PERSISTENT PAIN AFTER ABDOMINAL SECTION.

BY JAMES B. HUNTER, M. D.,
New York.

THE title of this paper has been suggested chiefly by cases in which the serious operation of abdominal section has been performed directly for the relief of pain. In many doubtful cases of disease of the ovaries and tubes, pain, either constant or periodical, is the prominent symptom—the one feature—which determines the surgeon in advising operation, and the patient in submitting to it. If that pain is not permanently relieved, the operation, whatever may be its actual value, is unsuccessful, so far as the patient is concerned.

In order to understand the causes of pain *after* operation, we must consider first the causes of pain *before* operation, which may be placed, for purposes of study, under two heads, viz., those referable to diseases of the ovaries and tubes, and those due to diseases of the peritoneum.

1. Pain due to diseases of the ovaries and tubes may be further divided as follows:

a. Pain due to disease of the ovary itself, which manifests itself usually at the menstrual period. If continuous, it is apt to be much increased in severity at or immediately before the period. This form of pain has among its causes excessive congestion of the ovary before and during menstruation, and thickening of the cortex, in consequence of chronic ovaritis, whereby the Graafian follicle is prevented from discharging freely. This condition of the cortex I

have several times verified by the microscopical examination of ovaries removed in consequence chiefly of excessive dysmenorrhea. There are probably other changes in the condition of the ovary which have thus far escaped detection, but which would abundantly explain the vague form of pain known as "ovarian neuralgia." When we remember how rich is the nervous supply of the ovary, and how close its connection with the sympathetic system, we shall not be surprised to find it the seat of many "reflex neuroses."

b. Diseases of the tube are responsible for pain in a large number of cases. The disease may be pyo-salpinx, hydro-salpinx, haemato-salpinx, or the so-called catarrhal salpingitis. The latter term is applied rather vaguely in cases where the tube is simply congested. There is difficulty in drawing the line between the normal congestion of the tube and incipient inflammation of that organ. I have been accustomed to consider it more probable that salpingitis was beginning, in cases where a much congested tube was found in connection with an ovary entirely free from congestion or engorgement. Where both ovary and tube have been congested, I have often been at a loss to form a definite opinion, or to obtain one from the pathologists. In either case, it is quite possible that pain may result from congestion of the tube, since it also has a rich nervous and vascular supply. Distention of the tube from any cause may easily occasion severe pain, especially if it provokes vermiform movements that make traction on the ovary. In several cases in which I looked for it, I have seen a free discharge of pus from the cervix simultaneously with relief from intense ante- or post-menstrual pain. This discharge is often described by the patient as occurring in "gushes." Pain may occur in the left tube, when it is prolapsed from the pressure of a distended rectum.

c. Pain may be caused by prolapse of the ovaries and tubes, or from prolapse of one ovary and tube. This condition is usual in pyo-salpinx. It is in consequence of the prolapse that we are enabled by vaginal examination to

make out the shape and size of the diseased tube or tubes. There are several reasons why pain results from this dislocation: There is necessarily dragging on the broad ligaments and adjacent parts; there is exposure of the diseased tubes to mechanical injury and irritation from a loaded rectum, from coitus, and sometimes from the use of pessaries. Intense and lasting pain is often caused by a single vaginal examination.

2. Pain due to peritonitis is of so much importance in connection with abdominal operations, that it may properly be considered separately, though in fact it does often co-exist with the diseases above mentioned. Acute peritonitis may be limited strictly to the region of the ovaries and tubes. This may occur at regular intervals, corresponding with the menstrual periods, subsiding or becoming passive in the intervals. The initial cause of such inflammation may be the escape of the contents of a tube containing pus, by rupture or otherwise. Subsequent attacks may be due to the breaking up of delicate adhesions consequent on the first attack. In some cases there would appear to be a fresh escape of pus at each menstrual period, with corresponding pain. There is often little, if any, rise of temperature. The peculiarity of this form of peritonitis is its periodicity.

In the subacute peritonitis there is constant pain, with some elevation of temperature and general disturbance. There is more rapid decline in health, and the patient readily sinks into a state of invalidism. Pathologically, there is shown to be congestion, with recent adhesions, and sometimes circumscribed collections of pus. This condition is commonly mistaken for pelvic cellulitis, which it is not; nor can such small collections of pus be looked upon as pelvic abscesses.

