

## RE-OPERATION

## ANALYSIS OF 125 GYNECOLOGIC CASES

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ONE of the most discouraging factors to those of us who do pelvic surgery is the return of our patient complaining of the same symptoms from which she suffered prior to her operation, and even worse, to complain of additional symptoms that in all probability may be due to this same operation. We may escape this "face-to-face" interview when this same patient consults one of our colleagues and unburdens herself to his more than receptive ear.

Some twenty years ago it was my privilege to present to this society a paper on this subject, in which one hundred cases of the same type were reviewed, and it was with considerable interest and some embarrassment, that I found there had been very little improvement in the end-results of the two series. While great strides have been made in gynecology and surgery in the last twenty years I am inclined to believe, after going over these 225 cases of pelvic operations, that there is still much to learn. Why should there still be poor results following so many such cases? Are there too many women undergoing pelvic operations who should be treated in a more conservative manner? Are surgeons still as unskilled as they were twenty years ago? Is bad judgment used in the selection of the type of operation? Are our methods too radical or too conservative?

Any surgeon who has practiced over ten years will be obliged to acknowledge that in a certain per cent of his cases the results of surgical procedures are far from satisfactory. This percentage is raised or lowered by some personal factors such as (1) badly selected cases, (2) selection of the wrong operation for a certain type of pathologic change, (3) too radical methods, (4) too conservative methods, (5) poor surgical technic. Of course, there are always those unforeseen factors developing postoperatively over which we have no control: (1) Infection, (2) hemorrhage, (3) adhesions, (4) emboli, (5) cardiac failure and many others, too numerous to mention.

There is no question that while the standards have been raised for the specialist, there is still a very large percentage of women being operated upon by men who have had very limited training and experience. While various Boards and the American College of Surgeons are establishing rules to qualify men for surgery there are still many hospitals in this country who will allow any physician who has a degree

were considered radical methods have been discarded for conservative methods. This can be well illustrated in cases of acute salpingitis. In these cases the operation was generally done in a very early stage of the disease while at the present time these patients are treated very conservatively and in many instances an operation is not necessary. Cancer of the cervix has had a considerable reversal in treatment in the last twenty-five years.

The most important factor in patients who have been operated upon and return to us with the same or additional complaints is whether or not postoperative adhesions have developed. There is no question but that the formation of adhesions is a protective measure, but adhesions are often produced by other factors besides protection and can produce extremely severe complications. It is a well known fact that some patients have the unfortunate faculty of producing omental and intestinal adhesions postoperatively much more readily than others; this has never been satisfactorily explained. In the 125 cases herein reported, 106 patients were found to have the omentum adherent directly to or adjacent to the old peritoneal scar. What is the answer to this question? There is only one, and that is trauma, but how can this be avoided? There is one redeeming feature in this condition of the omentum being adherent to the anterior parietal peritoneum in the region of the old scar, and that is that these adhesions seldom, if ever, produce pain. The absence of this symptom has been one of the interesting observations in the study of both series of cases. It is easy enough to say that the patient has postoperative adhesions when she returns following an operation and complains of lower abdominal or pelvic pain or both, but how are we going to prove this to our own satisfaction? By x-ray examination? No. Postoperative adhesions rarely show on x-ray films. I have seen, time after time, a pelvis completely matted by intestinal and omental adhesions and yet nothing could be found by x-ray even when barium meals were given.

In the figures shown, some explanation should be made as to the different classifications of adhesions. In enumerating omental adhesions it was found that a number of patients had the omentum not only adherent to the old scar but to the bladder, uterus, adnexa, and surrounding structures. These were listed under their separate headings and not as separate cases. As stated before, the omentum showed a tendency to become adherent to the parietal peritoneum in the region of the old scar much more often than to any other region in the pelvis. The next structure to which the omentum became adherent was the intestines. Of course, in many instances, the adhesions were attached to many loops of gut, but this might be reversed and we might say

that the intestines were adherent to the omentum. I feel that it is utterly impossible to say which is the case.

As stated before, it is an observation that omental adhesions to the old scar do not cause pain and this may also be said of adhesions between bowel and omentum, or adhesions between omentum and bladder, uterus and adnexa.

