Successful Removal of the Uterus and both Ovaries by Abdominal Section; the Tumour, fibro-cystic, weighing thirty-seven pounds.[1]

By Horatio Robinson Storer, M. D., of Boston, Assistant in Obstetrics and Medical Jurisprudence in Harvard University, Surgeon to the New England Hospital for Women, and Professor of Obstetrics and the Diseases of Women in Berkshire Medical College.

But few of the capital operations of surgery have been attended by so uniformly a fatal result as has been extirpation of the uterus when in its normal position; seven-eighths of the attempts at removal of the organ under these circumstances, prior to 1863, having resulted in death. The voice of the profession, therefore, even of that branch of it more particularly devoted to the treatment of the diseases of women, and accordingly more likely to be sanguine of success, has been almost unanimous in pronouncing the operation unjustifiable. Such has been the verdict in the past, and such is found to be the case even in the present days of legitimatized and frequent abdominal section for ovarian disease. Thus, says Gendrin—

"It is evident that the extirpation of the uterus is one of the gravest of operations in surgery, since it is the most fatal. We must conclude that in many cases it will be wiser to abstain from the operation."[2]

"We consider extirpation of the uterus, not previously protruded or inverted," wrote the editor of a leading British periodical, "one of the most cruel and unfeasible operations that ever was projected or executed by the head or hand of man. We are very far from discouraging bold or untried operations, but there is a limit beyond which it may not be prudent to go, even should a solitary instance or two of success rise up as precedents to bear out the operator."[3]

"After a careful examination of the results of the operation when the uterus is *in situ*," remarks Churchill, thirty years later, "it is really difficult to find adequate reasons in its favour, except the repugnance which every one must feel to give up entirely the hope of affording relief."[4]

Prof. Simpson, so late as within three years, has used the following language:—

"Cases have been put upon record where the operation was performed, but with such disastrous results as to hold out no encouragement whatever to its repetition, but rather to serve as a loud warning against it. Judging of it

---

[1] An abstract of this paper was communicated to the American Academy of Arts and Sciences, at their meeting of Nov. 14, 1865, in the hope that certain points involved, as the attempt at menstruation in the absence of both uterus and ovaries, might thus be more completely brought to the attention of physiologists and other scientists in medicine, just as its present publication will reach the great body of workers in practice.

[2] Journal Générale de Médecine, Oct. 1829.

[3] London Medico-Chirurgical Review, July, 1825, p. 264.

[4] Diseases of Women, p. 318.

a priori, we should regard the operation as unjustifiable, and experience serves only to confirm the judgment. * * * Even when the disease is confined to the body or fundus, extirpation of the uterus is such a hazardous operation, that I have no hesitation in saying that it should even then be rejected, as an utterly unjustifiable operation in surgery."[1]

The quotations above given are expressions of opinion as to the justifiability of the operation in cases of malignant disease, where, in the presence of intense suffering, and the life of the patient being necessarily in immediate peril in the absence of any such attempt, there is the greatest excuse for its performance.

For the treatment of cancer, methods have frequently been considered legitimate that would be condemned for any other form of disease. Desperate cases have, through their very desperation, nerved both surgeon and patient to measures from which, for other diseases, each would equally have shrunk. If, then, the extirpation of a carcinomatous womb by abdominal section is pronounced unjustifiable by our leading authorities, on the mere ground of its immediate dangers, irrespective of the probably recurrent character of the disease, it is not surprising that the removal of the organ for non-malignant affections should have been, at least as decidedly, considered improper, and we therefore find Graily Hewitt, of London, the last and the best of British systematic writers upon the diseases of women, speaking as follows:—

"The inconveniences resulting from the presence of tumours of the kind now under consideration (fibrous) are hardly ever sufficiently intense to render justifiable their removal by surgical operation."

And again:—

"Ordinarily, the effects of the presence of large fibroid tumours of the uterus in the abdomen are not such as to call for or to justify operative measures. In some such cases the abdomen has been opened for their removal, under the impression that the tumour was of ovarian nature, and in some such cases the tumour has been excised, but generally with unfavourable results. Such cases are not fitted for operation."[2]

He speaks of the sole British instance of success, that by Dr. Clay, of Manchester, "whose boldness and success in abdominal operative surgery are unequalled," as "a most remarkable case, an exceptional one in every sense of the word;" and the leading medical journal of London, also in 1863, characterizes the other successful instance of the operation in Europe, that by Koeberlé, as "one of the most extraordinary operations ever undertaken in surgery."[3]

Most of our latest obstetrical authorities omit all mention of the possibility of the removal of the uterus when *in situ*, by their silence expressing the strongest condemnation of its mere idea; while others confine their remarks to those methods of partial procedure, by enuclea-

[1] Clinical Lectures on Diseases of Women, 1863, p. 65.

[2] The Diagnosis and Treatment of Diseases of Women, 1863, p. 572.

[3] Med. Times and Gazette, 1863, p. 604.

tion, &c. &c., which, in my own hands as in those of others, have proved successful where the uterus could be approached from below, but almost every instance of attempting which by supra-pubic operation has proved fatal.

Thus, Dr. West, of London, speaks as follows:—

"The non-pediculated growths, and those pedunculated tumours which spring from the outer surface of the uterus, are almost or altogether beyond our reach. A few cases are on record in which the abdomen has been laid open, and in which the extirpation of a fibrous tumour from the outer surface of the uterus has been attempted, and even actually accomplished. In all instances but one, which is reported by an American surgeon, Dr. Atlee, its completion was followed by the patient's death. It is a proceeding to be altogether deprecated, difficult to accomplish, almost certainly fatal if concluded, surrounded by dangers which wisdom cannot foresee, nor skill avert."[1]

The above remarks are but an echo of the opinion of Dr. Rigby, expressed the year before, who said that—

"The position, form, size, and connections of the tumour must be peculiarly favourable to render such an operation possible, and even then it would only be justifiable if accompanied with symptoms of the most urgent character."[2]

While the very last writer of all upon the subject, my friend Prof. Byford, of Chicago, thus summarily disposes of the whole subject:—

"There remain a large number of uterine tumours that are wholly beyond the reach of the surgeon. I am not aware that any living surgeon advises the removal by surgery of an extra-uterine fibrous tumour, even when we can decide that the pedicle or point of attachment is small."[3]

Under these circumstances it might seem presumptuous for me to claim, as I shall now do, for extirpation of the uterus affected simply with non-malignant disease, its place as a practicable and perfectly legitimate operation in surgery, were I not able to furnish positive evidence of a character to outweigh all merely preconceived opinion, as well as that based upon the result of previous operations, part of which were unfavourable only because they had been more or less carelessly or improperly undertaken or performed.

Quite a number of attempts at extirpation by abdominal section of the uterus enlarged by fibrous outgrowths have of late years been made, some of them successful so far as concerns removal of the tumour, some of them uncompleted, but a large majority of them rapidly proving fatal. It is necessary that this operation should not be confounded with removal of the undisplaced organ by the vagina; nor with its removal when prolapsed; nor with removal of an inverted uterus; nor with amputation of the cervix below the vaginal reflexion; nor with amputation of the cervix above the vaginal reflexion; nor with removal of sessile or pediculated fibroid projections into the uterine cavity; nor with attempts at enuclea-

[1] Lectures on the Diseases of Women, Lond. 1858, p. 308.