The third, or chronic, form of peritonitis is characterized by numerous firm adhesions, in which are imbedded firmly the tubes and ovaries. It is constantly observed, that, while the existence of pyo-salpinx provokes the occurrence of peritoneal inflammation, no such result follows in hydro-salpinx.

Peritoneal adhesions, from whatever cause, are a fruitful source of pain, which they cause—

a. By so surrounding and compressing the tubes and ovaries that they have not room to enlarge during the monthly congestion.

b. By preventing the exercise of their proper functions—the escape of ova.

c. By continual traction upon exceedingly sensitive parts.

d. By interrupting the circulation of the blood in the pelvic plexus, thus causing chronic congestion.

e. By direct pressure or traction exerted on certain nerves, as in cicatricial tissue elsewhere. This may be assumed from analogy, but has not been demonstrated.

f. By traction on other organs, especially the intestines. If the bladder is empty and the uterus forward, coils of small intestine gravitate into the pouch of Douglas. These coils are displaced upward, as the bladder fills and the uterus rises. Now, if adhesions interfere with the mobility of the intestines severe pain will result. If the adhesions are unyielding, pain will be caused by the vermicular movements of the intestine itself, and the pain may be as constant as the movement. In like manner, adhesions to the rectum will give rise to severe pain during defecation. Peritoneal inflammation may of course involve any or all of the pelvic viscera, and the resulting pain will be in proportion to the kind and extent of the adhesions consequent. A very severe form of pain is caused by permanent displacement of the uterus; but in this connection a mere allusion to so broad a subject must suffice. We are concerned now with the one symptom—pain, as a result of disease of the pelvic organs, exclusive of malignant disease. For the relief of pain, supposed to be due, we will say, to ovarian or tubal disease, abdominal section is performed. The organs at fault are successfully removed, and the patient makes a good recovery. It may be a case in which both ovaries and tubes are removed, and as the disturbing element of menstruation is eliminated, the patient is encouraged to expect a cure. Three months elapse, and still

the patient suffers, not from the old dysmenorrhea, but from a pain more or less constant. She is encouraged to wait patiently; but in some cases, which have probably occurred to all of us, time brings no relief, and pains of some kind persist, varying perhaps in degree at different times, but never entirely absent. There are a few cases in which the suffering after operation is even greater than it was before. It may be stated in a general way that if, after an operation of the kind in question, there is not marked relief from pain at the expiration of eighteen months or two years, the patient having taken proper care of herself and been favorably situated, the operation may be pronounced a failure, as far as the patient is concerned. It is certainly interesting, and it may be instructive, to inquire into the causes of such failures. The pain may be due, we shall find—

I. To the former peritonitis.

II. To peritonitis following the operation.

III. To some defect in the abdominal wound.

I. If, as we have seen to be more than probable, localized attacks of pelvic peritonitis are due to the existence of pyo-salpinx, the removal of the diseased tubes must prevent the attacks which recur with each menstrual epoch; but it does not necessarily remove the consequences of past inflammation, or restore the normal relations of the injured and displaced viscera. For this reason pain is often not relieved by operation. I believe that, if the subsequent history could be obtained of all the patients who are simply "discharged cured" after Tait's operation, it would be found that many of them, though radically cured of a disease that might endanger life, still suffer pain long after they have passed out of sight. I have made a point for some years past of following up all cases in which I had a right or could obtain permission to do so, in order to satisfy myself of the completeness or permanency of the cure, or the reverse. In connection with the presence of a certain amount of peritonitis, the question arises, whether the disease of the tubes may not sometimes be secondary to the local peritoneal inflammation.

In some cases, it is evident that the tubes were first occluded by peritoneal adhesions, and afterward became distended with pus. In such cases, it is not reasonable to expect a cure to follow the removal of the diseased tubes. The same is true of cases where from any cause there is an almost impenetrable mass of adhesions, including the tubes and ovaries. I have more than once had to abandon the attempt to extricate from such a mass the tube that was supposed to be the cause of all the inflammation. These adhesions may be so dense that the ovaries and tubes can not be distinguished or dissected out, even post-mortem. The removal of the tubes or ovaries by operation in such cases offers no prospect of relief commensurate with the danger to which the patient is subjected.

