right pleural cavity. The bullet in its course passed through stomach, liver, diaphragm and right lung.

The fact that this man's stomach was empty when the injury was received lessened the chances against him. The beginning of hypodermoclysis as soon as the man was brought to hospital; the immediate and rapid repair of injuries received; the introduction of a rubber drainage tube just within the peritoneal cavity to take care of oozing and in an emergency to introduce salt solution and adrenalin chloride within the peritoneal cavity, all were factors perhaps essential to the successful termination of this case.

The shock in these cases must be combated by every available measure and while this is being done the operation should be well under way. It is a mistake to wait till the condition of shock is relieved, for the opportunity to

save life will frequently be missed. Hemorrhage, escaping visceral contents, are factors producing shock as well as the direct effect of trauma in the peritoneum and viscera. The longer, too, that bowel or stomach contents remain in the free peritoneal cavity, the surer infection will follow.

Location and frequently extent of injury can be measured by the character of the vomitus, or the catheterized urine, or by inserting a rectal tube; the show of blood in any of these will demonstrate injury to the parts or part examined. Further than this, the diagnosis of extent of injury should be made after the abdomen has been opened, by thorough, painstaking but rapid search of the viscera.

Rapid work, careful protection of exposed intestines, thorough and painstaking after-treatment, will tide over the chasm some almost hopeless cases.

A REVIEW OF FIFTY-EIGHT CONSECUTIVE OPERATIONS FOR FIBROID TUMORS OF THE UTERUS.*

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The operations analyzed represent all my own individual work. They are consecutive. Every patient presenting herself was operated upon.

The list comprises:

Abdominal hysterectomies	52
Abdominal myomectomies	2
Vaginal myomectomies	3
*Celiotomy without removal of tumor...	1

Total

*Evident sarcomatous degeneration with involvement of mesenteric glands.

AGE.

The youngest was 21; the oldest 54; the average was 36.

I. PRIOR SYMPTOMS

First: *Pelvic pain*—

47 complained of such pain.
6 did not complain.

4 had pain irregularly.
7 no record made.

Unless there were complications, such as pyosalpinx, adhesions, etc., the pain was usually more of a pelvic discomfort than a positive pain. Of the six patients who did not complain of pain—

One had a moderately large subperitoneal and three or four small interstitial tumors; two had protruding polypi only; one had a single large subperitoneal myoma; one had only small interstitial tumors; the remaining history gives no information as to the kind of tumor, but the presumption is in favor of sub-serous growths as there was no irregular or profuse menstruation.

Second: *Hemorrhage*—

No record 8 patients

*Read before Medical Association of Georgia, Rome, Ga., April, 1911.

Irregular and profuse.....	19 patients
Neither irregular nor profuse..	16 patients
Irregular	7 patients
Profuse	8 patients

Of the fifteen women who did not complain of hemorrhage numbers 1, 5, 8, 15, 21, 41, 47, 51, 57 and 58—eleven in all—had either single sub-serous tumors, or one or two more or less large sub-serous tumors and small interstitial growths; the remaining five were uncomplicated cases, though no record was made as to the location of the tumors.

Third: *Leucorrhoea*—

No record	8 patients
Marked leucorrhoea	34 patients
Slight leucorrhoea	4 patients
No leucorrhoea	12 patients

It may be noted that, with two exceptions (Nos. 4 and 37), the twelve women who had not marked leucorrhoea were the same women who had no profuse or irregular hemorrhage; and in case of the two exceptions the hemorrhage is recorded as profuse but not irregular—which may have been normal for these women.

Fourth: *Vesical irritation*—

No record	8 patients
Troublesome irritability	34 patients
No irritability	16 patients

Fifth: *Abortions and miscarriages*—

I have data as to the bearing of children by 40 of these women. Three of the 40 were unmarried and had no children. The remaining 37 have borne a total of 60 children with a total of 51 abortions or miscarriages.* Thirteen of the 37 have never been pregnant to their knowledge, their ages at the time of operation being 34, 26, 40, 34, 44, 35, 45, 26, 24, 36, 30, 45, 36. These thirteen, with two exceptions, had profuse or irregular hemorrhage; and the two exceptions probably had submucous tumors.

*Patient 54 claims 24 miscarriages during last 17 years.

Four have aborted or miscarried oftener than they have gone to term; all four of these had marked metrorrhagia.

Nine have borne two or more children with no miscarriages or with relatively few miscarriages. Of these nine, Nos. 2, 8, 36 and

55 had the tumor appear some years after the last child was born; in case of Nos. 37 and 55 the tumor is recorded as being intraligamentary; No. 39 was 43, No. 20 was 48, No. 55 was 41 and No. 54 was 39 years old, so that presumably they bore the children before the tumor began to grow; in No. 33, aet. 32, no explanation appears.

II. POST-OPERATIVE HISTORY.

First: To the question, "Is the general health satisfactorily improved since the operation?" the answer is:

Yes, for all patients reporting (50).

Second: Is there a hernia in the wound?