While there is nearly always an absence of pain where there are omental adhesions, this cannot be said of adhesions of one or more loops of bowel adherent to the old peritoneal scar, to the bladder, uterus, adnexa or point where the adnexa had been removed at the previous operation or where there are adhesions between loops of intestines, one to another, or kinking of loop or loops of intestine.

The pelvic pain is very characteristic. While it may be persistent, it is generally intermittent, is colicky in character and is often associated with nausea, sometimes vomiting and sometimes constipation. These last two symptoms all depend upon just how much kinking of the bowel is caused by the adhesions. There is no question that postoperative intestinal adhesions cause partial intestinal obstruction to a greater or lesser degree; in some cases, as we all know, complete obstruction develops.

I sincerely feel that when a woman upon whom a previous gynecologic operation has been performed comes complaining of intermittent pelvic pain and lower abdominal pain as above described with no other pelvic pathologic changes present, then a second laparotomy is often justified. In quite a number of the cases here presented this was done, and what has been said was found to have been true.

The question always brought up when we free adhesions is, what is to prevent these adhesions from reforming and even developing into more serious complications than were present when we operated? This very thing has happened in several cases and the poor patient was subjected to a third laparotomy. One patient had four laparotomies, but the overwhelming majority were relieved following the second operation.

How can we prevent adhesions? Amfatin has been used in our clinic and, in some cases, in this series, but as yet has not shown a very positive result. At first it was felt that the manner of closure of the peritoneum might be a factor in the production of adhesions to the peritoneal scar and several methods of closure were tried, but still adhesions formed to and about the suture line. Is it possible that cat-gut may produce a chemical inflammatory reaction and thus cause trauma and the production of adhesions? May not the retractors, large packs, the grasping of the edges of the cut peritoneum by forceps

all add to the trauma? May not the use of certain chemicals used in the sterilization of the skin and carried into the wound be a factor? At least these factors may cause us to pause and think.

In certain cases where re-operation was done, multiple adhesions between omentum, bowel and adnexa were present, so that it would be impossible to place these cases in any one category.

Where intestinal adhesions are present, one is often struck with the question, just why has not this patient had a complete intestinal obstruction? Time after time, one or more loops of gut have been found adherent to the parietal peritoneum, to the sigmoid, to the uterus, bladder, and adnexa, and yet the patient has never had any definite symptoms of complete obstruction. Again, we are all familiar with those cases in which we have operated for a complete obstruction and have found one small band causing a complete bowel obstruction, which, if not released, would have brought the patient to her death.

#### OMENTAL ADHESIONS\*

(found at subsequent operation)

Omentum to Parietal Peritoneum and about Scar.....	106
Omentum to Intestines.....	34
Omentum to Uterus.....	19
Omentum to Bladder.....	12
Omentum to Adnexa (or point where adnexa had been removed).....	17

#### INTESTINAL ADHESIONS

Intestine to Adnexal Region.....	30
Intestine to Uterus.....	17
Intestine to Bladder.....	12
Intestine to Abdominal Wall (to or in region of peritoneal scar).....	29
Intestine to Intestine (one or more loops).....	19
Intestinal Obstruction (complete).....	2

#### FURTHER VARIETY OF ADHESIONS

Bladder to Uterus.....	11
Sigmoidal Adhesions .....	21

\*NOTE: It must be borne in mind that in many of the patients operated upon, from one to many of the above combinations were present, also other pelvic pathologic lesions.

There were thirteen patients in whom no postoperative adhesions were present who were operated upon for symptoms pointing to other pathologic conditions. It must also be remembered that a great many of these patients were operated upon for pelvic pathologic lesions and the adhesions were found and were only a minor factor in the symptomatology.

In obtaining from the patients a history of a previous operation it was surprising how little some of these patients knew regarding the character of their operation or what, if any, tissue or tissues had been

removed; some even did not remember the name of the surgeon who had operated upon them. Fortunately, this number was in the minority and in compiling these statistics it was possible to obtain a fair history which was generally substantiated when the abdomen was opened the second time.

Following is a list of the findings at the time of the first operation, as far as the amount of information could be obtained from the patients. Of course, it was a simple matter to obtain a fairly definite history of those patients upon whom we had operated ourselves, or those who had been previously operated upon in local hospitals.