II. Peritonitis following operation is the cause of pain in a certain number of cases. A slight amount of peritonitis, limited in extent, often occurs after abdominal section. Though causing very little disturbance at the time, and subsiding in a few hours, it may, nevertheless, leave some slight adhesions, sufficient to interfere with the perfect mobility of the viscera. The more extensive and severe the peritonitis, the greater the danger of subsequent adhesions. Dr. H. C. Coe, pathologist to the Woman's Hospital, informs me that he has often found, post-mortem, peritoneal inflammation beginning at the stump or tied portion of the pedicle. Firm adhesions resulting from peritonitis cause pain by preventing the normal mobility of the pelvic viscera, by pressure on nerves, by interfering with the circulation, and sometimes by constricting the intestines and diminishing their caliber. In one fatal case of ovariotomy, occurring in my practice in the Woman's Hospital, there was complete occlusion of the intestine, which was surrounded by bands of lymph. The acute peritonitis had subsided, and but for the obstruction the patient would probably have recovered. Patients do undoubtedly recover from peritonitis (following operation) extensive enough to cause firm and lasting adhesions. The inflammation in the region of the stump is often enough to

attach it to the abdominal wall, and pain then results from traction. It often happens that the uterus is fixed in an abnormal position, so that there is traction on the bladder, and frequent painful micturition. I have under observation a patient who suffers so much, and constantly, from dysuria, that she declares she would willingly go back to her old dysmenorrhea, which was intense, if she could be relieved of her present distress. It happens, probably rarely, that the intestine becomes attached by inflammation to the abdominal wall in the line of the incision. I had the opportunity of seeing this condition in a case on which I did a second operation (the first had been done by a distinguished member of this Society) for the relief of agonizing intestinal pain. The operation was quite in vain. I made my incision about an inch to the right of the first wound, which was in the median line. Immediately beneath the original wound the intestine was seen to be firmly glued to the peritoneal line, which it covered in its whole extent, while it was quite free from adhesions on its opposite side. The remaining ovary and tube were removed, as a possible source of pain, but though the patient recovered well from the operation she was in no wise benefited thereby.

III. Pain may result from a defective union of the abdominal wound, permitting the occurrence of ventral hernia. There may be union of the peritoneum and integument only, in which case the pressure of the contents of the abdomen causes much distress. Pain in the cicatrix may occur here as elsewhere. Abscesses in the region of the wound generally occur, if at all, during the first two weeks, and are the cause of severe pain. They may, however, develop long afterward, as one of the sequela of septicemia, or in patients whose condition is not good; and they may occur at almost any period, from a portion of retained suture, or any foreign body that may have become imbedded in the wound.

PROPHYLAXIS.—The utmost precaution should be taken to prevent the development of peritonitis in cases where it does not exist, and to limit and restrict it if it already exists.

Especial care should be taken to do no violence to the intestines where they are unavoidably exposed, and they should be protected and kept warm. On replacing them, they should be carefully covered by the omentum. Antiseptic precautions should be rigidly observed in every particular. As the stump has been shown to constitute a focus of inflammation, it should be ligated with aseptic silk which has not been exposed or handled after preparation. Hemorrhage should be guarded against with the greatest care. If drainage-tubes are used, they should have no perforations, and they should be gently moved and rotated from time to time. The early and judicious use of drainage and irrigation goes far toward the prevention of peritonitis. In all cases the bowels should be moved as early as the third day, preferably by enemata. If, in spite of all preventive measures, there are symptoms of peritonitis, the cold coil should be resorted to, together with the use of antipyrin, if the temperature is rising. The abdominal wound should be closed with the greatest care, the peritoneum being closed first and separately whenever it is practicable. The method of performing this part of the operation which I have found most satisfactory, was fully set forth in a paper presented to this Society last year.

Treatment.—The treatment of pain from the causes we are now considering is either palliative or radical. The palliative treatment consists of the use of blisters or iodine externally, with hot vaginal injections, alternated with light vaginal tampons of cotton and glycerin, or the boro-glyceride. The internal use of opium or some equivalent is demanded in most cases; indeed, the frequency with which it is necessary to resort to narcotics in bad cases of pelvic pain constitutes one of the great dangers in this form of disease. While some relief is afforded by the local treatment referred to, it is very difficult to see how such measures can make much impression on firm peritoneal adhesions or cicatricial nodules. The careful packing of the vagina may help to keep up a displaced uterus so long as it is movable, and the elastic sup-

port gives the patient a sense of comfort in standing or walking. Absolute rest, in the horizontal position, is of itself of more value than all other treatment together, provided proper nutrition is maintained at the same time.