[2] Constitutional Treatment of Female Diseases, Lond. 1857, p. 196.

[3] Practice of Medicine and Surgery applied to the Diseases and Accidents incident to Women, 1865, p. 365.

tion, by approach from below, of interstitial uterine tumours; nor with attempts at removal, by approach from below, of extra-mural pediculated or non-pediculated uterine growths; which are all of them very different procedures, and have all of them, with the exception of the first, been attended with a much lower degree of mortality. It should not be confounded, moreover, with three other operations which it might seem to more closely resemble, namely: with the removal, by gastrotomy, of pediculated uterine fibroids; nor with the attempt at enucleation, after gastrotomy, of interstitial uterine growths, allowing the matrix to remain *in situ*;[1] nor with removal of the organ through an abdominal incision, after its attachments had been divided by dissection from the vagina; each of which operations is probably intrinsically more fatal, the latter, indeed, almost necessarily so. Nor should the operation by simple abdominal section be thought so very different from the ordinary operation for extirpation of an ovary, save as concerns the greater difficulty of its performance, the greater courage it requires in the surgeon, and the greater necessity of careful preparatory and after-treatment.

The removal of the uterus by abdominal section, for malignant disease, was proposed by Wrisberg in 1787,[2] and again by Gutberlat in 1814;[3] neither of them, however, seeming to have attempted it in practice. It is said, indeed, to have been performed by Blundell and by other foreign surgeons; but, upon investigation, I find that, with the exception of a single case by the elder Langenbeck, which died soon after the operation,[4] the dissections were made from below; in one or two instances, it is true, there having been also an abdominal section conjoined, through which to steady the organ during the operation, and to remove it, when excised from the vagina. These cases, unless perhaps one of Blundell's, seem to have been uniformly fatal. There are still others, that I find were merely the ordinary ones of inversion or prolapsus, operated upon in the usual manner. One or other of these statements will be found to apply to the famous cases of Sauter, Hunter of Dumbarton, Holscher, Osiander, Delpech, Recamier, Heath, Windsor,[5] Banner, Roux, Lizars, Bramer, Siebold, Dubled, Luytgaerens, Rust, and others. There is still another class of

[1] In describing a late case of the kind referred to, Spencer Wells states that he reports it only as "a warning" against the repetition of the operation.

[2] Malgaigne: Operative Surgery.

[3] Siebold's Journal für Geburtshülfe, Nov. 1825, vol. v.

[4] Edinburgh Med. and Surg. Journal, Jan. 1826, p. 242.

[5] Windsor's case is spoken of in the *Boston Medical and Surgical Journal* for July, 1855, p. 445, as one of successful extirpation of the uterus through the abdominal walls; upon examining, however, the tenth volume of the *Transactions of the Medico-Chirurgical Society of London*, in which it was reported, the case proves to have been merely one of inversion removed by ligature from the vagina.

cases, like that of Granville,[1] reported by Lyman[2] as one of fibrous tumour of the uterus, but which, upon examining the authorities referred to by him, I find to have been distinctly ovarian.

The operations for removal of the uterus by purely abdominal section, for non-malignant disease, have all occurred within comparatively a very recent period. The chances have been considered so great against success, that Dr. Atlee, of Philadelphia, known abroad as the American ovariotomist *par excellence*, and at home as our boldest and most successful operator upon uterine tumours, writes me that he has never attempted extirpation of the uterus, although his "abdominal sections have now numbered 125;" and Professor Meigs, of Philadelphia, whose European reputation as an obstetrician has for many years been greater than that any other American has ever attained, writes me as follows: "I consider you to have been very fortunate to have been able to discharge your patient cured, after so dreadful an operation. Certainly it is one that I could never have been induced to perform."

So far as I can ascertain from careful inquiry, and I have now received many letters upon the subject from leading authorities at home and abroad, there have hitherto been put upon record but five successful cases of extirpation of the uterus by purely abdominal section; one of them British, by Clay of Manchester,[3] one of them French, by Koeberlé of Strasburg,[4] and three American, one of which was by Kimball of Lowell,[5] and the other two by Burnham of the same city,[6] the majority of successful cases thus belonging to American surgery. They were all five, non-malignant tumours.[7] To these cases I now add a sixth from my own practice.

Sarah A. Colcord, of Malden, placed herself under my charge on 25th August, 1865. She is aged 47, unmarried, and has enjoyed good health until, some five years since, she became conscious of the existence of an abdominal tumor. This has steadily enlarged, and in May last she con-

[1] London Med. Gazette, xxxi., 1843; New Monthly Magazine, Oct. 1827; Lee on Ovarian and Uterine Diseases, p. 86.

[2] History and Statistics of Ovariotomy, 1856, p. 66. The cases quoted by this author from the seventeenth century, by Andreas à Cruce, Carpus, and Zacutus Lusitanus, I find to have been instances of removal of ovaries, or else of the uterus by the vagina, and not by abdominal section.

[3] Transactions of the Obstetrical Society of London, vol. v. 1864, p. 67.

[4] Medical Times and Gazette, February, 1865, p. 209.

[5] Boston Medical and Surgical Journal, May, 1855, p. 249.

[6] Nelson's Northern Lancet, January, 1854; Worcester Journal of Medicine, February, 1854, p. 40; Boston Medical and Surgical Journal, October, 1865, p. 211.

[7] It was Clay's case that persuaded Dr. Simpson to modify the opinion I have quoted from his Clinical Lectures. In January, 1863, he allows that "the case may turn out as a precedent for operative interference in some exceptional cases of large fibroids of the uterus." Transactions of the Obstetrical Society of London, vol. v. 1864, p. 70.

sulted Dr. J. L. Sullivan, of Malden, who diagnosticated the tumor to be uterine and advised against any operation.[1] Miss C. is now larger than a woman at the full term with twins, walks with difficulty, cannot lie down without dyspnœa, is emaciated, very anxious about herself, and desires relief. She is quite deaf. The menses have continued normal up to the present time though always somewhat scanty, and were present a few days since. There has been little or no dysmenorrhœa, certainly nothing like uterine contractions or expulsive pains.

Upon examination, the vagina was found occluded by an extensive hymen and very sensitive, on which account, as well as for greater accuracy in diagnosis, the patient was thoroughly anæsthetized. By external palpation, the whole abdomen was discovered to be filled by a resisting mass, in outline apparently single or mono-cystic, although affording localized fluctuation at many points of its surface, the waves being equable, but neither sharp nor dull—neither distinct nor obscure—evident enough to afford no doubt of the existence of fluid, but yet by no means strikingly decided. The outline of this abdominal tumour was regular and uniform, save in the right iliac region; laterally and inferiorly there was felt a double prominence, more marked upon deep pressure, the two portions distinct from each other, slightly movable, and each giving much the sensation of a small fœtal head. These points were not so marked except under anæsthesia. There was no vascular bruit upon auscultation, nor any sign of ascitic effusion.