1. Salpingitis (acute or chronic).....	74
2. Oöphoritis or "cystic ovaries".....	67
3. Uterine displacement.....	17
4. Chronic metritis and endometrial hyperplasia.....	16
5. Appendicitis (acute and chronic).....	54
6. Uterine myomata .....	14
7. Ectopic pregnancy.....	9
8. Ovarian cyst .....	7
9. Pelvic abscess .....	8
10. Cesarean section.....	2

In reviewing the above figures it must be borne in mind that one patient in numerous instances had several of the conditions and that this somewhat confuses the figures.

It was easier to compile the figures under what was found at the first operation than to compile figures as to the character of the first operation. As stated before, it was an easy matter when we had performed this operation ourselves or where it had been done in a local hospital.

#### CHARACTER OF FIRST OPERATION

1. Salpingectomy—Unilateral .....	41
Bilateral .....	33
2. Oöphorectomy—Unilateral .....	49
Bilateral .....	18
3. Appendectomy—With drainage .....	10
Without drainage.....	44
4. Hysterectomy .....	19
5. Various operations for retrodisplacement.....	17
6. Cesarean section.....	2
7. Myomectomy .....	11

There was a variety of other findings but they are scattered and are of little value for the information pertaining directly to this subject.

#### FINDINGS AT SUBSEQUENT OPERATION

It is a rather shocking fact that out of 125 patients operated upon for the second time only thirteen showed no evidence of so-called

postoperative adhesions. The second highest percentage was in those cases where cystic degeneration of the ovaries had taken place due to the fact that too conservative methods had been used in the first operation; for instance, resection of a chronically infected ovary, the degenerative changes taking place in ovaries that were left behind following a hysterectomy or not removed when badly infected and in which "pus tubes" had been removed. It has been found that, time after time, where tubes have been removed, the remaining ovaries very shortly afterwards began to show evidence of degeneracy. This is due, I am sure, to the fact that when the tube or tubes are removed the blood supply of the ovary or ovaries is markedly affected. It is also true that where one or more adnexa have been removed there is bound to be a raw surface present and in a number of cases it was found that either a portion of the omentum or a loop of gut had become adherent to this point. It is a rather interesting observation that in those patients re-operated upon, who had had a previous supravaginal hysterectomy and a bilateral salpingoöphorectomy, there were very few adhesions in the pelvis; there would be adhesions to the parietal peritoneum, both intestinal and omental, but very few, if any, in the pelvis. If there were omentum adhesions, little or no symptoms were present, but if a loop of intestine had become adherent to the place where the tube or ovary or both had been removed, then the patient complained bitterly of severe pelvic pain.

It is felt that, after a careful study of these 125 cases and the 100 cases previously reported, even with the most careful surgery in the hands of the most skilled operator, postoperative adhesions will form. It is also felt, however, that we all should use greater care in the "toilet of the peritoneum" and that all tissue we handle should be manipulated with the greatest of care so as to minimize the trauma. The use of retractors, packings, and gauze sponges and what is very important, the position of the patient upon the operating table, should be carefully checked. There is no question but that the best of pelvic surgery can be performed only when there is good exposure and the patient is in a true Trendelenburg position.

#### FINDINGS AT SUBSEQUENT OPERATION

(Not including postoperative adhesions)

1. Postoperative incisional hernia.....	5
2. Postoperative wound hemorrhage.....	3
3. Chronic salpingitis	
(Unilateral and bilateral).....	44
(Pyosalpinx and hydrosalpinx)	
4. Chronic oöphoritis ("cystic ovarie").....	78

5. Uterine myomata .....	26
6. Carcinoma of uterine body.....	1
7. Carcinoma in remaining cervical stump.....	3
8. Chronic metritis (and allied pathology).....	42
9. Chronic appendicitis.....	22
10. Ectopic in remaining tube.....	3
11. Carcinoma of ovary.....	3
12. Uterine retrodisplacement .....	16
13. Chronic cervicitis in remaining cervical stump.....	6

1. *Incisional Hernia*.—A number of factors are responsible for this condition, among the most important being excessive adipose tissue, quick absorption of the cat-gut sutures used in the closure of the abdominal wound, skin and fat infection, hasty and improper closure of the wound.