Information is at hand respecting all but seven patients. No hernia has developed in any instance.

Third: At any time since the operation has there been a bloody vaginal discharge, and, if so, how many separate times has this happened?

There is no information from nine patients. Of the remaining 45 upon whom hysteromyomectomy was done (omitting myomectomies, etc.) a bloody discharge simulating menstruation is reported—

Few times by	1 patient
Once by	3 patients
Three times by	1 patient
Twice by	3 patients
Four times by	1 patient
None by	36 patients

Fourth: Does the patient suffer from troublesome leucorrhoea which was not present before operation?

No information is at hand from eight patients. From the others a negative answer has been received except as follows: In three patients (Nos. 10, 43 and 55) the leucorrhoea continues about as before operation, and in two (Nos. 42 and 53) leucorrhoea is still present, but less troublesome than before.

Fifth: Does the patient suffer with bladder irritation now?

There is no information respecting seven patients.

Nine complain of slight—none of severe—irritability. With a single exception (No. 27).

these same nine patients complained of vesical symptoms before operation. The remaining women report no trouble.

Sixth:

(1) Does this patient now, or did she for a while, suffer from natural menstrual discomforts monthly without actually menstruating?

(2) Did the nervous and circulatory disturbances of the menopause follow the operation, and, if so,

- a. How soon after the operation did they begin to appear?
- b. How long did they last?
- c. Were they more severe or less severe than the symptoms of the natural menopause?

I have been very anxious to get just as accurate information as possible upon the question of the effect on the general health and on the menstrual function in these operations of leaving both ovaries or one ovary.

I do not discuss here the *advantages* of leaving good ovaries or the advantages of removing bad ovaries. In this series of cases the ovaries have usually been left if their condition seemed to warrant it, though very frequently their condition indicated that removal was wiser, and it was done. Operators of experience almost universally note the presence of pathologic ovaries with uterine fibroids, so that their ablation is perhaps wise in the majority of instances. The younger a woman the more careful I have been to leave one good ovary if possible.

Of course, usually, probably always, unless some *corporal endometrium* be left by a rather high amputation the actual flow of blood at the menstrual period will be stopped promptly, as previously noted in this review, whether the ovaries be left or not; but whether the other menstrual phenomena persist through the natural menstrual life when one or both ovaries are left is affirmed by some and denied by others—presuming the ovary or ovaries to be fairly normal.

The truth appears to be that too little reliable study has been given to the subject in

question, the profession taking largely for granted what is probably true, viz.: that the preservation of good ovaries *does* postpone the disturbances of the menopause—without actually knowing this to be so.

My efforts to get the truth with regard to these questions from the patients here discussed have been somewhat disappointing up to date. It has been the subject of correspondence for more than five months with the result that the information obtained is not of strict scientific value. With doctors, as well as with patients, the post-operative amenorrhoea is too frequently confused, and made synonymous, with the actual menopause. Respecting this series of patients, I can only say at present that the information at hand seems to support the theory that retention of one or both ovaries will avert or postpone the artificial menopause.

Such information as I have received also indicates that when the menopause is brought on artificially by removing both ovaries the symptoms experienced are less severe than with the natural menopause.

Three patients apparently passed the menopause before operation, though two of them still had hemorrhage.

One of the two upon whom abdominal myomectomy was performed (the other having reached the menopause before operation) was 36 years old at the time. Three years afterward—rather early—she began to experience the symptoms common to the climacteric.

Nos. 55, 56, 57, 58 both of whose ovaries were removed, and 53 in whom a part of one ovary was left, were operated on too recently for information to be valuable.

Seventh: Has any serious mental disturbance developed?

No patient has shown such symptoms.

Eighth: Is there pain which may be due to abdominal adhesions?

No information received from eleven.

No. 5, operated on, aet. 36, four years ago, is thought by her husband, who is a physician,

to have chronic appendicitis. She is passing the menopause now. No. 10 complains of vague pains in the left iliac region. Nos. 12, 26 and 43 answered yes to the question; these were all clean cases and no explanation is offered. A number of other patients who I would expect, rather than the above, to have such pain because of adhesions, pelvic peritonitis, etc., evident and troublesome at operation, seem surprisingly clear of it.

Ninth: Is there any unfavorable symptom not present before operation?

There is no report of twelve patients and three were operated on too recently for their answers to be valuable. No. 4 operated on in 1907, has some swelling in his left leg when standing—a relic of a post-operative phlebitis.

One patient died about a year after operation (previously mentioned).

I omit purposely a discussion of technic except to say that experience has led me to be more and more careful to suspend the cervical stump (if left) by the round ligaments or by the gathered peritoneum of the broad ligament—a few patients complaining of bearing down sensations when no specific attention has been given this point.

Bisection has been practiced in some instances—when it seemed to promise better protection to the ureters, or when the tumor could not be delivered without difficulty or danger of inaccessible hemorrhage.

Supravaginal amputation has been the usual procedure, the increased mortality of complete hysterectomy more than outweighing the immunity from cervical cancer acquired by the more radical operation.

