagnosis of the tissue from the cervix was squamous-cell carcinoma.

Squamous-cell carcinoma of the cervix with a hæmoglobin of 33 per cent. Abdominal hysterectomy, death. Gyn. No. 18341. I. G., aged 34, white. Admitted to the Johns Hopkins Hospital April 27, 1912, died May 13, 1912. This patient complained of pain in the hip, but chiefly of vaginal bleeding. She had been married fourteen years and had six children, the eldest 13, the youngest 10, and one miscarriage seven years before admission. Three months before, she commenced to have slight vaginal bleeding, but thought that it was a return of the menstrual flow. This bleeding had been getting worse and accompanied by clots. There would be sudden hæmorrhages which made her very weak. She had lost a great deal of blood. The cervix was hollowed out, irregular and friable and almost 8 or 9 cm. in diameter and the growth had extended laterally into the vaginal fornices. The fundus could not be made out. Hæmoglobin 33 per cent.

On April 29, 1912, abdominal hysterectomy was performed. The patient's condition was satisfactory up to May 7th, when she tried to get out of bed.

Her pulse rose to 140 and her temperature to 102.5°. She was still unruly and now asked for morphine continually and complained of pain in her abdomen. The abdomen was soft and there was no induration. Pelvic examination showed that the drainage tract was partly open. A very hard and irregular nodule could be felt which appeared to be carcinomatous. The patient died suddenly at 4 A. M. on May 13, 1912. From the history there was no definite indication as to the cause of death. No autopsy was accorded.

Carcinoma of the body of the uterus. In Case 9911 the hæmoglobin was 35 per cent. and the growth had extended to the vagina, necessitating the removal of not only the entire uterus, but also of the vagina. Such an operation would tax the patient's endurance to the utmost were her hæmoglobin nearly normal.

Adenocarcinoma of the body of the uterus with a hæmoglobin of 35 per cent. and implantations in the vagina. Hysterectomy; death. Gyn. No. 9911. M. B. G., married, aged 53, white. Admitted to the Johns Hopkins Hospital on September 17, 1902, died October 23, 1902. This patient complained of hæmorrhage from the uterus, of leucorrhœa and of great loss of strength. She had been married 38 years, had had nine children, no miscarriages. She had been perfectly well up to the onset of the bleeding in November, 1901. Previous to this she had had no menstrual flow for five months. After this bleeding the periods had been excessive, coming on at irregular intervals up to the time of admission. She also had had an offensive vaginal discharge which was very irritating, and considerable discomfort in the abdomen. She had become steadily weaker, dizzy and short of breath. On admission she was moderately fat but anæmic. Her hæmoglobin was 35 per cent., leucocytes 7800. Situated just to the left of the urethral orifice was a hard indurated mass. This was excised and the wound closed. All around the urethra there was induration. The cervix was somewhat enlarged, the fundus had a very limited mobility. On dilatation of the cervical canal a large amount of very foul pus escaped. The body of the uterus was curetted, a mass of carcinomatous tissue coming away.

On September 22, 1902, an abdominal hysterectomy was performed. The entire vagina was removed with the uterus. The patient died on the following day. No complete autopsy was allowed, but it was seen that the abdominal incision showed no signs of peritonitis. There was no evidence of healing.

It will be noted that in this case after the dilatation of the cervix and removal of the pus from the uterine cavity a long interval elapsed before the hysterectomy was performed, in order that the danger of general infection might be minimized.[1]

[1]The pathological numbers in this case are 6106, 6112, 6129 and 6148.

Adenocarcinoma of the ovary. Where abdominal carcinosis exists the resistance to infection is always lowered. It will be noted that in Cases 7610 and 10099, when the abdomen was opened it was found impossible to remove the growth and the abdomen was closed. In Case 10306 it was necessary to remove all the pelvic organs. In this case death was in all probability due to peritonitis.

Ovarian carcinoma, hæmoglobin 27 per cent.; exploratory laparotomy; death. Gyn. No. 7610. R. L., colored, aged 47. Admitted to the Johns Hopkins Hospital on March 1, 1900, died March 18, 1900. The patient complained of an abdominal tumor. She had been married 26 years, but had had no children and no miscarriages. Her menses had ceased ten months before admission, and up to that time she had been quite well. Since that time she had had persistent nausea and vomiting increasing in severity, and some shortness of breadth. Prior to the appearance of the tumor she was a much stronger looking woman. On her admission to the hospital she was very pale, emaciated; hæmoglobin 27 per cent. The abdomen was occupied by an immense cystic fluctuating mass giving the abdomen a dome-like and extremely tense appearance. The circumference of the abdomen at the umbilicus was 108 cm. The tumor filled the abdomen so fully that it could not be moved at all. On vaginal examination it was noted that the right labium majus was hypertrophied, the outlet nulliparous. The cervix was small and soft and the uterus could not be outlined.

On March 5, 1900, an exploratory operation was done under Schleich's solution. The abdomen was filled with what appeared to be a solid ovarian carcinoma which was adherent to the abdominal wall. No attempt was made to remove the tumor. The patient gradually grew weaker. Nausea and vomiting persisted, the dyspnœa increased. The temperature was 96.4°. The patient died suddenly on March 18th.