2. *Secondary Wound Hemorrhage*.—This complication occurred in three cases and all within forty-eight hours following the laparotomy. Two were in patients who had had a previous laparotomy and the third in a woman with an unusually fat abdominal wall. It is felt that in those patients who have been operated upon previously it is very important that the old skin scar be excised, especially if it is thin, wide, and inclined to show evidence of keloid formation. The two cases of postoperative wound bleeding were ones in which the incision had been made through the old laparotomy scar and the hemorrhage came from the edges of this previous scar. It is therefore advisable to excise this scar. Where such a hemorrhage does take place, conservative methods have proven useless and it is found that the best treatment is to open up the abdominal wound immediately down to the fascia and close it with firm stay and mattress sutures. In this series there were no postoperative intra-abdominal hemorrhages.

3. *Chronic Salpingitis* (forty-four cases).—This list consisted of cases in which one tube had been removed at the previous operation and the remaining tube was infected at the time or became infected shortly thereafter. In three cases where one tube had been removed for an ectopic pregnancy, an ectopic developed in the remaining tube, necessitating the removal of the remaining tube.

4. *Chronic Oöphoritis* (seventy-eight cases).—It is felt that the removal or non-removal of a so-called "cystic ovary" calls for mature judgment and it is the opinion of the writer that one of the most serious charges placed against certain men who operate (I would dislike to call them surgeons) is the fact that upon the slightest provocation they remove an ovary because it is "cystic," when it is merely an ovary that is showing normal physiologic changes either premenstrual or

postmenstrual. In fact, the ovary has been removed when it has shown changes due to an existing pregnancy.

The practice of puncturing a cyst on an ovary with a needle is to be condemned as it does no good and may be the cause of adhesions forming between the ovary and a loop of gut or omentum. The removal of an ovary does not, as a rule, disturb the function of a tube, but the removal of a tube always disturbs the ovarian function. Of course, if an ovary is improperly removed it may cause a kinking of the tube and this has been the cause of a later tubal pregnancy.

5. *Uterine Myomata* (twenty-six cases).—A considerable number of cases in which uterine myomata were found at the subsequent operation were patients who had had a previous myomectomy performed, but of course there were some fibroids that were entirely independent of any previous procedure. In two cases in which supravaginal hysterectomies had been performed a myoma 4 x 4 cm. and 6 x 4 cm. was found to have developed in the remaining cervical stump. In both of these cases it was necessary to remove the entire cervix.

6 and 7. *Carcinoma of Uterine Body*.—Only one case is listed here, that of a patient who a number of years before had had a unilateral salpingo-oophorectomy, which was in no way connected with the malignancy. Three cases of carcinoma in the remaining cervical stump are in this list. This brings up the old, old question of total versus subtotal hysterectomy and cannot be considered in this paper.

8. *Chronic Metritis* (forty-two cases).—This term is used here in a very broad way and covers those cases of endometriosis, chronic subinvolution, endometrial hyperplasia, in fact, all of those non-malignant conditions found under this heading. Just how closely malignancy of the uterus, endometriosis and endometrial hyperplasia are related is not known, but it may some day be satisfactorily explained.

9. *Chronic Appendicitis* (twenty-two cases).—In this list it is impossible to say how many of these patients had a chronic appendicitis at the time of the first operation and how many did not. One is led to believe that it may be best when the abdomen is open, taking everything into consideration, to remove the appendix at this time, whether there is a pathologic lesion present or not. There is no question but that an acute appendix with pus formation, in a woman, will affect the adnexa in most cases, and in this list there is no question but that pelvic adhesions were found in women who had had a pus appendix and were drained.

12. *Uterine Displacement* (sixteen cases).—Sixteen patients were found to have very marked retrodisplacements causing symptoms directly traceable to the displacement. It is my opinion that very few



patients with retroversion alone should be operated upon. It is quite a different matter when we have a woman with a retroversion or retroflexion and, added to this, descensus or even the so-called partial prolapse. Personally, the writer wishes heartily to condemn the Webster-Baldy operation as it seldom relieves the retrodisplacement and never corrects the descensus, yet surgeon after surgeon persists in using this procedure. It has been my opinion, based on six cases, that this operation should be entirely discarded. In these six cases in which a Webster-Baldy had been done it was found that upon opening the abdomen all of these women had a descensus and were not relieved of their uterine symptoms. In all probability the Webster-Baldy operation had been done because the women had a backache (probably due to a sacro-iliac), and it so happened that at the time of the examination she had a retroverted uterus with the result that the descensus was not relieved. In two cases where this operation had been performed the uterus was turned completely over due to the improper technic used. In one case the inexcusable blunder had been perpetrated because the operator at the first operation had used the tubes instead of the round ligaments to perform a Gilliam operation.