Radical Treatment.—If all practicable measures for relief have been fairly and patiently tried, and if twelve or eighteen months have elapsed, and there is no improvement, but rather the reverse, a second operation may be warranted. The danger of operative interference, and the uncertainty whether, in case the patient survives the operation, she will be any better, should of course be frankly stated. If the patient prefers the risk to the apparent prospect of becoming a chronic and helpless invalid, or, perhaps, the slave of some narcotic drug, an exploratory incision should be made. In one case of severe intestinal pain I was able to detach a loop of intestine from the fundus of the uterus, thus affording relief that amply justified the operation. In another case of firm adhesions following peritonitis, the adherent coils of intestine could be so far liberated as to afford considerable though not permanent relief. But such cases merely suggest possibilities. As a rule, it is impossible to separate the adhesions, and if separated they are prone to reunite. Fresh peritonitis is likely to follow any violence, and may result from very slight disturbance. Too often the operator has to be content with exploration only, and loses no time in closing the incision. In such cases both surgeon and patient have the satisfaction of knowing that nothing has been left undone that might have afforded relief or cure.

It would have added to the value of this imperfect sketch of the subject to have incorporated details of a number of typical cases, of which I have notes, and to have given the results of autopsies and microscopical examinations of specimens, but they might have carried the paper to a tedious length. As it stands, I feel warranted in drawing the following conclusions:

I. That all cases of abdominal section done for the relief of pain should be carefully followed up and observed, or

made the subject of inquiry, for at least two years from the time of operation, and not counted as cured because the operation itself does not prove fatal.

II. That peritonitis in any degree after operation is to be dreaded as much for its remote consequences as for the immediate danger it threatens.

III. That extreme caution is demanded as to undertaking operations where the history or the physical condition points to the existence of chronic peritonitis.

IV. That secondary operations, though sometimes justifiable, are generally of no avail; that they only occasionally afford temporary relief, and very rarely effect a cure.

V. That a guarded prognosis should be made in all cases of abdominal section done especially for the relief of pain; that the patient should be made fully aware that there are certain chances, which it is impossible to calculate, that a perfect cure may not result from even the most successful operation.

DISCUSSION.

Dr. A. J. C. Skene, of Brooklyn.—This paper is one of interest, because there are yet very important questions requiring discussion connected with this subject. First, with regard to what Dr. Hunter has stated concerning success. Many of the operations which have been counted successes are utter failures, the patient deriving no benefit, living, it may be, through the operation, and afterwards, perhaps, but continuing to be as badly off as before. Very often such cases are reported as successes. They should be reported as failures. This paper from Dr. Hunter, who has taken care to watch his cases in after times, gives some valuable facts.

With reference to pain after operations of this kind, I wish simply to bring up one or two points, which I either did not catch during the reading of the paper, or else he failed to allude to them. One is, the effect of the ligature on the pedicle. As I understood him, and he will correct me if I am in error, he dwelt exclusively upon the effects of adhesions and peritonitis as causes of pain. I am satisfied that one other impor-

tant cause of pain is often the use of the ligature, especially in removing the ovaries and tubes. Then, the ligature must make considerable traction, and in some cases a great deal of traction is necessarily made on the broad ligament, which causes pain. That form of pain may disappear as the parts become accustomed to this new order of things, but for a time it causes suffering. Then, another cause of pain is the application of the ligature just tight enough to arrest hemorrhage, but not sufficiently tight to destroy the nerves; then we get an after-pain, just as the surgeon always does when he has used a ligature for the arrest of hemorrhage in stumps after amputation.

I think that, owing to these effects of the ligature, we get more after-pain when it is used than when we use the cautery clamp. The effect of the cautery is to destroy the nerves up to the point where the destruction goes, and no farther, and after-pain is exceedingly rare. I am almost positive that I have seen much less after-pain when the cautery clamp has been used properly than when the ligature has been used. I say, in using the cautery clamp as it should be used. I believe, so far as my investigations have gone, that the cautery as a means of treating the pedicle has not been thoroughly employed in this country, yet I believe that it possesses advantages over the use of the ligature. This is a point which I wish to bring up, because I am satisfied that it has a bearing upon the subject of Dr. Hunter's paper.

Dr. R. Stansbury Sutton, of Pittsburg.—Before oöphorectomy was established as an operation, when a woman came to a gynecologist, or to a surgeon, or to the general practitioner, with pain in the groin, she was set down as having *ovarian neuralgia*. But since the establishing of oöphorectomy as an operation, it has been proved that the removal of the tubes and of the ovaries, when just such pain existed, did not relieve the patient. I happened to be present when the elder Dr. Keith, of Edinburg, did his first oöphorectomy—did Tait's operation for the first time. He did it to cure an intractable pain located in the groin, supposed to be ovarian. He made the operation with all the skill with which he performs that operation, faultless in every respect, and he made the remark, "If we could only apply the cautery in these cases!"