Carcinoma of the ovary, hæmoglobin 35 per cent.; exploratory laparotomy; death. Gyn. No. 10099. D. A. M., aged 35, white. Admitted to the Johns Hopkins Hospital on November 21, 1902, died November 28, 1902. She complains of an abdominal tumor. She has been married 13 years, has had three children and no miscarriages. One year ago she noticed that she was growing weaker and at the same time detected a small lump in the lower abdomen. This was not especially hard or painful. The periods ceased and there has been no flow since then. Prior to this time the periods had been longer than usual and more profuse. There had been a great deal of pain and a dull sensation during the last two days of the flow. The tumor has increased more rapidly in size during the last two or three months. Her appetite has been fair, but she has

TABULATION OF THE PATIENTS ENTERING THE GYNECOLOGICAL DEPARTMENT OF THE JOHNS HOPKINS HOSPITAL WITH A HÆMOGLOBIN OF 40% OR LESS. NEARLY ALL UNDERWENT AN OPERATION OF SOME CHARACTER AND ALL IN THIS GROUP SURVIVED

Gyn. No.	Initials	Color	Age	Date of Admission	Path. No.	Diagnosis	Hæmoglobin on admission	Operation	Hæmoglobin after operation	Date of Discharge
5759	M. J.	W.	32	Dec. 22, 1897	2057	Retained placental tissue	38%	Curettage	46% Jan. 8 53% Jan. 16	Jan. 23, 1898
5783	K. M.	W.	42	Jan. 11, 1898	2079	Polypoid endometrium; slight hyperplasia	31%	Curettage		Transferred to Medical side Jan. 17, 1898
5976	L. Y.	W.	20	Mar. 24, 1898	2270	Slight hyperplasia of endometrium with polypoid formation	17%	Curettage		April 16, 1898
6002	A. G.	W.	34	Apr. 5, 1898	2275	Submucous myoma	24%	Vaginal removal of tumor		April 22, 1898
6128	S. H.	W.	53	May 26, 1898	2389	Polypoid endometrium with slight hyperplasia	33%	Curettage		July 1, 1898
6164	M. T.	W.	32	June 14, 1898	2424	Retained placental tissue	38%	Curettage, repair of perineum, suspension of uterus		Transferred June 28, 1898
6615	E. J.	C.	34	Jan. 3, 1899	2887	Chronic endometritis, pyosalpinx, uterine myomata	30%	Hysteromyomectomy; salpingo-oöphorectomy	27% Feb. 3, 1899 32% Feb. 10, 1899	Feb. 28, 1899
6631	J. H.		54	Jan. 11, 1899	2915	Uncontrollable uterine hæmorrhage. adenomyoma; gland hypertrophy	24%	Vaginal hysterectomy	30% Jan. 24, 1899 44% Feb. 9, 1899	Mar. 5, 1899
6689	F. H.	W.	24	Feb. 7, 1899	2925	Cystic ovaries	25%	Removal of tubes and ovaries. Previous history (No. 5798), curettage; no micro. examination. No. 6043, uterine polypi. Hysterotomy Apr. 27, 1898. Path. No. 2325. Polypoid mucosa with gland dilatation; hyperplasia	32% Feb. 26, 1899 35% Mar. 7, 1899	Mar. 10, 1899
6959	N. S.	W.	27	May 29, 1899	3237	Right tubal pregnancy	40%	Removal of both tubes and ovaries		July 11, 1899
7313	L. H.	W.	45	Oct. 25, 1899	3576	Spindle-cell sarcoma of uterus. Subacute salpingitis	38%	Hysteromyomectomy; salpingo-oöphorectomy (See page 195 Myomata of Uterus. Kelly and Cullen.)		Nov. 29, 1899
7438	A. W.	W.	43	Dec. 13, 1899	3750	Uterine myoma	19%	Hysterosalpingo-oöphorectomy. (Bisection)	20% Dec. 22, 1899 38% Dec. 28, 1899 48% Jan. 6, 1900	Feb. 10, 1900
7454	M. H.	W.	49	Dec. 18, 1899	3691	Squamous-cell carcinoma of cervix	35%	Vaginal hysterectomy		Feb. 7, 1900
7564	M. W.	C.	50	Feb. 7, 1900	3820 3941	Squamous-cell carcinoma of carvix; with uterine myomata	22%	Vaginal hysterectomy	19% 31% Feb. 23 44% Mar. 6 53% Mar. 25	Apr. 28, 1900
7615	A. R.	W.	51	Mar. 3, 1900	3879	Submucous myoma; cervical polyp	39%	Removal of polyp and myoma		Mar. 17, 1900
7782	S. W.	W.	42	Apr. 30, 1900	4045	Ruptured tubal pregnancy	30%	Removal of tube		May 24, 1900
7786	E. W.	W.	54	May 3, 1900	4040	Squamous-cell carcinoma of cervix	30%	Curettage		May 24, 1900
7794	E. H.	W.	35	May 7, 1900	4046	Retained placenta	35%	Removal of adherent placenta		May 17, 1900
7819	S. B.	W.	40	May 15, 1900	4074	Squamous-cell carcinoma of cervix with uterine myomata; pelvic adhesions	35%	Hysterectomy		June 12, 1900