13. *Chronic Cervicitis* (six cases).—This again brings up the question of total versus subtotal hysterectomy which I must "side-step" at this time. There is no question, however, but that more attention must be paid to the cervix when a hysterectomy is considered and that if the cervix is not removed with the uterus it must be either "coned out" or cauterized in some manner. As the tables will show there were three cases of cancer developing in the remaining stump and at least six cases (probably many more) of chronic cervicitis.

#### NATURE OF SUBSEQUENT OPERATIONS

1. Oöphorectomy—Unilateral .....	57
Bilateral .....	21
2. Salpingectomy—Unilateral .....	30
Bilateral .....	14
3. Freeing adhesions (all types).....	92
4. Operation for correction of retrodisplacement.....	13
5. Hysterectomy (all conditions of uterine pathologic changes).....	68
6. Appendectomy .....	22
7. Ovarian cysts.....	9
8. Hernial repair.....	5
9. Re-operation for incisional hemorrhage.....	3

1. *Oöphorectomy* (seventy-eight cases—unilateral and bilateral).—This subject was touched upon under another heading and the number should be analyzed. While it seems like a large number it includes those cases in which the ovary was removed for any justifiable reason.

The great majority of these cases were those in which too conservative measures had been used in the previous operation. In those cases in which a hysterectomy had been performed at the second operation it was thought advisable to remove the ovaries. It is felt that while some patients develop postoperative menopausal symptoms following oöphorectomy, much more severe symptoms may result in cases where a chronically infected ovary or ovaries are left behind.

2. *Salpingectomy* (forty-four cases—unilateral and bilateral).—Again the question of too conservative methods is brought up. In a great majority of cases a chronically infected ovary had been left behind following a unilateral salpingo-oöphorectomy. In five cases it was found that the tube or tubes had been removed from 1 to 3 cm. from the uterus, leaving a stump that in three cases contained pus. It is the writer's opinion that in performing a salpingectomy a V-shaped wedge should be removed from the horn of the uterus when the tube is excised.

3. *Freeing Adhesions* (ninety-two cases out of 125).—While this very important subject has been touched upon innumerable times (in fact the entire paper was written around this one subject of postoperative adhesions), I feel that the question is far from settled. These facts are known, however, and there is no question that they do influence their formation: operating in acute or fairly acute cases of pelvic infection, roughness in the handling of tissue, improper exposure, improper position of the patient on the table, improper use or non-use of "pack-off" sponges. As stated before, the fact must be borne in mind that some patients develop adhesions much more readily than others.

4. *Hysterectomy* (sixty-eight cases).—In many cases it was surprising to find that in a certain number where the tubes and ovaries had been removed at a previous operation a chronically infected uterus had been left behind, or in cases where the previous operator had tried to be very conservative, in order to prevent surgical menopause, he had left one ovary and a large soft and boggy uterus, thus causing the patient to have marked menstrual disturbances such as menorrhagia and metrorrhagia. Myomectomy in our experience has been rather discouraging; while in young women conservative methods may be used, the fact remains that generally those women upon whom a myomectomy has been performed often later will have to have a hysterectomy. I wish here to condemn the practice of the performance of hysterectomy where there is a pregnancy present. I have seen numerous patients with a fibroid in the pregnant uterus subjected to a hysterectomy when if conservative methods had been used, the woman could

have been allowed to go to term. A cesarean section could then be performed followed by hysterectomy, resulting in the birth of a living baby. Attention is also called to the carelessness in which the diagnosis of uterine fibroid is made and how often a pregnancy is present and no tumor. While it seems rather superfluous to mention this at a time when we have fairly reliable tests for pregnancy, it is surprising, not to say shocking, to check on the hospital records and find that this grave mistake is made several times a year by physicians who should have known better. The question of endometrial hyperplasia is one in which we have considerable to learn and one which we are treating, I am afraid, too conservatively. It has been our experience that in a few cases conservative methods are successful, but in the majority of cases a hysterectomy was eventually resorted to. Who can say how close this condition is related to carcinoma? It is felt that entirely too little attention is being paid to the cervical stump in those cases where a supravaginal hysterectomy has been performed. The findings of three cases of carcinoma in the remaining stump is entirely too high a percentage, but is it any higher than the general mortality of a total hysterectomy in the hands of some operators? Again we come to the question of total versus subtotal hysterectomy.