By the vagina the cervix was found somewhat hypertrophied, and, so far as could be judged, for the vagina was very narrow and contracted, though not very unusually elongated, the same was true, and to a greater degree, of the body of the uterus. The cervix, as above implied, was somewhat elevated, and external to it there was general resistance, non-fluctuating to pressure upon both walls of the vagina, but nothing decisive as to whether the tumour was uterine or ovarian, nor could additional evidence upon this point be afforded by examination by the rectum. The os was nearly normal in size; the sound entered, not without difficulty, a little more than the normal length, two and a half inches, and the impression was given, after prolonged, careful manipulation, that this only was the extent of the uterine cavity; the negative character of this evidence being explained by the cavity having been encroached upon by the thickening of its walls. The uterus could hardly be moved by the sound, either with or independently of the abdominal mass, which was itself almost immovable. The diagnosis was therefore left undecided—there being present some signs of a multilocular ovarian cyst with an enlarged, but indurated base—while on the other hand the condition of the right iliac region, as examined from the abdomen, was unlike anything I had

[1] Dr. Sullivan writes me as follows: "I expressed to her my conviction that the uterus was the organ primarily affected. I confess that I was then ignorant of the fact that excision of the uterus had been numbered among the triumphs of obstetrical surgery. While a medical student, I had twice witnessed the abdomen laid open from sternum to pubes, and an immense uterine outgrowth removed by separating it from the womb, and ligaturing the bleeding vessels; both patients died within twenty-four hours, from internal hemorrhage. Bearing in mind these cases, and feeling certain in this instance that the uterus was involved in the mischief, I did not regard the case as one suitable for operation, and expressed myself accordingly."

previously perceived in confirmed ovarian cases. In addition to this, was to be taken into consideration the unusual circumstance, supposing the case to be fibrous and uterine, of the evident, but localized fluctuations detected throughout the greater part of the abdominal mass, and the absence of both menorrhagia and non-periodical hemorrhage.

It was clear enough from the examination, the history, and the presence and character of the catamenia, that the tumour was neither an uterus distended by pregnancy, natural or abnormal—whether from hydatiginous degeneration of the chorion, amniotic dropsy, retained placenta or membranes, or a mummified fœtus, nor was it an instance of hæmatometra, whether endo-uterine effusion, or peri-uterine, or pelvic hæmatocele, hydrometra, or physometra.

It was not a case of excessive pelvic cellulitis; nor of abdominal tumour more properly speaking, commencing from a strictly abdominal origin and extending downwards into the pelvis.

There was present no sign of large intra-uterine polypus, pediculated, sessile, or enucleating, nor any of malignant disease, either of ovary or uterus—whether of cervix, body, or fundus.

Under these circumstances, perceiving that the case was an unusual one, I admitted the lady to my private hospital in Boylston Place. Upon the next day I sought the opinion of my father in consultation. After a careful examination, he expressed to me an opinion identical with that I had myself already formed—very guarded and indecisive. I now determined to keep Miss C. under observation for a while, in the city—and this for a twofold purpose, that I might perhaps gain an additional clue to the true character of the case, and that if I decided to operate, the patient might be previously prepared for it by special prophylactic treatment, and by becoming accustomed to the change of local climate and surroundings—each of these being points to which I attach extreme importance in operations about the pelvis. Under appropriate measures a chronic cough which had for some time existed, and which might have occasioned subsequent disturbance was made to disappear, and under the prophylactic treatment alluded to above, the bowels, which had been habitually constipated, became perfectly regular.

After mature reflection I decided to operate, being persuaded that the tumour, whatever its nature, would, unremoved, eventually destroy the patient. I will not say that I was absolutely certain of its character; I have now seen too much of abdominal tumours to believe in absolute certainty of diagnosis in any case, no matter with what care examined. Instances enough are on record, even in these days of anæsthesia and the sound, of the most astonishing disclosures upon an exploratory incision. I have myself seen a celebrated foreign gynæcologist tap a psoas abscess for an ovarian cyst, and have been told by one of our own best ovariotomists that he himself has once performed the section only to find a pregnant uterus. The cases where this organ or the bladder have been punctured by the trocar, where in pseudo-cyesis the abdomen has been opened and no tumour found, and where mesenteric or omental disease has simulated a removable tumour, have been too numerous not to put us on our guard; and it is besides well known that in most of the cases where removal of the uterus has been attempted or effected, the operation was commenced with the intention of removing an ovary. In but a few of these cases has the surgeon approached his task with the conviction or even expectation of finding extensive uterine disease, and under these

circumstances performed his operation deliberately and with sang froid. I can only say that I expected to find, as I did find, my case very unlike any that I had ever seen before, and that I never for a moment entertained the thought of not completing the operation after the first incision had been made.

I had retained the patient under observation for a month since the catamenia were last present. They had previously been regular, but a day passed, two, a week, without their reappearance, suppression having undoubtedly been caused by the patient's anxieties. I therefore appointed an hour for the operation, and at the very moment the ether was about being administered, and the patient almost in a frenzy of alarm, the menses suddenly appeared. A week's longer delay, therefore, became advisable.

I have spoken of the patient's alarm. She had at first viewed her prospect as hopeful, but as the day of trial approached, her courage entirely failed, and I was compelled, as I consider it is often our duty in desperate cases to do, to take the sole responsibility of advising the operation and carrying it into effect; herein differing from many of the profession, who make their only standard of necessity the request or the supplications of a patient. This is not the rule in many of the severe operations of general surgery, where the patient places himself, or has been placed, under control, as at an hospital. In my patient's unbounded gratitude, now that she has been saved from the fate that had been impending, I find my sufficient excuse and my reward.

I finally operated on the 23d of September, assisted by Drs. Dix, Langmaid, and Tyng, Dr. Dix kindly taking charge of the etherization; to their skill, courage, and patience, much of my success is undoubtedly due. The temperature of the room was 66° Fahr., as nearly as possible to which standard it was kept during the whole of the after-treatment. The bowels had been moved, and care taken that little or nothing had entered the stomach during the forenoon. Miss C. came readily under the influence of the anæsthetic; the bladder was emptied by catheter, and an incision of five inches made into the abdominal walls from just below the umbilicus downward, keeping within the track of the right rectus muscle. The several layers of integument, fascia, muscular tissue, and peritoneum were carefully divided upon a director, and the tumour exposed, almost completely filling the cavity of the abdomen. Its colour was of a very dark purplish, and the omentum was adherent to the greater portion of its circumference. The presence of these adhesions, and of still others at the sides of the mass was ascertained while the opening was still but slight, by the introduction of a sound. The omentum was highly vascular, some of the vessels being of very great size, resembling in this respect, and in appearance, those of the placenta, and directly communicable with the substance of the tumour. Some few of them were ligated by wire before division, and others divided *en masse* by scissors and afterwards secured by wire ligatures and torsion. Upon the left of the abdominal tumour and deep down there were other extensive adhesions to the peritoneum, which were partly broken down and partly severed. The mass was now found continuous with another also of large size, and of very irregular outline, completely filling the cavity of the pelvis. To manipulate the latter while the abdominal portion was still attached proving very difficult from its weight, their separation was effected by the ecraseur, merely for convenience' sake, and the external opening enlarged