7840	F. N.	W.	44	May 22, 1900	4083	Squamous-cell carcinoma of cervix; uterine myomata	38%	Vaginal hysterectomy; right salpingo-oöphorectomy		June 16, 1900
7846	L. T.	W.	38	May 24, 1900	4094	Excessive uterine bleeding; slight hyperplasia of the endometrium	40%	Curettage		June 2, 1900
7859	A. B.	W.	52	May 29, 1900	4122	Adenomyoma of uterus; hydrosalpinx	30%	Hysteromyomectomy with removal of appendages	50% June 29, 1900	June 30, 1900
7900	E. A.	C.	37	June 12, 1900		Inoperable carcinoma of cervix	30%	Ether examination only		July 3, 1900
7908	K. N.	W.	33	July 16, 1900	4154	Retained membranes	23%	First operation, curettage; second, repair of cervix and anterior and posterior vaginal walls	34% June 30, 1900 47% July 22, 1900	Aug. 18, 1900
7934	A. E. H.		38	June 26, 1900	4169	Uterine myoma	40%	Hysterosalpingo-oöphorectomy	55% July 20, 1900	July 20, 1900
8042	E. R.	C.	33	Aug. 5, 1900	4269	Retained placenta	30%	Curettage		Aug. 19, 1900
8130	R. M. F.	W.	48	Sept. 11, 1900	4360	Submucous uterine myoma; pelvic adhesions	28%	Panhysterectomy	37% Sept. 26, 1900 48% Oct. 21, 1900	Oct. 21, 1900
8146	B. W.	C.	22	Sept. 20, 1900	4350	Chronic endometritis	40%	Curettage		Sept. 30, 1900
8219	E. F. W.			Oct. 11, 1900	4399	Adenocarcinoma of omentum, (origin?)	25%	Exploratory laparotomy		Oct. 25, 1900
8369	J. H.	W.	36	Dec. 5, 1900	4553	Hæmorrhoids	35%	Suspension of uterus; Whitehead operation.		Jan. 5. 1901
8213	H. M.	W.	44	Dec. 29, 1900	4374 4589	Polypoid endometrium; gland hypertrophy	25%	First operation Dec. 31, curettage; second operation, Jan. 10, hysterosalpingo-oöphorectomy	38% Jan. 6, 1901 44% Jan. 23, 1901 52% Feb. 4, 1901	Feb. 4, 1901
8907	M. S.	W.	56	July 6, 1901	5103	Adenocarcinoma of ovary with metastases	40%	Hysterosalpingo-oöphorectomy with removal of portion of omentum		Aug. 13, 1901
8934	L. P.	W.	40	July 20, 1901	5110	Submucous myoma	33%	Panhysteromyomectomy		Aug. 15, 1901
8936	S. A. B.	W.	36	July 22, 1901		Multiple uterine myomata; submucous myoma, menorrhagia, anæmia	15%		25% Oct. 2 45% Oct. 15	July 29, 1901
9070	Readmitted			Sept. 17, 1901			35%	No operation	35% Oct. 30	Oct. 31, 1901
8951	E. M.	W.	48	July 26, 1901	5128	Uterine myoma	35%	Vaginal hysterectomy (bisection)		Sept. 3, 1901
9002	E. B.	W.	22	Aug. 22, 1901	5173	Mild chronic endometritis, slight gland hypertrophy	40%	Curettage		Sept. 6, 1901
9004	M. W.	C.	49	Aug. 22, 1901	5223	Squamous-cell carcinoma of cervix; uterine myoma	33%	Vaginal hysterectomy, right salpingo-oöphorectomy		Oct. 15, 1901
9053	H. W.	W.	43	Sept. 11, 1901	5214	Uterine myoma	35%	Hysterosalpingo-oöphorectomy	37% Sept. 18 44% Oct. 2	Oct. 10, 1901
9139	O. G. C.	W.	26	Oct. 16, 1901		Pelvic inflammation; post-operative fæcal fistula; pulmonary tuberculosis	38%	No operation. (Pyometria evacuated in Suffolk, Va.; later abdominal operation, Norfolk, Va., March, 1900)		Oct. 31, 1901
9200	I. F. D.	W.	23	Nov. 7, 1901	5374 5376	Retained placenta Polypoid endometrium	37%	First operation, curettage; second operation, suspension of uterus, repair of outlet		Dec. 21, 1901
9266	E. C. H.	W.	47	Dec. 9, 1901	5460	Squamous-cell carcinoma of cervix	38%	Curettage		Dec. 30, 1901
9291	U. P.	W.	50	Dec. 24, 1901	5405	Uterine myoma, polypoid endometrium	22%	Panhysterectomy	25% Dec. 29, 1901 30% Jan. 14, 1902	Jan. 15, 1902
9312	F. S.	W.	55	Jan. 5, 1902		General peritoneal carcinosis	35%	Abdominal paracentesis. First, Jan. 9; second, Jan. 13; third, Jan. 17	30% Jan. 8	Jan. 17, 1902
9340	S. L. D.			Jan. 19, 1902	5537	Uterine polyp, moderate gland hyperplasia	29%	Hysterosalpingo-oöphorectomy		Feb. 17, 1902