6. *Appendectomy.*—In twenty-two cases the appendix was removed at the subsequent operation. It is impossible to say whether this condition was present at the time of the first operation or developed in the interim between the first and second operation.

Unquestionably more study and care should be exercised by surgeons in regard to symptoms arising in the right lower quadrant in women; the close relationship between the right ovary and the appendix often causes very confusing symptoms. Also attention is called at this time to the many patients who are operated upon during pregnancy for so-called appendicitis when the majority of times the trouble is caused by either a condition arising in the right kidney or right ureter. On one of my services twenty-five pregnant women have been referred to the surgical service with the diagnosis of appendicitis, six have been operated upon, and out of all of the twenty-five only two had an active inflammatory condition present. Several of these cases are included among the women requiring secondary operations. Suppurative appendicitis is a most serious matter in women and it produces marked changes in the pelvis, especially in the right adnexal region. For this reason diagnosis of an acute appendicitis should be made early and an early operation performed. It is felt that this is one condition in which conservative methods should not be considered.

7. *Ovarian Cysts.*—In nine cases ovarian cysts developed after

the first operation but it is impossible to say whether they originated from ovaries that should have been removed at the first operation. Of course, no one can possibly make so early a diagnosis.

To express my conclusions without taking up each separate subject is out of the question in this short time, but in summing up each heading it has been the object of the writer to express his personal conclusions upon each subject. It is hoped that a not too dogmatic and personal attitude has been expressed. These are not collected cases or cases picked from the literature, but cases seen and operated upon by the writer. In some cases, as stated, it has been my painful duty to operate two and three times. It takes considerable courage for any individual to be subjected to a major surgical procedure but in the great majority of cases there is one symptom that stands out above all others and that is *pain*. This, above all others, will cause any one of us to submit to an operation with the hope of being relieved.

#### DISCUSSION

DR. LEWIS F. SMEAD, TOLEDO, OHIO.—I have enjoyed Dr. Dorsett's interesting paper very much indeed.

One of the hardest things a surgeon has to do is to operate upon a patient a second time when results have not been satisfactory. There seems to be a peculiar disinclination to do so. We all, of course, have unsatisfactory results in gynecologic surgery. Pain and soreness in the abdomen, large cystic ovaries, dysmenorrhea and uterine bleeding, have given us many headaches. As Dr. Dorsett has said, the main thing is prevention by the careful selection of cases, the choice of the proper time for operation, the most gentle handling of tissue, the careful freeing of adhesions, striving not to produce any more raw surface than is necessary and thorough hemostasis before closing the abdomen. I am convinced that by the rough handling of intestines in the breaking up of adhesions along with poor hemostasis, we actually bring about a mild degree of peritonitis which may account for the extensive adhesions which we sometimes find at re-operation.

There is one thing that has impressed me repeatedly, and that is the rather careless and rough way in which the appendix is removed incidental to pelvic surgery. Most of these appendices will not give any trouble if left in the abdomen. Certainly, if the appendix is removed and adhesions form, which later result in obstruction of the bowel, we have done our patient no good. Several years ago I removed an appendix for acute appendicitis. A year later the patient returned with an acute obstruction of the ileum. When the abdomen was opened there was only one adhesion in the whole abdomen and that was between the ileum and the place where the ligature had been placed on the mesentery of the appendix. This area had not been entirely covered by peritoneum. Since then I have been ligating the mesentery with smaller ligatures, inverting the stump carefully and covering all raw surface. If one is not willing to remove the appendix carefully and leave as few adhesions as possible, it would be much safer to leave the appendix in the abdomen.