In the recent cases the blood pressure has been taken at frequent intervals during anesthesia and operation. Omitting temporary variations, there has been in general a gradual decline during the actual intra-abdominal operation, though in no observed instance had the pressure fallen to the point of shock.

With few exceptions, the gall bladder has been examined by palpation in all these oper-

ations. In no case have gall stones been discovered—a finding not in accord with the common teaching of internists, especially since cholelithiasis is a woman's disease and these fifty-eight women averaged middle age.

COMPLICATIONS.

The following operative complications are noted:

Extensive adhesions	12 cases
Moderate adhesions	17 cases
Large, proliferating ovarian cyst.....	2 cases
Intra-ligamentary fibroids	7 cases
Bilateral intraligamentary cysts.....	1 case
Ureter over tumor	1 case
Dermoid cyst	1 case
Single intra-ligamentary cyst.....	1 case
Sloughing tumor	1 case
Appendix adherent (removed).....	11 cases
Cystic degeneration	1 case
Pregnancy (six weeks)	1 case
Pyosalpinx	2 cases
Umbilical hernia (repaired).....	3 cases
Hyperthyroidism (ex goiter)	1 case
Extreme obesity	2 cases

The mortality in this series of cases is not such as, of itself, to claim favorable comment—four patients having died—though it is perhaps not above that in the ordinary run of complicated and uncomplicated cases. There has been one death in the last thirty-eight operations.

No. 9, aet 44, died 60 hours after operation from paralytic ileus. This patient should not have been operated on in her then condition. At present I would do a preliminary blood transfusion. She had known she had the tumor for fourteen years; during most of this time hemorrhage had been prominent and for the last three years very profuse so that she was practically exsanguinated. Her pulse was 120 almost continuously after she came under my observation and the hemorrhage continued. The tumor was large and sloughing. It was removed quickly, but she did not rally.

No. 14, aet 32, had a number of fibroids matted together with abdominal viscera. The operation was concluded in a comparatively short time with little evidence of shock, but with considerable trauma by reason of the adhesions. The patient died suddenly 30 hours

after operation with characteristic symptoms of pulmonary embolism.

No. 20, aet. 48, was known to have albuminuria before operation. Continued hemorrhage demanded interference, and the patient died with the usual symptoms of urinary suppression.

No. 39, aet. 43, had a tedious operation on account of extensive and dangerous adhesions. Thirty-six hours after operation she was seized suddenly with tachycardia. Hemorrhage was positively excluded by a number of symptoms at the time and by the subsequent history. Her condition remained critical for three or four days. At the end of five days she seemed out of danger. On the eighth day the wound was carefully examined with the view of discovering infection. It was perfectly clean; the same afternoon she coughed, the wound opened and the intestines were somewhat soiled. No pus appeared. The tachycardia appeared again, and the patient died in 30 hours without any characteristic evidence of peritonitis. I did not personally see this patient after the third post-operative day, being away from the city. She had no gross cardiac lesion, though an undiscovered myocarditis may have explained her symptoms.

DISCUSSION.

Dr. S. T. Barnett, Atlanta.—"In making the amputation was the cervix included? I had the misfortune to lose two patients, owing, I believe, to the fact that the blood was impoverished; the hemoglobin percentage was so low that the women had no chance to survive the operation. They should have been given the opportunity to have the hemoglobin percentage brought up."

Dr. J. L. Campbell, Atlanta.—"I consider the care of the ureters as very important in these operations. I have found that giving methylene-blue twenty-four hours prior to the operation will stain the ureters a deep blue; since using this method I have never cut or tied the ureters. This method is valuable in operating on intraligamentous tumors where the tumor is between the broad ligament and the ureter. The patients on whom I have operated have experienced considerable trouble after their periods. I believe in leaving all the ovarian substance possible."

Dr. Floyd W. McRae, Atlanta.—"There is no danger to the ureters if one keeps close to the tumor he is removing. A careful surgeon never cuts or ties a ureter. I am interested in the way Dr. Jones has followed up the histories of his cases. We do not want to know merely whether the patient survived the operation, but we do want to know what the condition is three, four or five years afterwards. I, too, wish to emphasize that we should leave as much of the ovarian tissue as possible."

Dr. E. G. Jones, Atlanta.—"Supravaginal amputation has been the operation of choice; I do not think that the mere fact that a woman has a cervix calls for its removal in these cases. In dealing with the ovaries as much of them should be left as possible; but, as a matter of fact, if one or both ovaries suffer from a surgical lesion and are left it shows bad surgery on the part of the operator."

SURGERY OF THE OVARIES*

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Papers written for medical societies are usually intended to be instructive and to elucidate some real or fancied tangle that the essayist has sought to unravel and thus add to our sum of knowledge. I come before you with a different plea my aim being to stimulate a discussion upon what appears to me to

be very important points in ovarian surgery, in which direction our efforts have not compared as favorably as in the surgery of many of the other organs, nor, indeed, do I grant that the surgeons of the world have been as careful and as conscientious in the handling of some of the conditions that I will mention

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