TABULATION OF THE PATIENTS—*Continued*

Gyn. No.	Initials	Color	Age	Date of Admission	Path. No.	Diagnosis	Hæmoglobin on admission	Operation	Hæmoglobin after Operation	Date of Discharge
9558	C. J.	W.	21	Apr. 11, 1902	5749	Endometrium of pregnancy	35%	Curettage	75% May 26, 1902	June 19, 1902
9569	M. S.	C.	27	Apr. 17, 1902		Chronic pelvic inflammation; chronic interstitial nephritis	32%	No operation		Transferred to medical side
9570	M. H.	W.	48	April 19, 1902	5768	Adenocarcinoma of uterus, left tube and ovary; adenocystoma and carcinoma of right ovary	38%	Complete removal of pelvic structures	73%	May 17, 1902
9593	R. B.	C.	37	April 26, 1902	5839	Submucous myoma	10%	May 19, 1902, hysterosalpingo-oöphorectomy	14% April 28 17% May 9 23% May 16 21% May 23 28% June 1 37% June 11 45% June 27	June 28, 1902
9594	R. B.	W.	28	April 27, 1902	5783	Ruptured tubal pregnancy	37%	Removal of left tube and ovary		May 20, 1902
9629	B. H.	W.	27	May 12, 1902	5823	Uterine myoma	23%	Myomectomy	33% May 19, 1902	June 5, 1902
9638	M. W.		24	May 13, 1902	5824 5905	Submucous myoma	21%	May 15, vaginal myomectomy June 12, hysterosalpingo-oöphorectomy	27% May 23 30% June 1 45% June 11	June 10, 1902
9678	N. D.	W.	34	May 27, 1902	5965	Submucous uterine myoma with marked hyaline degeneration; mitral insufficiency, pericarditis, chronic interstitial nephritis	23%	Myomectomy with evacuation of pelvic abscess on right side	26% 45% Aug. 1	Aug. 31, 1902
9707	A. C.		42	June 9, 1902	5912	Uterine myoma; uterine polyp	26%	Hysteromyomectomy; double salpingo-oöphorectomy	30% July 1, 1902 42% July 14 55% July 20	July 23, 1902
9738	P. T.			June 20, 1902	5939	Uterine myoma; corpus luteum cyst	30%	Hysteromyomectomy, double salpingo-oöphorectomy		Aug. 5, 1902
9786	M. B.	C.	40	July 15, 1902	6065	Submucous myoma, tubo-ovarian abscess, follicular salpingitis	20%	Hysteromyomectomy; double salpingo-oöphorectomy	43% Aug. 26 50% Sept. 7 55% Sept. 12	Sept. 20, 1902
9878	E. D.	W.	29	Sept. 5, 1902	6091	Endometrium of pregnancy with proliferation of epithelium suggesting carcinoma	30%	Curettage		Sept. 22, 1902
9940	S. D.			Oct. 1, 1902		Pregnancy	40%	Ether examination only		Oct. 10, 1902
10001	F. H.	W.	22	Oct. 17, 1902	6167	Retained placenta	15%	Curettage		Oct. 22, 1902
10094	M. S.			Nov. 18, 1902	6280 6345	Chorio-epithelioma, multiple corpora lutea cysts of both ovaries	20%	Curettage; abdominal panhysterectomy	18% Dec. 5 22% Dec. 14 33% Dec. 29 50% Jan. 9 75% Jan. 23	Jan. 28, 1903
10097	F. E. R.		43	Nov. 20, 1902	6293	Menorrhagia, slight hyperplasia of endometrium	20%	Curettage	28% Nov. 28 30% Dec. 8 40% Dec. 16 50% Dec. 29 53% Jan. 8 60% Jan. 16 74% Jan. 23 81% Jan. 30	Jan. 31, 1903

10136	L. W.	W.	26	Dec. 11, 1902	6334 6348	Moderate hyperplasia of endometrium with thrombosis of veins of mucosa, right pyosalpinx	35%	Curettage; right salpingo-oöphorectomy, appendectomy	52% 60%	Dec. 21, 1902 Jan. 9, 1903	Feb. 6, 1903
10148	F. L.	W.	32	Dec. 25, 1902		Retained placenta	19%	Removal of placenta	22% 20% 21% 32% 45%	Jan. 8 Jan. 11 Jan. 16 Jan. 19 Jan. 23	Jan. 23, 1903
10165	L. E.	W.	38	Jan. 4, 1903	6358	Menorrhagia; hyperplasia of endometrium	35%	Hysterectomy	20% 30%	Jan. 20 Feb. 10	Feb. 11, 1903
10170	G. G.	W.	27	Jan. 6, 1903	6359	Tubal pregnancy; endometrium of pregnancy	40%	Curettage; right salpingo-oöphorectomy	30% 37% 45%	Jan. 8 Jan. 10 Jan. 19	Feb. 6, 1903
10172	W. A. B.	C.	41	Jan. 6, 1903	6431	Uterine myoma	29%	Hysteromyomectomy; double salpingo-oöphorectomy	37% 38% 26% 37% 44% 40% 47% 53%	Jan. 13 Jan. 16 Jan. 20 Jan. 28 Feb. 3 Feb. 8 Feb. 23 Feb. 27	Feb. 28, 1903
10287	J. M. M.	W.	46	Feb. 25, 1903	6490	Uterine myoma	35%	Hysteromyomectomy; radical cure of hernia	40%	Mar. 20, 1903	Mar. 21 1903
10291	M. F. N.		45	Feb. 26, 1903	6511	Uterine myoma	35%	Hysteromyomectomy			Mar. 25, 1903
10376	M. S.	W.	45	April 1, 1903	6596	Submucous myoma with hyaline changes (sarcomatous?)	30%	Vaginal myomectomy			April 17, 1903
10409	M. D.		37	April 13, 1903	6627	Relaxed outlet, retroposed uterus, slight hyperplasia of endometrium	38%	Curettage, repair of perineum, suspension of uterus	50%	May 6	May 6, 1903
10455	E. D.		46	April 30, 1903	6670	Submucous uterine myoma	40%	Hysterosalpingo-oöphorectomy; radical cure of hernia			May 23, 1903
10562	E. H.	W.	44	June 18, 1903	6803	Hyperplasia of endometrium with polypoid formation	35%	Abdominal panhysterectomy	45%		July 11, 1903
10573	K. H.	W.	27	June 22, 1903	6821	Cystic uterine myoma	38%	Multiple myomectomy			July 20, 1903
10597	N. B.		42	July 7, 1903		Submucous myoma	25%	Operation refused	35%		July 24, 1903
10605	A. E. M.	W.	38	July 13, 1903	6863	Uterine myoma, chronic pelvic adhesions	30%	Hysterosalpingo-oöphorectomy	52%		Aug. 14, 1903
10618	E. C.			July 18, 1903	6847	Uterine myoma submucous	40%	Vaginal myomectomy			Aug. 5, 1903
10829	C. J.			Oct. 26, 1903	7030	Extra-uterine pregnancy	30%	Removal of tube	68%	Nov. 22, 1903	Nov. 24, 1903
10838	S. S. H			Oct. 29, 1903	7042	Carcinoma, body of uterus	40%	Panhysterectomy	45% 55%	Nov. 6 Nov. 24	Nov. 25, 1903
10849	M. E. M.	W.	40	Nov. 5, 1903		Squamous-cell carcinoma of cervix	18%	Inoperable			Nov. 17, 1903
10902	B. T.	W.	28	Nov 24, 1903	7104	Menorrhagia, slight hyperplasia of endometrium	14%	Curettage	16% 20% 23%	Nov. 27 Dec. 7 Dec. 13	Dec. 13, 1903
11049	D. E.	W.	28	Feb. 6, 1904	7272	Menorrhagia, hyperplasia of endometrium	25%	Curettage			Feb. 24, 1904
11077	L. E.		40	Feb. 23, 1904	7308	Uterine myoma	22%	Hysterosalpingo-oöphorectomy	25% 29% 34% 40% 59% 78% 80%	Mar. 8, 1904 Mar. 11 Mar. 15 Mar. 17 Mar. 25 April 3 April 7	April 7, 1904