About one or two months after he made the operation I said to him, How is that woman whose ovaries and tubes you removed for the relief of pain? And he said, "It did not do her a bit of good; she is as bad as ever." Now, I believe, with Dr. Skene, that when we remove the cause of pain by abdominal section, we frequently leave another cause of pain by putting a ligature in there. I do not think there is any doubt about it. But how shall we apply the cautery in oöphorectomy? We can not do it; we must use the ligature. The tissues must be drawn up together, like puckering up the folds of a bag, and the mouth of the bag must be tied, or the folds will draw out; and there is no resource, in my mind, which will enable us to do away with the ligature in Tait's operation.

Dr. Hunter has referred to a case in which I opened the abdomen, three years ago last March, and in which case he reopened the abdomen about one year ago, about two and a half years after the date of my operation. The case was a unique one. Vaginal and bimanual manipulation revealed a tumor in the right side about as large as a guinea-hen's egg. She was suffering intensely, and I opened the abdomen with the intention of removing the ovary, and also doing whatever might be necessary. I found a curious state of affairs, which this specimen represents (illustrates on the blackboard). The intestine was adherent to the ovary, and along the edge of the broad ligament clear out to the uterus. I got the gut loose with my thumb-nail, and the ovary loose from the adhesions, and lifted the mass out upon the abdominal wall, and trusted to my assistant to attend to it while I turned round to wash the blood off my hands. When I turned back I saw the lumen of the divided gut between the assistant's thumb and forefinger. The gut had divided from its own weight and slight traction like a tallow candle without a wick. With the scissors I cut away all the diseased gut and the ovary, brought the two ends of the intestine together, and restored the whole to the cavity of the abdomen, and the woman recovered. That specimen is the one. That woman was not cured of her pain, and it is altogether probable that removal of more of the abdominal contents would not have cured her. Not being satisfied with the result of the operation, further advice was sought, and there were in-

fluences bearing on the case which pressed it to a future opening of the abdominal cavity, with the hope of finding out that there had been some bad surgery done in the first operation. It was a great relief when I heard that Dr. Hunter had opened the abdomen, and now I wish him to tell exactly what he found in that abdominal cavity. Besides, it is not very often that resection of the intestine is made and the excellent results of that operation are seen during life, or even after death. Here is an opportunity to know just what the surgeon may accomplish by resection, and in the interest of science I wish to know exactly what he found, which, I hope, he will give to the Society.

Dr. W. Gill Wylie, of New York.—I was exceedingly interested in Dr. Hunter's paper. I think it is a difficult subject to cover, and it is also a difficult paper to review in an extemporaneous speech. My particular objection to the paper was that, in speaking of pain, especially after operations, he completely ignored the general condition of the patients. We all know that what will give pain in one patient will not give like pain in another. It is well known that there is a general condition in imperfectly developed and delicate women, which makes them complain, from which condition another person will not complain at all; in other words, a certain hyperæsthetic state of the system from complex chronic uterine trouble, especially in such cases as we think we are justified in operating for disease of the tubes and ovaries, which explains the suffering of the patient much better than by referring it to the local condition of the tissues. I am certain that we can not treat of such a general subject as pain without considering the condition of the individual patient; without taking into consideration this general condition of the patient before the operation, it can not be explained in a satisfactory manner.

I should also object somewhat to the manner in which peritonitis was spoken of, as if it was a disease by itself. My idea has been that peritonitis is due to some other condition which gives rise to it. There are many causes of so-called chronic peritonitis, and it is these conditions which we are to look for. In many cases the suffering after operations is due to the imperfect performance of these operations. Dr. Skene

has indicated one or two points, but he has not covered them all. I am satisfied that when we tie the pedicle, in removing the ovaries and tubes, a piece of diseased tissue may be left in the stump; even if it is not more than half an inch of pyogenic membrane, it may cause repeated attacks afterward which will be attended by pain. I have, therefore, thoroughly destroyed all diseased tissue left beyond the point of ligature, preferably by the use of the Paquelin cautery, and I am certain that it has lessened the occurrence of these moderate attacks of peritonitis, which sometimes result in abscesses or sinuses terminating in permanent fistulæ. These cases can be cured by dilating these sinuses and removing the ligatures. In one of Dr. Hunter's cases I dilated an old sinus, and extracted a ligature with which the pedicle had been secured, and gradually the patient recovered.