by half an inch, to allow extraction. The pelvic mass was found largely attached laterally, the morbid adhesions being chiefly to the left, very firm and vascular. It was lifted up with great difficulty sufficiently to allow a clamp to be passed beneath it; this protected the vaginal septum from being opened, the broadened cervix was after much taxis got wholly within its grasp, and the instrument fastened tightly. Excision was then accomplished by the ecraseur, with the result, so firm were the tissues and so little the spare room, of opening up the jaws of the clamp throughout nearly the whole of its extent, so that it fell from the stump the moment the tumour was cut away. It was now evident enough that the division had been of uterine tissue, though to what extent it was impossible to ascertain without dissection of the tumour. Upon some six additional open vessels wire ligatures were placed, several more were twisted, and the operation was practically completed. So free, however, was the oozing from the extensive surfaces of adhesion that an attempt was made, at Dr. Langmaid's suggestion, to check it by the application of alcohol, but it proved insufficient. I feared that the ordinary styptics, like the actual cautery, might produce a slough, and therefore determined to try the effect of long exposure to air. No less than three hours were allowed to elapse from the commencement of the operation before the external wound was closed. During this period it became necessary repeatedly to empty the cavity of the pelvis of the blood that had collected. I endeavoured at first to do this by suction through a syringe, but its canal soon became clogged by coagula. A silver spoon was for a while substituted, but it finally became necessary to fall back upon sponges, which I had hoped to avoid, because they are thought by many to have an especially irritative and detrimental action upon the tissues of the pelvis. It will be seen, however, that no such injurious effect ensued. The incision was closed by the insertion of five wire sutures, passing through the peritoneum. No superficial sutures were employed, nor was adhesive plaster, or any other dressing, resorted to throughout the whole after-treatment, the abdominal integument being allowed to remain perfectly nude, only being protected from the bed-clothes by an appropriate wooden frame.

During the operation, the pulse had several times flagged somewhat, but the ether was continuously administered to the extent of two and a half pounds.

A few drachms of brandy and water were now cautiously administered, and henceforth, with the exception of a pretty full diet, and the constant employment of quinia and the muriate of iron, the treatment was strictly expectant. The diet was, for the first day, nothing but ice; for a day or two subsequently, flour porridge with milk, or milk gruel, repeatedly given. From this point, greater latitude was allowed; twenty-four pounds of beef being consumed during the first month. From the outset the pulse hardly exceeded 100. There was no nausea or vomiting, but very little pain, but little flatulence, and scarcely any jactitation. Sleep was easily insured by the application of a wet compress over the eyes. The water was constantly drawn by catheter until the third week, to prevent any effort on the part of the patient, and on the fourth day, a suppository of half a grain of morphia was introduced into the rectum to prevent pain and to insure its quiet. The bowels were moved by an enema on the sixteenth day, and of themselves naturally on the eighteenth. For ten days after the operation, no motion whatever of the body was permitted; in spite of all the care that was taken, the urine was so freely secreted that the bladder overflowed itself several times, and in consequence, the sacrum

thus becoming wet, I discovered on the eleventh day a slight slough in this region, which was at once and with surprising rapidity healed by Brown-Sequard's and Chapman's alternate applications of heat and cold. Upon the third day, it was evident that adhesion of the lips of the abdominal wound had completely taken place; there had never been any gaping of it from the very beginning; on the tenth day the wires were untwisted, and on the thirteenth and fourteenth they were removed.

The convalescence was uninterrupted. On the fifth day Miss C. begged to be allowed to sit up. On the twenty-first she did so for the first time. On the twenty-eighth she was out of bed, and on the thirty-seventh she returned home to Malden.

Having an operation to perform in the neighbourhood, I called at her house ten days after, on the 9th of November, with Dr. Brown, of Stoneham, and found her perfectly well, getting upon and off the bed without assistance, walking about the house with comfort, and very happy. She had apparently gained many pounds in flesh. I now made the first vaginal examination since the operation, and found the cervix reduced to a mere nodule, button-shaped, and very much smaller than I expected to find; the explanation being, that upon lifting the heavy pelvic mass sufficiently to put on the clamp and ecraseur, the cervix had been so stretched upwards as to make the excision encroach much lower upon its substance than would otherwise have been possible.

From the date of the operation until October 11th, eighteen days subsequently, and twenty-six days after the last appearance of the catamenia, there was no discharge whatever from the vagina. There now occurred a sanguineous effusion, attended by feelings of lassitude, backache, etc. etc., lasting thirty hours, and being an evident attempt at the re-establishment of menstruation; a very curious circumstance, and of great physiological interest, when it is recollected that the uterus and both ovaries had been removed. The ensuing period has been passed without its recurrence.

The case above reported seems to have been one of the so-called fibro-cystic disease of the uterus, which has been described by West,[1] Kiwisch,[2] Paget,[3] and others. There is a difference of opinion as to whether the softened portions result, as seems to have been the case in the present instance, from the softening, breaking down, or degeneration of fibrous tumours occupying the abdomen, and therefore subject to less pressure than when in the pelvis, or whether the disease is entirely distinct and separate in character from ordinary fibrous tumour. Fibro-cystic disease is considered by obstetric writers, wrongly, I think, to be exceedingly rare. Graily Hewitt, for instance, in his recent work, says:—

"These cases are very rare, and it seems almost impossible to say how they are to be distinguished from cases of ovarian tumour during life, the physical signs and the symptoms so closely resembling those observed where composite tumours of the ovary are present."[4] And again, the disease "is so rare, that we cannot expect to be able at present to lay down general rules as to the treatment. It has never, so far as I am aware, been diagnosticated during life."[5]

[1] Lectures on Diseases of Women, London, 1858, p. 268.
[2] Klinische Vortrage, vol. i. p. 455.
[3] Lectures on Surgical Pathology, ii. p. 138.
[4] Diseases of Women, 1863, p. 403.
[5] Ibid., p. 575.

It was evidently present in Parkman's fatal case, to which I shall hereafter refer, in Sands', and in Buckingham's; in Peaslee's, the fluctuation was thought to be occasioned by dilatation of the uterine sinuses.

By the kindness of Prof. Calvin Ellis, to whom the tumour was submitted for examination, I am enabled to subjoin a careful scientific description. The tumour weighed in all thirty-seven pounds; the pelvic mass weighing eight, and the abdominal sixteen, after thirteen pints of fluid had been carefully drawn from it. It was exhibited to the Suffolk District Medical Society, on Sept. 30th, by Prof. J. B. S. Jackson, and its character and relations demonstrated. It is now in the museum of the Medical College.

"The mass of solid tumours was so irregular that it resembled no organ, but the presence of two well-marked ovaries with the corresponding Fallopian tubes, made it evident that a large part of the uterus had been removed, so deformed by the new growth, as to render it unrecognizable except by its appendages.

"In the right ovary was a recent corpus luteum and several smaller cysts. One of the latter contained blood, another a whitish fluid.

"On making an incision at the point where the mass was separated from the subjacent organ, a narrow cavity was opened about four inches in length, lined with mucous membrane, and smeared with bloody fluid. The lower part had a somewhat rugous appearance. A probe passed through one of the Fallopian tubes, and entered its upper extremity. It was evidently the cavity of the uterus itself lengthened and distorted by the new growths, mingled with which was more or less of the uterine tissue. There were about forty tumours ranging from two or three lines to perhaps four inches in diameter. They presented the usual appearance of fibroid growths of the uterus, though a number of considerable size were so filled with calcareous matter as to render the saw necessary for their division. Some were markedly pediculated.