TABULATION OF THE PATIENTS—*Continued*

Gyn. No.	Initials	Color	Age	Date of Admission	Path. No.	Diagnosis	Hæmoglobin on Admission	Operation	Hæmoglobin after Operation	Date of Discharge
11139	R. J.	C.	43	Mar. 24, 1904	7393	Uterine myoma, pelvic adhesions	25%	Hysterosalpingo-oöphorectomy	28% Mar. 29 25% April 3 28% April 5 29% April 19 40% April 25	April 30, 1904
11098	M. P.		42	Mar. 5, 1904	7310	Squamous-cell carcinoma of cervix	33%	Curettage		Mar. 23, 1904
11325	L. G.	W.	27	June 1, 1904		Prolapsed rectum	36%	Reduction of prolapsed rectum	60% July 15 75% July 25 90% Aug. 9	Aug. 9, 1904
11347	S. J. P.	W.	43	June 10, 1904		Menorrhagia	28%			Transferred to medical side June 12, 1904
11555	E. P.		53	Sept. 21, 1904		Large ovarian cyst	40%	Operation refused		Sept. 24, 1904
11278 11562	E. W.		31	Sept. 24, 1904	7805 7832	Chronic ulcer of cervix	40%	Curettage of cervix		Oct. 28, 1904
11652	M. C.			Oct. 26, 1904	7871	Acute endometritis	23%	Curettage	15% Nov. 13 18% Nov. 20	Dec. 7, 1904
11743	M. B.	C.	38	Dec. 5, 1904	8024	Submucous myoma	23%	Vaginal myomectomy	42% Dec. 16	Dec. 16, 1904
11750	S. G.		16	Dec. 12, 1904	8031	Glandular hyperplasia, polypoid condition of endometrium	35%	Curettage	40% Dec. 25 48% Jan. 2	Jan. 2, 1905
11762	S. C.		58	Dec. 17, 1904	8030 8040	Carcinoma of body of uterus and cervix	35%	Vaginal removal of portion of uterus	40% Jan. 3	Jan. 3, 1905
11764	C. V. E.		30	Dec. 19, 1904	8054	Acute salpingitis	28%	Double salpingectomy	38%	Jan. 9, 1905
11815	L. G. M.	C.	24	Jan. 17, 1905	8129 8148	Tubal pregnancy, decidual cast of uterus	28%	Right salpingo oöphorectomy	60%	Feb. 14, 1905
11830	R. B.	W.	23	Jan. 22, 1905		Ruptured extra-uterine pregnancy, encapsulated collection of blood in cul-de-sac	35%	Vaginal section, removal of blood clots	55%	Feb. 28, 1905
11889	L. V. G.			Feb. 13, 1905		Infected submucous myoma	14%	Partial vaginal myomectomy	20% Feb. 26 26% Mar. 17 60% April 9	April 11, 1905
11893	C. F.			Feb. 18, 1905		Retained membranes	40%	Curettage		Feb. 27, 1905
11919	G. H. O.			Feb. 27, 1905	8541	Adenomyoma, gland hypertrophy, Graafian follicle cyst, chronic pelvic adhesions	40%	Hysteromyomectomy; double salpingo-oöphorectomy	60% 70% May 17	May 17, 1905
11934	J. H.		37	Mar. 3, 1905		Inflammation of pelvic structures	30%	None	55% Mar. 14	Mar. 23, 1905
11750 12070	S. B. G.			April 23, 1905	8562	Hyperplasia of uterine mucosa with gland dilatation	40%	Curettage with cauterization of uterine cavity	48%	April 28, 1905
12086	A. H.		37	April 29, 1905		Uterine myoma	40%	Hysteromyomectomy, double salpingo-oöphorectomy	35% May 10 40% May 20	June 20, 1905
12234	E. W.		38	July 13, 1905	8844	Subacute inflammation of cervix, uterine myoma, glandular hypertrophy	25%	Hysteromyomectomy, double salpingo-oöphorectomy	45%	Aug. 26, 1905