As to the other causes which give rise to pain after and before the operation, I am certain that a great deal is due to the bursting of small cysts which are not true ovarian tumors; but they burst, and this irritating fluid provokes slight attacks of peritonitis. I have gone so far as to experiment with these cysts, and have burst them purposely and watched the results, and they have been followed by slight attacks of peritonitis, from which the patients have recovered.

Another question Dr. Hunter has not brought up, and that is, where we operate for diseased ovaries and tubes we have a chronic inflammation of the uterus, especially of the lining membrane, which is not cured by removal of the ovaries and tubes, and this may cause pain, not necessarily in the uterus itself, but reflex pains, which occur in the sides and other parts of the body. I am satisfied that many of these cases can be cured completely by dilating the uterine cavity and making inter-uterine applications of pure carbolic acid. You will not only relieve the local inflammation, but also the reflex symptoms.

I would not attribute so much to the influence of adhesions as Dr. Hunter has done. I am certain that Nature is better able to take care of scars, and other similar conditions, than she is ordinarily accredited with. Unless there is some disease somewhere, some central septic trouble at work, adhesions

nearly always take care of themselves. When we remove completely the diseased tissue we rarely have indurated and fixed uteri. In almost every case, when examined even months or years afterward, the fixation of the uterus has almost entirely disappeared. If there is no pyogenic membrane there, slight inflammation of the stump will not create any lasting disturbance. Small hemorrhages may also occur in the stump and light up peritonitis, and to obviate all these difficulties I give special local treatment

Dr. Robert Battey, of Rome, Ga.—I have had a little of the experience alluded to by Dr. Hunter, and have therefore listened with great interest to the reading of his paper. We are familiar with these neurotic attacks alluded to by Dr. Skene. We are also familiar with the pain which the timid patient may suffer from a carious tooth, until, it may be, a neurosis, a persistent neuralgia, is gotten up with such intensity that extraction of the tooth entirely fails to relieve the neuralgia, which may continue for years, due to alteration in the nerve tissue, itself caused by this long-suffered pain. The explanation sought by my friend Dr. Hunter, in inflammation and fibrinous deposits, formation of cicatrices in the pelvis, etc., has been carefully considered by myself, and I have wholly failed to find a satisfactory explanation in that direction. I think Dr. Skene is quite right in his criticism, and it is borne out by my experience. The neurotic cases have been almost uniformly those in which I was unable to find such deposits in the pelvis; and, indeed, nothing to explain it at all.

Another remark which Dr. Hunter made, if I did not misunderstand him, is that we should give up one of these cases as a failure when it is of twelve or fifteen months' standing. I would like to qualify that remark, by extending it to more than double the limits fixed by Dr. Hunter. Some of my cases have been very unsatisfactory at the end of twelve or fifteen months, but have afterward exhibited complete and gratifying cure, simply by the lapse of time, without any special treatment whatever.

With reference to the causes which produce this neurotic condition of things, I am inclined to rank in the first position

the acquired neurotic habit from long suffering, and by acquired habit I mean, of course, the associated alteration in the nervous structure. In the second place, my mind has been struck, in looking up these cases, with one point mentioned by Dr. Skene, and that is, the securing of the pedicle rather slackly by the ligature. Some years ago an eminent quack in the south operated for hemorrhoids simply by throwing around them a ligature. A friend of mine was called in to see a case where he had applied the ligature very slackly, and had thrown his patient into most agonizing pain—such pain, as obliged him to fall back upon the regular profession to bring him out of his dilemma. And so a slack ligature may become a source of irritation in these cases.

Dr. Skene suggests another point in this connection, and that is, the use of the thermo-cautery and the clamp in the extirpation of the ovaries, after the method of Baker-Brown and Keith in ovariotomy. I have had an experience which may have a bearing on this subject, and that is in the use of the écraseur—separating the ovary from its attachment by the use of Chassignac's écraseur. It was my early practice to use the écraseur entirely, leaving no ligature, and in none of those instances did my patients ever have these troublesome neuroses. I have been seriously contemplating returning to my former method of treating the pedicle in this way. I had no trouble with hemorrhage while using the écraseur.