"The large fluctuating mass attached to the broad ligament consisted of two principal tumours with others of smaller size springing from them, and many of them pediculated. They were externally quite vascular, like those connected with the uterus.

"All were of a fibrous character. The fluctuation was owing to two causes, serous infiltration and cystic formations. Some portions had an almost gelatinous appearance, owing to the amount of infiltration, and many others contained irregular cavities filled with clear serum, bloody fluid, or perhaps blood. Though apparently formed by the separation of the fibres of which the masses were composed, some of the cavities had smooth lining membranes closely resembling those of ordinary cysts.

"The above change was similar to that sometimes seen in well-marked fibrous tumours of the uterus, and this may have had such an origin, but it is more probable that it belonged to the broad ligament.

"This was the opinion of Dr. J. B. S. Jackson, who has a specimen showing a true fibrous tumour in the broad ligament."

It will be perceived that in operating upon the above case, I ventured to take just the opposite course to that lately laid down by an eminent operator, Spencer Wells, of London, as the rule to be pursued in fibro-cystic uterine disease.

"If the operation has been commenced," he says, "and the dark aspect of the tumour is observed, it would certainly be advisable not to do more than tap one or more of the largest cysts before examining attentively the connections between the uterus and the tumour. If these should prove to be very intimate, it will be the unpleasant duty of the surgeon to desist from any attempt to do more, and to close the wound as soon as possible."[1]

And I ventured to disregard the opinion of another noted London surgeon, Mr. Jonathan Hutchinson. In speaking of a case where "the tumour is an enormous one, reaching higher than the umbilicus, and distending the abdomen as if in the last week of pregnancy," the general health of the patient remaining tolerably good, Mr. Hutchinson remarks that "it would of course under any such circumstances be madness to think of attempting any surgical treatment."[2]

A hospital surgeon has since asked me if, before operating, I had any expectation of the disease which in reality presented itself, and if I ought not to attribute the woman's recovery wholly to chance. To the first of these questions I have endeavoured already to answer in speaking of the difficulty of an exact differential diagnosis in this case, and of the course we so deliberately pursued. By the other I am reminded of a similar question put to me by another hospital attendant, some ten years ago. I had reported to one of our medical societies (the Suffolk District) a case of advanced carcinoma uteri, where, all other hæmostatics failing, I had controlled hemorrhage and prolonged life for many months by the free use of the actual cautery, an agent which so many of us have seen in daily use in Europe, and which, for one, I have constantly resorted to since the time referred to. At that time, however, it was considered too heroic practice for Boston, and the gentleman to whom I have alluded innocently asked if the case was reported as one of escape from accidentally perforating the peritoneum by the instrument employed.

I do not believe that my success in the present operation was wholly owing to chance, for there were certain elements involved which I am accustomed to value. Had the patient died, I might have been blamed for wilfully incurring the risks I have already shown to be generally thought inevitable for extirpation of the uterus when *in situ*. On the other hand, some of these risks, provided we properly understand them, are, to a great extent, within our control.

But first let me state briefly the statistics, so far as they are accessible, of the operations hitherto performed.[3] I have to return my thanks to

[1] Diseases of the Ovaries, London, 1865, vol. i. p. 362.

[2] Report on the Enucleative Treatment of Uterine Fibrous Tumours, Medical Times and Gazette, 1857, p. 170.

[3] Spencer Wells' Uterine Cases, so unsuccessful, just published in the first volume of his work on *Diseases of the Ovaries*, were, with a single exception hereafter tabulated, merely removal of outgrowths by excision or enucleation, and not of the uterus itself.

Drs. Clay, Kimball, Burnham, and Buckingham for unpublished information concerning their cases.

	Operations.	Deaths.
Clay[1]	3	2
Heath[2]	1	1
Burnham[3]	9	7
Kimball[4]	3	2
Parkman[5]	1	1
Peaslee[6]	1	1
Koeberle[7]	1	0
Baker Brown[8]	1	1
Wells[9]	1	1
Sands[10]	1	1
Buckingham[11]	1	1
Storer	1	0
	24	18

Percentage of recoveries 1 in 4, or 25 per cent.

I also append the causes of death, so far as I have been able to ascertain them.

	Fatal Cases.	Causes of Death.				
		Shock.	Hemorrhage.		Inflammation.	Accident.
			Primary.	Secondary.		
Clay,	2	. . . . .	1 (2 hours)	. . . .	. . . .	1 (13th day)
Heath,	1	1 (17 hours)				
Burnham,	7	3 { 1st day, 1st day, 2d day }	. . . .	. . . .	4 { 3d day, 4th day, 4th day, 5th day }	
Kimball,	2	. . . .	. . . .	1 (3d day)	1 (10th day)	
Parkman,	1	. . . .	. . . .	1 (12 hours)		
Peaslee,	1	. . . .	. . . .	. . . .	1 (8th day)	
Baker Brown,	1	. . . .	. . . .	1 (2d day)		
Wells,	1	1 (4th day)				
Sands,	1		1			
Buckingham,	1	1 (1st day)				
	18	6	2	3	6	1

[1] Transactions of Obstetrical Society of London, vol. v., 1864, p. 66.

[2] London Med. Gazette; Boston Med. and Surg. Journ., Jan. 1844, p. 494.

[3] Nelson's Northern Lancet, Jan. 1854; Boston Med. and Surg. Journal, Oct. 1865, p. 214, and MS. letter.

[4] Boston Med. and Surg. Journ., May, 1855, p. 249.

[5] Am. Journ. Med. Sciences, April, 1848. [6] Ibid., Jan. 1856.

[7] Med. Times and Gazette, Feb. 1865. This is spoken of as Koeberle's sixth case, but it is merely the sixth of his abdominal sections, and apparently his only case of extirpation of the uterus. He has lately published a work on the removal of fibrous tumours of the uterus, which as yet I have been unable to obtain.

[8] Transactions of the Obstetrical Society of London, vol. vi., 1865; Am. Journ. of the Med. Sciences, Oct. 1865, p. 484.

[9] Diseases of the Ovaries, vol. i. p. 350.

[10] New York Medical Journal, Dec. 1865, p. 188.

[11] Operation performed at City Hospital of Boston. Case as yet unpublished.