12257	M. H.		47	July 26, 1905	8861	Sloughing submucous myoma	40%	Vaginal myomectomy	53%	Aug. 16, 1905
12456	A. M.		36	Oct. 20, 1905		Abscess occupying right side of abdomen, developing several weeks after labor	26%	Incision and drainage of abscess, suture of liver		Dec. 21, 1905
12890	E. W.		32	May 1, 1906	9839	Uterine myoma, Graafian follicle cyst and parovarian cyst	25%	Hysteromyomectomy, double salpingo-oöphorectomy	55% June 5, 1906	June 5, 1906
13344	E. N.		43	Oct. 30, 1906	10500	Polypoid endometrium, gland hyperplasia, pelvic adhesions	30%	Hysteromyomectomy, double salpingo-oöphorectomy	34% 1st day 34% 9th day 39% 16th day 41% 23rd day 48% 29th day 60% 38th day	Dec. 14, 1906
13376	E. F.			Nov. 13, 1906		Squamous-cell carcinoma of cervix	40%	Operation refused, although case very favorable		Nov. 18, 1906
13407	J. M.		42	Nov. 28, 1906	10586 10617	Adenomyoma of uterus, submucous myoma, acute endometritis, double pyosalpinx	40%	First operation, vaginal myomectomy; second operation, hysterectomy, double salpingo oöphorectomy	65%	Dec. 22, 1906
13545	K. F.			Jan. 29, 1907	10845	Carcinoma of cervix, uterine myoma, pyosalpinx	40%	Panhysterectomy, double salpingo-oöphorectomy		April 3, 1907
13564	M. B.	W.	38	Feb. 5, 1907		Abscess of left broad ligament	37%	Drainage of abscess	61%	Mar. 2, 1907
13601	L. S.	W.	24	Feb. 17, 1907	10932	Ovarian cyst, abscess of right broad ligament, general peritonitis, albuminuria	50%	Incision and drainage	32% 09% April 28, 1907	Apr. 28, 1907
13826	M. E.			May 9, 1907		Pelvic abscess	29%	Pelvic drainage	50%	May 26, 1907
13883	R. B.	C.	19	May 29, 1907	11385	Glandular hyperplasia	20%	Curettage	55%	June 18, 1907
13943	M. T.		39	June 21, 1907		Inoperable carcinoma of cervix	19%	None		June 25, 1907
13986	M. S.			July 6, 1907	11527	Squamous-cell carcinoma of cervix	40%	Exploratory laparotomy, freeing of adhesions, cervical curettage		July 27, 1907
14059	N. B.			Aug. 3, 1907	11662 11664	Slight hyperplasia of endometrium, cystic degeneration of ovary	40%	Hysterotomy with curettage, left oöphorectomy, cystectomy	35%	Aug. 27, 1907
14060	A. M.		39	Aug. 3, 1907	11837	Uterine myoma, adenomyoma, cystic degeneration of ovary	35%	Panhysterectomy, double salpingo-oöphorectomy	62%	Aug. 26, 1907
14247	S. W.		40	Oct. 4, 1907	11904	Double hydrosalpinx, uterine myoma, chronic endometritis	30%	Hysterectomy, double salpingo-oöphorectomy	36%	Oct. 25, 1907
14458	C. S.		46	Dec. 27, 1907	12167 12181	Uterine myoma, chronic salpingitis, oöphoritis, chronic endometritis	20%	Hysteromyomectomy, salpingo-oöphorectomy		Feb. 4, 1908
14503	M. R.			Jan. 17, 1908	12291	Glandular dilatation, cystic degeneration of ovaries, chronic salpingitis	38%	Hysterectomy, double salpingo-oöphorectomy	42% Feb. 4 46% Feb. 9	Mar. 27, 1908
14544	M. S.		17	Feb. 3, 1908		Amenorrhœa, infantile pelvic organs, chlorosis	30%	Ether examination only	40%	Feb. 24, 1908
13883 14698	R. B.	C.	19	Apr. 15, 1908	12464	Gland hyperplasia	15%	Curettage	37% April 25	May 9, 1908
14801	S. A.		25	May 17, 1908		Bleeding since birth of child, retained membranes	17%	Not treated		Transferred May 9, 1908
13211 15226	S. S.	C.	20	Oct. 23, 1908	13155	Ruptured tubal pregnancy	35%	Resection of left uterine cornu, suture of outer coat of rectum, release of intestinal and omental adhesions		Nov. 8, 1908
15245	C. L. B.	C.	33	Oct. 31, 1908	13160	Ruptured tubal pregnancy	35%	Right salpingectomy		Nov. 18, 1908