With reference to the treatment suggested by Dr. Hunter, by the second opening of the abdomen, I would call attention to the fact, which is now well established, that by simply opening the abdomen for diagnostic purposes, unaccompanied by any great disturbance of the parts, except in the separation of adhesions, and speedily closing it, the patient recovers not unfrequently with a very marked improvement in her condition, especially with regard to neuroses and suffering from pain. I have been at a loss to account for this. In a paper read before the American Medical Association, at New Orleans, the position taken by the author was, that in such cases the mere passage of the hand into the abdomen, and bringing it in contact with the peritoneum, produced such a wonderful impression and influence that one might be led to believe that the

proper treatment for these cases of pain and erratic disease was to open the abdomen, pass in the hand and rub it over the peritoneum a few times, and in that way cure his patient. I do not, however, pretend to account for these cases. I may recite a rather remarkable case which occurred in my infirmary—an obstinate neurotic case belonging to the class of gonorrheal origin, probably, where everything was firmly glued up by adhesions. Having opened the abdominal cavity, and satisfied myself of the impracticable character of the case, I very carefully abstained from disturbing the parts and the patient was left with the impression that her ovaries and tubes had been removed. She expressed her most profound thankfulness for he relief from pain which the operation had afforded, and that relief has remained up to the present time—two months. When the operation was performed, she was in the habit of taking a full dose of opium twice daily, to relieve the pain, but since the operation she has not taken any opium, nor even bromide of potassium. She has absolutely recovered, and a still more remarkable fact is, that whereas the menses were regular before the operation, they have now ceased. The mental impression seems to have arrested the menstrual function in this woman thus far, as there has been no return of the menses, and she is exactly as she hoped to be had the operation been completely successful.

With reference to opening the abdomen in neurotic cases, unless good can come of it from making an impression on the mind of the patient, I can not see that we have much to accomplish by a secondary operation.

With reference to the experience of Dr. Wiley, in the persistence of pain in patients with general broken-down health following upon the operation where uterine disease has persisted, as I understood him, extirpation of the ovaries, *per se*, will not cure the uterine disease. But I think that the uterine disease will get well of itself. Such, at least, has been the result of my experience, that they recover without uterine treatment. I think, however, that I have expedited the cure by applications to the interior of the uterus of a solution of iodine in carbolic acid, introduced by me to the profession under the name of iodized phenol. I think some cases, particularly these

neurotic cases, have been considerably benefited by such applications.

Dr. H. P. C. Wilson, of Baltimore.—I was greatly pleased with Dr. Hunter's paper, as its chief idea was to bring a practical subject before us, because we have to encounter such cases continually. I am satisfied that although cases do occur where the pain after laparotomy continues, and may be explained by adhesions, the result of local inflammation, yet the large majority of the cases are just the class referred to by Dr. Battey, where the seat of the difficulty is much more frequently in the peculiar condition of the brain than in the seat of the operation. Most of the cases in which we are called to operate are those of long standing, and very frequently they have "suffered many things of many physicians," and have been told by the neurologists what they have in their ovaries, until their mental condition has become so morbid that they have become almost insane with regard to their uterine appendages. Even after these organs are removed this neurotic condition remains sometimes for a long time. But in cases where one ovary or where one ovarian tumor has been removed, and that woman marries and is obliged to attend to her family duties and her children, these pains disappear; whereas in women who are wealthy, and can ride when they please, and can pamper their nervous system, the pains will remain through life. I have found nothing so good for these pains as plenty of exercise on the feet. I make my patients walk miles, and I do not think anything does so much to break up this neurotic habit, which amounts in some cases almost to a mania, as plenty of exercise. There is one remedy which I use more than any other, and I do not know how I should get along without it, and that is asafetida. I never order less than sixty pills at a time, and these keep the mind of the patient occupied, and in many cases prove very conclusively that these conditions are more mental than physical. I know a gentleman who had one of these neurotic patients who complained of all kinds of pain, and everything had failed him in affording relief, when he finally determined to make some mental impression, and required his patient to eat a reed-bird every two hours, night and day, and his patient did so with great benefit.

Dr. Matthew D. Mann, of Buffalo.—With reference to the objection urged by Dr. Skene concerning the use of the ligature, that it might cause persistent pain by pressure upon the nerves of the stump, I presume he uses the silk ligature. I do not see that this objection to the ligature will obtain when the catgut is used. I have used catgut in twenty-five or thirty laparotomies, and have had no trouble with it, and have seen no cases in which pain followed its application.

Another point made by Dr. Battey is, that these cases recover a long time after the operation. I think this is an important point. I have one case in mind which is steadily improving, and has been doing so for four years. Before the operation she was in a most deplorable condition, and nothing further has been done in the way of treatment.