Or, to present these causes more minutely :—

	Causes of Death.	Ultimate Cause.
1. Clay,	Hemorrhage, in 2 hours.	Divided by knife, not by ecraseur.
2. "	Accident, 13th day.	Dropped upon floor by the nurse.
3. Heath,	Shock, in 17 hours.	Divided by knife, not by ecraseur.
4. Burnham,	" in 1 hour.	Operation long delayed.
5. "	" in 4 hours.	" " "
6. "	" 2d day.	" " "
7. "	Peritonitis, 3d day.	" " "
8. "	" 4th day.	" " "
9. "	" "	" " "
10. "	" 5th day.	" " "
11. Kimball,	Slipping of ligature and hemorrhage, on 3d day.	Divided by knife, not by ecraseur.
12. "	Inflammation, on 10th day.	No apparent prophylaxis.
13. Parkman,	Slipping of ligature and hemorrhage, in 12 hours.	Divided by knife, not by ecraseur.
14. Peaslee,	Peritonitis, on 8th day.	Long incision. Strangulation of intestine, protrusion between the sutures, and gangrene.
15. Baker Brown,	Slipping of ligature and hemorrhage, on 2d day.	Divided by knife, not by ecraseur.
16. Wells,	Shock, on 4th day.	Ecraseur bent, clamp broke, and "copious hemorrhage from very large vessels."
17. Sands,	Hemorrhage, immediately.	Divided by knife, not by ecraseur.
18. Buckingham,	Shock, on 1st day.	" " "

In several of the above cases, moreover, chloroform was given, which, for the ordinary purposes of surgery, while it lessens or annuls the shock from pain, is, of itself, undoubtedly attended by a certain amount of depressing action of which sulphuric ether is innocent. In allowing this fact, I make no recantation of my well-known preference for chloroform in midwifery; for I still believe that it is here, when properly exhibited, far superior to ether and perfectly safe, for reasons that I stated in my communication to the Massachusetts Medical Society at its annual meeting in 1863.[1]

It will be perceived from the above statement of the causation of the fatal cases, that in all of them the fatal result might apparently have been prevented. In some of these operations, the uterine character of the disease has hardly been suspected until the abdomen had been opened; in others, its completion was rendered necessary from hemorrhage consequent upon an attempt at paracentesis. Compulsory operations, or those that originally are unintended by the surgeon, are seldom performed as calmly or carefully as those to which he has made up his mind.

The dates at which the operations, successful and unsuccessful, were performed are as follows :—

[1] Boston Med. and Surg. Journ., Oct. 1863, p. 249. Eutokia, The Employment of Anæsthetics in Childbirth, Boston, 1863.

1.	Clay,	Aug. 1843.	Fatal.
2.	Heath,	Nov. "	"
3.	Clay,	Jan. 1844.	"
4.	Parkman,	" 1848.	"
5.	Burnham,	June, 1853.	Successful.
6.	Kimball,	Sept. "	"
7.	Peaslee,	" "	Fatal.
8.	Kimball,	Date not given, but prior to 1863.	"
9.	"	" " " "	"
10.	Burnham,	" " " "	"
11.	"	" " " "	"
12.	"	" " " "	"
13.	"	" " " "	"
14.	"	" " " "	"
15.	"	" " " "	"
16.	"	" " " "	"
17.	Wells,	Oct. 1861.	"
18.	Clay,	Jan. 1863.	Successful.
19.	Koeberle,	April, "	"
20.	Baker Brown,	1864.	Fatal.
21.	Burnham,	Sept. 1864.	Successful.
22.	Sands,	June, 1865.	Fatal.
23.	Buckingham,	" "	"
24.	Storer,	Sept. "	Successful.

From the above it appears that, prior to 1863, there had been 17 operations and 15 deaths, the mortality being 88 per cent.; whereas, at the present date, there have been 24 operations and but 18 deaths, the mortality being reduced to 75 per cent. It must not be forgotten that, of the last seven operations, four, or 57 per cent., have been successful.[1]

The dates of the successful operations are as follows:—

1. Burnham . . .	June, 1853.	4. Koeberle	April, 1863.
2. Kimball	Sept. "	5. Burnham . . .	Sept. 1864.
3. Clay	Jan. 1863.	6. Storer	" 1865.

Four out of the six, or two-thirds of the successful operations are American, and of these four, all of them have been performed in New England—one in Connecticut, one in Rhode Island, and two in Massachusetts.

The size of the mass removed in the successful cases is as follows:—

Burnham	8 and 16 pounds.
Kimball	"Not exceeding 10 pounds."[2]
Clay	11 pounds.
Koeberle	Not stated, but apparently not very large.
Storer	37 pounds.

It would have seemed, from the earliest of the above statistics, that the operation ought hardly to be approved, were it not remembered that the disease, if left to itself, usually sooner or later proves fatal. Even Burnham, who, by reporting two cases of success, has taken the lead in this direction, seems to have become discouraged by his own large percentage of mortality.

[1] Reliance must never be placed on statistics based promiscuously on varying methods of practice. It is the result under the best treatment that should settle the question of an operation.

[2] MS. Letter.

In reporting his first case, which was published as the "removal of an *ovarian* tumour," he had remarked: "Although this case terminated favourably, I would not easily be induced to make another attempt to extirpate the uterus and ovaries, or even to remove the uterus under almost any condition; and the operation should never be attempted without due consideration of the consequences of submitting a patient to such formidable risk."[1] In his subsequent publication, some six weeks ago, he says:—

"I have declined, for a number of years, to operate on fibrous tumours, except in a single case. In my first operations I attempted to remove these, but generally gave them up, after exploring the parts, as too dangerous to complete. I cannot now recommend the removal of fibrous enlargements of the uterus, and all the cases I have seen involve the uterus in their growth."[2]

"It may be remarked," Dr. Burnham writes to me, "that all my cases were undertaken as a *dernier resort*, and in general all the patients were much reduced by long suffering and impairment of vital function, to which cause I think that the great mortality attending this class of operations may be attributed."

I hope now to show that other dangers, as well as that here referred to, are in great measure and generally within our control, and that the proceeding thought necessary in many other cases, as in that of Dr. Deane, of Greenfield,[3] and in four communicated to me by Dr. Burnham from his own practice, where the operation begun has been desisted from, through a belief in its impracticability, may hereafter be avoided. The mere fact that patients generally recover after such exploratory incisions is of little satisfaction, provided the disease itself still remains.[4]

[1] Worcester Journal of Medicine, Feb. 1854, p. 47.

[2] Boston Medical and Surgical Journal, October, 1865, p. 214.

[3] Boston Medical and Surgical Journal, 1848, vol. xxxix. p. 221.

[4] With regard generally to a more frequent resort to exploratory incisions than now generally obtains, I cannot express myself too favourably, and I believe that upon this point I express the opinion of the best ovariotomists. There are some pressing cases, where it is absolutely impossible to be positively certain as to the existence of a tumour, let alone its differential diagnosis, even if anæsthesia has been employed. The fact that, upon incision, no tumour has been found in some such cases, has been made altogether too much of as an argument against section. As well might it be said that the cavity of the uterus is never to be explored by sponge tents, because in many cases of uterine hemorrhage where they have been employed, only negative evidence has been attained. Exploratory incisions, just as with operations for hernia, are attended with but little danger; they heal readily except where ascites is present, and even here much more frequently than would be expected. They might in many instances indicate the existence of curable diseases, where the patient must otherwise, for want of an exact diagnosis, in no other way possible, be allowed to die. In performing the section, for exploration or for removals, I differ from most operators, in that I prefer making it in the track of a rectus muscle rather than in the linea alba, being thus much more certain, from the nature of the tissue divided, of a primary reunion.

"The dangers attendant upon the removal of so important an organ as the uterus," says Churchill, "are the following, and they cannot be *lightly* estimated:—

"1. The first danger is from the shock given to the constitution, which may even prove fatal. Dr. Blundell thinks that this is felt the most when the supports of the uterus are divided, and when the mass is extracted from the pelvis. The shock, so severe when the uterus is *in situ*, is very slight when the uterus has been displaced by inversion.