TABULATION OF THE PATIENTS—*Continued*

Gyn. No.	Initials	Color	Age	Date of Admission	Path. No.	Diagnosis	Hæmoglobin on admission	Operation	Hæmoglobin after Admission	Date of Discharge
15542	E. J.	C.	23	Feb. 20, 1909	13486 13531	Tuberculosis of endometrium, myoma, normal tubes, cystic ovary, chronic appendicitis	21%	Hysterectomy, double salpingectomy, left oöphorectomy. Appendectomy		Mar. 9, 1909
15745	C. L.		30	May 6, 1909	13785	Chronic endometritis	21%	Curettage		May 15, 1909
15838	P. M.	W.	33	June 19, 1909	13829	Hypertrophy of cervix	30%	Amputation of cervix, (post-operative hæmorrhage from cervix), repair of relaxed vaginal outlet		July 16, 1909
15935	M.A.W.		36	Aug. 3, 1909	14069	Uterine myoma, retained membranes	34%	Curettage		Aug. 15, 1909
16001	L. M.		28	Aug. 30, 1909	14157	Uterine myoma, normal cervix, left hydrosalpinx, pyosalpinx	40%	Hysteromyomectomy, bilateral salpingo-oöphorectomy, release of adhesions		Sept. 17, 1909
16010	L. B.		39	Sept. 3, 1909	14159	Early adenomyoma, bilateral chronic salpingitis	40%	Panhysterectomy, myomectomy, double salpingo-oöphorectomy		Sept. 18, 1909
16104	K. M.	W.	31	Oct. 11, 1909	14222 14363	Squamous-cell carcinoma of cervix, chronic bilateral salpingitis	39%	Panhysterectomy, double salpingo-oöphorectomy, suture of bladder	50% Oct. 24 54%	Nov. 13, 1909
16264	S. H.	C.	24	Dec. 9, 1909	14496	Metrorrhagia, retroposition of uterus, bilateral cystic ovaries, small corpus fibrosum, chronic appendicitis	35%	Resection of corpus fibrosum, puncture of cyst, appendectomy		Dec. 28, 1909
16290	F. F.	C.	30	Dec. 28, 1909	14557	Tubo-ovarian abscess, chronic bilateral salpingitis, oöphoritis	35%	Panhysterectomy, bilateral salpingo-oöphorectomy, release of intestinal adhesions		Jan. 17, 1910
16294	A. S.	W.	29	Dec. 30, 1909	14673	Acute pelvic inflammation	38%	Pelvic section, opening of old drainage tract		Feb. 19, 1910
16296	M. B.	C.		Dec. 30, 1909	14556	Ruptured tubal pregnancy, ovarian cyst	25%	Left salpingectomy, resection of cyst wall		Mar. 5, 1910
10333	G. G.	C.	33	Jan. 17, 1910	14579 14618	Polypoid endometrium, chronic appendicitis	20%	Curettage, exploratory laparotomy, release of adhesions	33%	Feb. 8, 1910
16405	A. B.		36	Feb. 17, 1910	14751	Pedunculated submucous myoma	15%	Vaginal myomectomy		Mar. 6, 1910
16494	M. W.		30	Mar. 21, 1910	14840	Tubo-ovarian abscess, chronic salpingitis, endometritis, cystic left ovary	40%	Hysterectomy, bilateral salpingo-oöphorectomy, appendectomy		April 7, 1910
16603	E. S.	W.	35	April 30, 1910	14989	Adenomyoma (diffuse), uterine polypi, cervicitis, chronic appendicitis	40%	Hysterectomy, myomectomy, right salpingo-oöphorectomy, appendectomy		May 26, 1910
16615	H. H.		30	May 5, 1910	14992	Extra-uterine pregnancy	40%	Right salpingectomy	75%	May 27, 1910
17080	M. W.		47	Oct. 31, 1910	15606 15669 15701	Adenocarcinoma of cervix	28%	First operation cauterization and curettage; second operation, panhysterectomy, double salpingo-oöphorectomy		Dec. 10, 1910
14544 17322	M. S.	W.	46	Feb. 13, 1911	16063	Amenorrhœa, retroposition of uterus, pulmonary tuberculosis, small mediastinal tumor, chronic appendicitis	30%		68%	Transferred to medical side Feb. 18, 1911
16341 17244	F. P.		31	Jan. 13, 1911	15827 15915	Gland hyperplasia, chronic appendicitis	40%	Curettage, suspension of uterus, repair of relaxed vaginal outlet, appendectomy		Feb. 4, 1911

17377	L. C.	C.	36	Mar. 18, 1911	16600	Pelvic melanotic sarcoma with ascites (origin?)	40%	Exploratory laparotomy		Mar. 28, 11
17438	C. W.	C.	24	April 13, 1911		Ruptured extra-uterine pregnancy (right)	25%	Right salpingo-oöphorectomy		April 20, 1911
16846 16880 17609	I. M.	W.	48	June 28, 1911		Squamous-cell carcinoma of cervix	30%	Curettage and cauterization		July 7, 1911
18030	N. F.		27	Dec. 5, 1911	16787	Polypoid endometrium, decidual cells	35%	Curettage		Dec. 11, 1911
18034	N. M.		27	Dec. 6, 1911	16776	Chorio-epithelioma	40%	Curettage	45%	Dec. 15, 1911
18073	R. L. B.		23	Jan. 2, 1912		Retained membranes	30%	Curettage	40%	Jan. 13, 1912
18153	A. W.		40	Feb. 10, 1912		Squamous-cell carcinoma of cervix	12%	Cauterization with actual cautery		Feb. 21, 1912
18185	S. E.	C.	45	Feb. 23, 1912		Uterine myoma	25%	Hysteromyomectomy, double salpingo-oöphorectomy		Mar. 10, 1912
18333	M. B.	C.	39	April 24, 1912		Squamous-cell carcinoma of cervix	35%	Cauterization of cervix		May 5, 1912

grown paler and has lost about 20 pounds. There has been a slight leucorrhœa. Micturition and defecation have been normal. On admission she was rather poorly nourished. The lips and conjunctivæ were very pale. The hæmoglobin (November 21st) was 35 per cent. The abdomen was irregularly distended, and there was marked bulging in the umbilical region. No fluctuation could be elicited in the tumor. It was fairly well fixed and slightly tender. The cervix was small and jammed up against the symphysis by a rounded mass which filled the cul-de-sac and pushed the fundus forward. The tumor was not movable. On November 25th her hæmoglobin had reached 40 per cent., red blood corpuscles 4,180,000, white blood corpuscles 7280.

Operation November 25th. When the abdomen was opened, the tumor was found to be made up of a number of small thick and thin-walled cysts of various sizes. These were intimately adherent to the intestine and in the pelvis and it was impossible to say from which ovary the tumor had originated. The left broad ligament was plastered over the tumor and many large vessels entered the growth. It was impossible to remove it. After operation the patient's general condition was fairly good for the first day, but on the second she gradually grew worse, was apathetic and vomited some yellow fluid with a rather fecal odor and at the same time expelled the enema which was ineffectual. The condition gradually grew worse and she died at 6.30 P. M.

No autopsy was obtainable. In this case the low hæmoglobin was not due to any uterine hæmorrhage, but was probably occasioned by the weakened condition of the patient due to the carcinoma of the ovary and also to the excessive nausea and vomiting from which she had been suffering.