Dr. Joseph Taber Johnson, of Washington.—I was about to make the same remark which Dr. Mann has made, with reference to the cure of these cases being delayed for some time. I was very glad to hear Dr. Battey make the statement, that the operation should not be considered a failure if cure was not complete for three or four years after it was performed. I am very much encouraged with regard to several operations which I have performed in cases of hystero-epilepsy associated with the greatest amount of pain. My patients had been under treatment for a number of years, and had "suffered many things of many physicians" for many years. Their nervous systems had become accustomed to thus exploding in convulsions at their monthly periods. In several of these cases the pain which accompanied menstruation was agonizing, and it has been entirely removed; but there is occasionally a slight return of the convulsions, so that some doubting Thomases say the cases are not cured. These cases can not be marked as completely cured, but as cases which are nearly cured, and getting better every day as they progress.

I would refer to another point, suggested by one of the cases reported, where the uterus was retroverted and the ovaries prolapsed. The pain was excessive, and associated with constipation. Skene Keith, who had done twenty-four oöphorectomies successfully when I saw him last July, has modified this operation for the purpose of relieving the retroversion.

He uses the clamp on one pedicle, after removing the ovary and tube, and draws up the uterus, correcting the retroversion, securing the pedicle with a clamp in the abdominal wound. I saw him apply the clamp in two cases in the hospital, and he was encouraged to continue this method of correcting the retroversion, which was not corrected by any other operation.

Dr. Hunter.—The pain which Dr. Skene speaks of, in the pedicle, I have not regarded as persistent. I fail to see how any kind of ligature can produce such an effect upon the nerves as to give rise to a persistent pain, and I have always regarded the pain from that cause as only temporary. Persistent pain is probably not due to including the nerve in the pedicle, but rather to adhesions. In two cases which Dr. Coe has reported, nothing could be detected at the post-mortem, or microscopically, which would explain the cause of the persistent pain. As to the cautery clamp, I should like to use it, but I have had difficulty in applying it sufficiently low. I have found that I have made a mistake in drawing up the parts sufficiently high to allow of its application, and latterly I have been afraid to make much traction, because the broad ligament is very prone to tear and bleed, and a fatal hemorrhage may thereby be produced. I have a cautery-clamp sent me by Dr. Keith, and regard it as a most admirable instrument, and am prepared to use it in ordinary ovariotomy. Dr. Sutton has asked me what I found in his case. There was no doubt that the woman suffered severe pain, although she was somewhat peculiar. I opened the abdomen a little to the right of the line left after the first operation, and rolled out the abdominal wall, when I could see the line or scar upon the intestine, which showed as a clean white line. The intestine was united to the abdominal wall. It was a rare opportunity to see the result of an extraordinary operation. I removed the other ovary and tube, although they were not much diseased, for the patient insisted, before the operation was performed, that the other ovary should be removed. Her condition was neither worse nor better after the operation, and I have since heard that she has attempted suicide on account of the intense pain from which she was suffering.

Dr. Wylie has referred to the depraved condition of pa-

tients before operation. I think that is secondary, and that they get into the depraved condition because they are obliged to take morphine, alcohol, etc., to relieve pain. The case which I had operated upon, and which Dr. Wylie refers to as one which he cured, was one of ventral hernia. The woman was up on the second day after an abdominal section and tore off the bandages, and the wound did not heal properly. The hernia was the result of her own folly.

I agree with Dr. Battey regarding the chronic metritis after the ovaries are removed, and believe the uterus will take care of itself. I quite agree with Dr. Battey also with regard to the extension of the time in which a cure may take place to two or three years, instead of eighteen months, as I have stated in my paper. I gladly make this amendment, because I now recall a case in my practice where the patient went on improving for a much longer period than two years. In removal of the ovaries and tubes it is well not to expect improvement before the lapse of twelve months.

Dr. Battey has spoken of pain after slack ligation of hemorrhoids as being analogous to that from imperfectly tied pedicle. I have seen severe pain after ligation of hemorrhoids, but I do not think that it is lasting, and I think that the same is true of the pedicle.

Dr. Wilson has referred to the wealthy class of patients as being that in which these so-called ovarian pains are most likely to be persistent and troublesome. But that is not the class which suffers most in New York. Many of these cases are of the poorer classes, who try all remedies under the sun, even asafetida, and come to the surgeon as a last resort, and in these cases I have had some of the most satisfactory results.