"2. Dangerous or fatal hemorrhage may occur after the extirpation of the uterus *in situ*," and may be primary or secondary.

"3. The parts within the pelvis or the peritoneum may be attacked by inflammation, compromising the life of the patient."[1]

That is to say, the dangers are chiefly from pure nervous shock; hemorrhage, immediate or secondary, from the slipping of a ligature or ulcerative opening of vessels; excessive reaction, or inflammation subsequently lighted up, generally by appreciable causes.

Can any of these sources of danger be counteracted, or, what is far better, averted?—for here, as everywhere in our art, the prevention of evil is far better than its cure. I think I can show that each of the elements referred to may be guarded against.

I. The shock of any severe or capital operation, and pelvic operations are particularly severe in proportion to their extent, is seldom uncomplicated; making, of course, due allowance for the general constitutional condition of the patient previous to the operation, it is generally found owing to several causes.

The causes referred to are the following—producing alone, or in combination with each other, an impression, direct or by reflexion, upon the cerebro-spinal system, by which its action is for the moment or permanently paralyzed; death occurring, where the case proves fatal and there still remains a sufficiency of blood for the heart to propel, from asthenia, the heart ceasing to act for want of power:—

1. Excessive pain, perhaps accompanied by
2. Excessive fear or anxiety.
3. Hemorrhage, not necessarily, however, excessive.
4. Injury to a nerve or nerves, as by division or inclusion in a ligature, and probably in proportion to the suddenness or rapidity of its infliction.
5. The removal of abnormal pressure upon nerve or nerves, or upon nerve-substance, whether by solid or by fluid pressure, as by excited or excessive vascularity, and, also, probably in proportion to the rapidity of such removal.
6. And we add, also, to these, as a predisposing cause, the existence of a previous low degree of general vitality, whether as anæmia or toxæmia.

[1] Diseases of Women, p. 318.

Now each and every one of these elements of danger may be provided against beforehand.

In the first place, the necessity of endeavouring to correct or to improve an impoverished or poisoned condition of the blood, so far as possible and wherever possible, before subjecting any patient to the dangers of a capital operation, it would seem, must be recognized by every surgeon. Would that it always were!

Secondly. The action, at times so evident and so deadly, of pain and of present dread or alarm may, also, be always counteracted. Would, again, that they always were!—for here, also, might the ratios of mortality be lessened. Under anæsthesia, pain and fear are alike placed in abeyance. The patient falls asleep in hope, and wakes in joy at its fulfilment. There seems, moreover, a direct supporting effect upon the nervous system from the anæsthetic—by which I mean sulphuric ether, and for every operation save the conduct of childbed, as I have already stated, where I believe chloroform to be specially indicated. It is, of course, to be presumed that the agent is pure and is properly administered, under which conditions it would seem that the nervous system does in reality become peculiarly tolerant of shock.

Thirdly. Hemorrhage, necessarily so profuse in former days when the knife alone could be employed, is reduced to a minimum by the use of the ecraseur. Ligature of a cervix stump, just as that of an ovarian pedicle, no matter how skilfully or tightly adjusted, can by no means insure against an alarming loss of blood at or immediately after excision. Its employment affords no guarantee against the reopening of a bleeding orifice by the knot slipping, or by its cutting by ulceration into a vascular canal. These risks, thanks to Chassaignac and to the great Scotch champion of hæmostasis by pressure, whether by needle or metallic ligature, may now every one of them be escaped.

Fourthly. The possibility and the advantage of slowly separating the organic connections of a tumour have to a certain extent, though but to a certain extent, been already recognized in surgery. In the case of intra-uterine and vaginal polypi, of inversion and the like, the ligature has been mainly preferred to the knife; the chief advantage claimed for the latter being, that where the sources of its consequent hemorrhage could readily be reached, the risks dependent upon purulent and septic discharges, liable by absorption to produce pyæmia, from an ulcerating ligature, were avoided. Now, with the ecraseur we can destroy continuity as slowly as we please, consistently with a reasonable submittal of our patient to other sources of danger—as, for instance, to prolonged exposure of the peritoneal membrane to the air and other external agencies. Upon this point I cannot help differing from my esteemed and eminent friend, Dr. Walter Channing, who, from having seen it used in my own hands for dividing a broad ovarian pedicle, has incontinently condemned the

ecraseur for any purpose whatever,[1] and without any personal experience of his own.

In the case referred to, the fatal result from peritonitis on the fifth day was clearly owing to my having listened to the advice of others, contrary to my own convictions, and having used silk ligatures brought out externally, instead of, as here, metallic ones dropped into the pelvis, and there left *in situ*.

By slowly tightening the chain of the ecraseur, we not only lessen the chances of hemorrhage, by rendering the wound more of a contused than an incised one, we not only gradually divide any nerve-fibres that may be included, and gradually interrupt the to-and-fro nerve-currents that are in transmission, but we as gradually interrupt the current of the arterial circulation, and prevent any sudden backward pressure of the fluid column upon the heart—a pressure that must be present in every case of sudden interruption of the circulation, more especially from laceration or contusion, where hemorrhage does not occur, and that is evidenced, grossly, by the click heard, the bursting sometimes seen, of service-pipes in which the current of water is suddenly checked. The elasticity of the arterial walls is not sufficient wholly to neutralize this action, and its occurrence must certainly tend to increase the dangers from shock.

Fifthly, and finally. I am not sure that it may not be good practice to allow the tumour, detached, to remain for a moment or two *in situ*, as was done accidentally in the case now reported. The mass was so heavy, much more so than would have been anticipated from its size, that I remained under the impression that division had not been effected after the loop of the ecraseur had entirely passed through its groove, and the screw was turned until the chain was snapped at its distal extremity. The tumour was then removed, but its pressure was not taken from the surrounding tissues until some little time after all organic connection with them had been severed.

So much, then, for the first of these possible prophylactics of danger in uterine extirpation, when *in situ*, as arising from shock.

II. As an incidental element in the production of shock, I have already considered some of the features of hemorrhage, as controllable by anticipation. There are others. Not merely may the chance of hemorrhage during the operation, or of non-puerperal flooding, as it might justly be called, be prevented, but its recurrence at a subsequent period, where, the abdomen being closed, and its whole extent taking the place of the absent uterine cavity, the risks of concealed hemorrhage become so fearful. I need merely refer to the magnificent work upon acupressure just published by Prof. Simpson, the last, the boldest, and the best of his contributions to science and practical art, if this may be said of suggestions

[1] Boston Medical and Surgical Journal, January, 1865, p. 494.

and discoveries "each of which were worth a lifetime to have made;"[1] its perusal will convince the most skeptical, of what every man must acknowledge who tests the question in practice, that a safer way of preventing hemorrhage than by silk or organic ligature is by metallic pressure, just as metallic sutures are more efficient than the others in insuring the great end of all surgery, a union by first intention.

III. The third of the dangers so tersely enumerated by Churchill is that from inflammation, and this, it will be found, may be as easily guarded against as those already considered.