Adenocarcinoma of the ovary, polypoid endometrium, hæmoglobin 38 per cent. Panhysterectomy with removal of the ovarian structures; death. Gyn. No. 10306. C. S., married, aged 50, colored. Admitted to the Johns Hopkins Hospital March 3, 1903, died March 11, 1903. She had been married 35 years and had had seven children, three miscarriages. On admission she complained of pain in the back and lower abdomen and of a tumor. The pain had persisted since the birth of the last child 16 years before. She had had severe uterine hæmorrhages. At first they had come on at the regular periods with severe cramp-like pains in the abdomen. After these had lasted three hours she used to have a severe hæmorrhage, the first symptom of the onset of the flow which later lasted from 14 to 21 days. Since January 3d there had been a continuous hæmorrhage with the passage of large clots. She had lost a great deal of weight. On admission the patient was rather cachetic; hæmoglobin 38 per cent., white blood corpuscles 6500. Through the abdominal walls the pattern of the intestines was easily demonstrable. The patient had a tumor about the size of a fœtal head, globular in form. It was very freely movable and could be brought forward to the abdominal wall. It could be shoved up to the ribs on the left side so

that it took the position of the kidney. The cervix was enlarged, the body of the uterus was uniformly enlarged, pushed over to the left and adherent. Panhysterectomy with removal of the pelvic structures was performed on March 5, 1903. The patient developed nausea and vomited a dark greenish material. She was markedly constipated, restless, and hiccoughed. She gradually grew worse, and died March 11th. No autopsy was allowed.

Chorio-epithelioma. This patient (Case 16098) was kept in the hospital for a considerable period before an operation could be undertaken. The cervix was first thoroughly curetted and at a later date a complete hysterectomy done. The case was a desperate one. The patient lived for several months. At autopsy it was found that the left iliac vein was involved in the malignant growth and that the lungs contained metastases. In addition there was a peritonitis and parenchymatous changes were found in the kidneys.

Chorio-epithelioma. Hæmoglobin 35 per cent.; hysterectomy; death. Gyn. No. 16098. Path. Nos. 14296, 14528. Mrs. A. S., aged 25, white, a Lithuanian. Admitted to the Johns Hopkins Hospital October 9, 1909, died January 2, 1910. Since the birth of her child ten months ago she has never been well. Her menstrual flow has been profuse. The last period occurred one month ago. Between periods there has been a profuse malodorous discharge, at times serous, at other times bloody. Patient has been in bed ten days suffering from pain in the lower abdomen and back; no fever, but very weak.

On examination she is well nourished but anæmic, pulse 128, regular but poor in quality. The abdominal walls are soft and very relaxed. Extending to within two fingers' breadth of the umbilicus is a hard nodular mass which is freely movable. This tumor extends three fingers' breadth to the right of the median line. Its surface is irregular, firm in consistency and sensitive. There are chains of inguinal glands on both sides. The typical carcinomatous odor can be detected in the room.

On pelvic examination it is found that the patient is bleeding profusely and there is a fetid discharge. The cervix is large, the canal cavernous, and readily admits the index finger. There is marked loss of tissue around the cervical canal, but a curious absence of induration so common in carcinoma. The tissues are soft and friable. The finger in the uterine cavity detects a large spongy mass, filling the uterus. There is marked induration of the broad ligament. The lower part of the uterus is fixed. Before operation the hæmoglobin, on October 9th, was 35 per cent., on November 8th, 36 per cent.; on December 27th, 30 per cent.

Operation, October 11th, curettage; October 18th complete abdominal hysterectomy. After operation the general condition was not good. The pulse was rapid and there was abdominal pain. She grew gradually worse and died on January 2, 1910.

Autopsy. At autopsy it was found that the growth extended out to the pelvic wall on both sides, further on the left. The left iliac vein was thrombosed. The growth resembled placental tissue. There were metastases in both lungs ranging from the size of a hazelnut to a tangerine orange. The liver showed fatty changes. The kidneys showed chronic parenchymatous degeneration, the spleen marked amyloid changes. There was emphysema of the lungs, œdema of the left leg, bilateral hydro-ureter, hydronephrosis, acute peritonitis, pleuritis and gastric erosion. In this case, of course, the operation was at best but a palliative procedure.

I have purposely given the briefest outline of our findings, as practically all the essential points are given in the tabulation of cases.

DEDUCTIONS

From the foregoing it is clearly evident that, as a rule, patients with a relatively low hæmoglobin stand pelvic or abdominal operations fairly well. Where carcinoma of the cervix or body of the uterus exists, however, the dangers are materially increased.

In those cases in which the bleeding is limited entirely to the menstrual period it is well to defer operation until a few days before the next period in order to raise the percentage of hæmoglobin to the maximum.

Hyperplasia of the endometrium is a definite disease. The bleeding caused by this condition often leads to a low hæmoglobin index, which can be temporarily checked by curetting. Sometimes after two or three curettings in the course of a year the excessive flow ceases. In other cases it is necessary to remove the body of the uterus.

I cannot emphasize too strongly the necessity of becoming thoroughly familiar with the technique of transfusion. This procedure, as simplified by Bernheim, can be readily employed by any surgeon and should not require more than 20 minutes to half an hour. Transfusion will certainly in the near future become a routine procedure in cases in which operations are required on patients with a very low hæmoglobin. It is hardly necessary to draw attention to the inadvisability of employing any but the mildest cathartics after operation on such patients. I recently heard of a patient who, notwithstanding a hæmoglobin below 20 per cent., weathered a severe abdominal operation. A day or two afterward she was given calomel and salts and promptly died. The after-treatment of these cases requires the greatest care.