Endometriosis is frequently the cause for re-operation. The repeated attacks of pain, associated with the leakage of brown chocolate material from the cysts, produces many adhesions. In older patients, where we can remove the ovaries, this condition can be most satisfactorily taken care of, but in the younger individuals, where we must be conservative, the pathologic condition may return and re-operation be necessary. I followed one case for nine years after removing a chocolate cyst. She had many attacks of abdominal pain and soreness and finally when she was forty-five years of age, I took out the other ovary, containing a large chocolate cyst, with a good permanent result.

It is common practice in infected gynecologic cases to close the peritoneum, muscle and fascia with a running suture of chromic catgut. Such a suture, even if put in loosely, in a few days will be tight and cause sloughing of tissue. Moreover, such a closure is water tight and seals any potential infection within the incision and is often the basis for wound suppuration and for a subsequent hernia. If such potentially infected wounds are closed with through-and-through interrupted sutures of rustless steel wire, such as Dr. Babcock has suggested, it is surprising that almost 100 per cent of these wounds will heal without suppuration. Occasionally one of these wire sutures will cause a fistula and need to be removed, but otherwise it will not cause any trouble. In infected pelvic cases and in bowel resection cases, it will be found to be very valuable and will often prevent re-operation for hernia.

DR. WILLIAM H. VOGT, ST. LOUIS, MO.—I appreciate the opportunity of discussing Dr. Dorsett's paper, all the more since I am a new member of this Association.

Dr. Dorsett has reported a large number of re-operated cases, a much larger number than many of us have seen I am sure, certainly many more than I have seen—125 in this report and a total of 225 cases in all. And of course he speaks of this with authority far greater than I could. Therefore, I can only stress and reiterate a few of the things that he brought out. That poor results are sometimes obtained in gynecological or any other type of operations we all know, even with the greatest of care. We, however, are constantly striving to improve our technic and to forego the things that we believe might be responsible for these poor results I think one must go back, in order to prevent trouble in the abdomen and the pelvis, to the preparation of the patient first of all; this includes the pre-operative preparation and the preparation of the patient for anesthesia. Everything that is done to shorten the time of anesthesia and the time of operation will be helpful to the patient. A longer exposure of the abdominal cavity to the external air is certainly a factor, in my estimation, in producing infections, and infections I believe are the one great problem with which we have to contend and the factor above all others that is probably responsible for the need of re-opening the abdomen.

Gentle handling of the tissues I do feel has not been sufficiently impressed upon the younger surgeon, and the older surgeon forgets very frequently that the tissues do need gentle handling. I believe it would be a very wonderful thing if we all trained ourselves to do more operations under local anesthesia. By that means we come to realize more and more the need of a gentle handling of tissues. Just because a patient is asleep under a deep anesthesia is no evidence that we are not hurting that patient and I believe for that reason we should practice local anesthesia, more for the purpose of training ourselves

in the gentle handling of these tissues. I am convinced that hemorrhage and the rough handling and the great amount of handling of the intestines which are responsible for many cases of shock on the table are likewise responsible for poor results following operations.

The improper or incomplete sealing of hemorrhage is, I think, another factor in producing postoperative adhesions. The use of hot sponges is certainly a factor. We frequently see sponges handled to the operator so hot that the nurses can hardly hold them in their gloved hands, and think of what that does to the delicate peritoneum. The rough sponging that one sees so frequently not only by the inexperienced, but by the experienced operator, is certainly a factor in producing adhesions. If we could follow out more closely the term that the Germans use, "tupfen," using a gentle tapping of the parts, I think we would avoid many adhesions.

Dr. Dorsett spoke of the conservatism on the one side and radicalism on the other in certain cases as being responsible for re-opening the abdomen. That sometimes is a very difficult thing to decide, just how much to do and how much not to do. We, of course, do not want to take out both ovaries in a young woman and we sometimes try to save one that looks a little bad, hoping the patient may avoid any disagreeable symptoms of menopause. In that way we sometimes subject those patients to a second operation, and I believe we are not doing that patient as much harm by leaving that suspicious ovary in as we would if we produced an artificial menopause.

The paper has much meat in it to discuss, but the time is short so I shall conclude my remarks by complimenting Dr. Dorsett on the large number of cases that he has been able to observe, and secondly on his candid acknowledgment of having to re-operate in a number of his own operative cases.

I wish at this time also to express to the officers and to the Fellows of this Association my grateful appreciation for electing me to the membership of this organization. I appreciate it highly and I know that I will be most happy in the pleasant association and good fellowship of the members.

DR. ADAM P. LEIGHTON, PORTLAND, MAINE.—In the consideration of the etiologic factors which enter into the necessity for re-operation, I would like to tell you of an unfortunate incident which was mine, or truthfully I may say it was a fortunate incident, in a way. Five years ago I operated upon a spinster, a member of one of our well known Portland families. She was a thin, scrawny, sick woman. I removed a large ovarian cyst, and was pleased with the results. In a few days after operation she began to have severe, excruciating pain in the mid-abdomen, around the umbilicus, and upon examination there was more or less rigidity. The bowels began to bother her with obstipation and about the seventh or eighth day a mass was discovered in the abdomen. I wondered what I had left behind! We searched the operating room very carefully and I knew the count was correct. The mass could be palpated easily and was rapidly growing, being about the size of a grapefruit on the tenth day. I explained to the parents of the patient that there was something wrong and that I would have to re-open the abdomen. I explained the physiology that possibly entered into it and that there might be a twisted loop of intestine with adhesions. The mass at operation was the size of a grapefruit and looked very much like a cabbage. The adhesions of bowels, mesentery and omentum were separated, and in the center of the mass was found a piece of curved,

crenate-shaped glass which had come from the suture tube. I wonder how often very minute pieces of glass get attached to sutures or into gauze? Believe me, from now on there is meticulous care taken in our operating room. Each suture is examined carefully and washed off and no sponges are left near the broken suture tubes. I bring it to your attention because it may be one of the causes of re-operation—a little piece of glass that comes from the broken suture tube.

DR. GEORGE W. KOSMAK, NEW YORK CITY.—I think there are two very important points to be borne in mind in the prevention of postoperative difficulty, and one is the use of the transverse abdominal incision; the other is the use of mechanical retraction to a minimum degree. Most pelvic surgery can be done readily through the transverse incision of the abdomen, which helps to screen off the abdominal contents. I believe that the indiscriminate use of the big abdominal retractors contributes not only to the discomfort of the patient, but to possible peritoneal irritation, with subsequent adhesions. Healing of the wound is likewise more satisfactory with this type of incision and avoidance of undue trauma to the abdominal wall.

DR. E. LEE DORSETT, ST. LOUIS, MO. (closing).—Fourteen of these cases reported in the series of 125 were my own operations. That is rather a high percentage. There is no question that endometriosis plays a large part in the formation of adhesions. I think most of us who have had the experience of opening the abdomen for the first time and separating the adhesions can very quickly make that diagnosis. They are quite different from the inflammatory adhesions we find from abscesses.

The closure of wounds is very important. We all hold nice clinics and have a group of students and physicians watching us operate, but the minute we start to close the wound our audience vanishes. The most important part of the operation probably has just then begun. It has been the habit of some of us to turn our wound closures over to a junior intern. Stand back and watch him try to close that wound. I have since determined that I will have only a resident do it.

Time is an important factor. I do not know whether any of you gentlemen remember years ago at Atlantic City a certain man in discussing a paper said he did an appendectomy through an inch and a half incision in a minute and a half. Another man got up and said, "It may be my misfortune to be operated upon some time, but when you open me up take your time and cut far, wide and handsome."

There is no question that a small amount of bleeding following closure of the abdomen from the points we have not tied off properly is a factor in adhesions, but we well know that it is almost impossible to absolutely stop oozing. We do the best we can.

Dr. Leighton's experience is very interesting. I think it is one that most of us have had. It is not a very pleasant thing to have to tell the family of a patient that something has gone wrong and it will be necessary to re-open the abdomen.

I wish I had been trained to do the transverse incision. I think it has considerable merit, as Dr. Kosmak has said, but I was not brought up that way and have not learned how to do it. I do not know whether I have the courage

to start in doing it now. I remember Dr. Gellhorn used to use that incision, but one cannot learn surgery by watching another man operate.

The retractors are very important. Without doubt when putting in these spreading retractors one may easily run into trouble. I have several times raised the retractors up and found that I had a loop of gut caught between the retractor and the abdominal wall.

I want to apologize for rather hurriedly going over this paper and I thank you for your discussion.