A certain proportion of the cases of uterine extirpation have died during the first reaction, and in consequence of its severity; another class from subsequent excitement or depression of the circulation generally, from whatever cause; and still a third, from a local excess of circulatory action or local inflammation, also established by a variety of causes. Clay has attempted to reduce these risks, similarly obtaining in ovariotomy, to a formula, by recognizing the existence of critical days. Thus he says, when speaking generally of abdominal sections, of which he has now made no less than one hundred and sixteen—

"If the patient does not sink immediately from shock, that is, within the first twenty-four hours after operation, the first critical day will be the third, and the cause of fatality, if the case so terminates, will be unsubdued inflammation. The next critical period is the sixth day, when I first apprehend danger after the subsidence of peritoneal inflammation, in the elder class of females particularly, from prostration; should, however, the case be young, this termination may be deferred to the ninth, or next critical day, which is the usual period of prostration for younger females. If the patient passes this point, it assumes a far more favourable prospect for recovery, and the critical days become of less consequence; nevertheless, I have seen the twelfth usher in some very troublesome symptoms, consequent on the loosening or entirely throwing off the ligatures, and in one or two cases I have seen about this period a secondary attack of peritoneal inflammation, which, if not actively and carefully managed, or foreseen and prevented, may wreck the patient."[2]

"If not foreseen and prevented," says this great authority. The words are well worth remembering. The preparation of the patient for the operation, by a previous careful course of medical treatment, is, says the same writer, "of immense importance, and will greatly facilitate the movements of the operator when called upon."[3]

This preliminary or prophylactic preparation is of a threefold character: To raise the general tone of the system; to prevent any tendency to toxæmia, or to counteract such if already present; and, while removing any source of irritation from the digestive organs, to procure a condition therein of healthy quiet. The first and second of these indications I find

[1] Simpson's Obstetric Works, Preface to American edition.

[2] Transactions of the Obstetrical Society of London, vol. v., 1864, p. 63.

[3] Handbook of Obstetric Surgery, 1856, p. 176. The same necessity has been insisted upon by Dr. Clay in almost every one of his numerous papers upon abdominal section.

to be best fulfilled by the use of the muriate of iron, given not merely as a tonic, but, as has been shown by Simpson in his admirable essays upon the identity of puerperal and surgical fever,[1] as a special depurant. The third indication is met, better perhaps than in any other mode, by the exhibition of ox-gall, which not only removes by its solvent action any scybalous masses, even if adherent to the intestinal coat, and prevents flatus, so often initiative of a peritonitic attack, but seems in cases of hepatic disease, functional or organic, to take the place, in some respects, of the natural secretion. The advantage of the ox-gall treatment preliminarily to any severe pelvic operations has been often insisted upon by Dr. Clay. I have myself more than once called the attention of the profession to its advantages,[2] and have long been in the habit of resorting to it in practice. In addition to the other good effects from it, I am inclined to think that under the previous use of ox-gall the intestines are less likely to escape or to force themselves through an abdominal incision.

I have implied that some of the various secondary causes liable to excite inflammation may be prevented. Such is, for instance, the neglect to which I have just referred, of procuring a thoroughly soluble and healthy condition of the bowels prior to the operation. It is on many accounts advisable, indeed necessary, to prevent any peristaltic action of the intestines for many days. If they contain excreta, particularly if these are ancient, their passage may be accompanied by imminent risk; if, on the other hand, such are still longer retained under the use of opium, equal or greater dangers may occur. The processes of decomposition, in abeyance while the pelvic circulation was as yet uninterfered with, may suddenly be set up, and every morsel of feces act as a nidus of destructive or toxæmic force. One need only read the records of cases that have been reported, to be convinced that just upon these points has life depended, and that from their neglect more than one of the successful cases came very near being fatal. Take, for instance, Burnham's first, where the condition of the patient for some days subsequent to the operation was truly terrible. Here, on the third day, there was "uneasiness of the bowels;" on the sixth they were so "distended as to tear open the adhesions, which had been firm for three days, suppuration being abundant and offensive from the wound and vagina." On the seventh day "all the symptoms indicated rapid dissolution." On the eighth day "the patient had a copious evacuation of dark, impacted scybala, which must have remained in the intestinal canal for many days, notwithstanding there had been what seemed to be free evacuations from the entire extent of the canal several times since the operation;" these discharges being of themselves to be depre-

[1] Clinical Lectures on Diseases of Women, p. 176.

[2] As, for instance, in my paper upon the Surgical Treatment of Amenorrhœa, Amer. Journ. of the Med. Sci., Jan. 1864.

cated immediately after so severe a shock. "Much prostration attended the evacuations, the patient being kept from sinking only by the free use of stimulants."[1]

The bladder must, of course, be kept constantly voided, and for many days artificially. There is a diversity of opinion as to whether a self-retaining catheter, as that of Sims, or the frequent introduction of the ordinary form, is best.[2] When the flow of urine becomes more than usually copious, this being an evidence that the kidneys have recovered from any state of extreme congestion, and as emunctories of excretory matter are actively at work, we may probably consider it as "always a favourable sign."[3]

If the woman has not yet passed the climacteric, which to have done would so far be in her favour, it is necessary to take the time of occurrence of the menstrual molimen into consideration. At such time the tendencies of the circulation are towards the organs of the pelvis, which are then more or less congested, and therefore more prone than usual, upon injury, to the occurrence of hemorrhage.

The best time for operation is probably very shortly after the catamenia have ceased, and this point, it will have been noticed, was acted upon in the case now reported. In this connection, I would call attention to the remarkable fact that an effort at menstruation, attended with slight hemorrhagic flow for the greater part of a day and a half, occurred nearly at the regular period after the last menstruation prior to the operation; not merely the uterus, but the ovaries, which are undoubtedly the initiative source of the menstrual effort, being now absent. The occurrence of this discharge purely from the tip of the cervix may throw some light upon that occurring from a similar seat in some instances of pregnancy; its ultimate causation in the present instance must be explained as the final oscillation of a pendulum, from which all motive force had been withdrawn.

Speaking, as I have done, of the prophylaxis by which we may reasonably hope to diminish the mortality of abdominal section, and its thus far most dangerous accompaniment, extirpation of the uterus, I should do wrong did I not express my opinion of certain points during section, hitherto deemed of the first importance. They are the following. It will be noticed that upon these points I differ from many operators:—

1. The temperature of the atmosphere.
2. The length of the incision.
3. The treatment of the stump, or the pedicle, if ovarian.
4. The closure of the external wound.

[1] Worcester Journal of Medicine, Feb. 1854, p. 45.

[2] See discussion upon this point at Obstetrical Society of London in 1863, Transactions, vol. v. p. 35.

[3] Clay: Transactions of Obstetrical Society of London, vol. v., 1864, p. 71.

I have already incidentally mentioned other points of very great interest. To these and to still others I will briefly refer.

1. The differential diagnosis once made, or decided to be impossible, the question of operation must turn upon the patient's history, her present condition, her own wish, and the surgeon's courage.

a. If the surgeon is not ready for *any* complication that the section may disclose, he is unfit *ever* to operate.

b. The wish of the patient must be mainly governed by her attendant's decision. An invalid, torn by contending emotions, and swayed by the conflicting advice of ignorant friends, cannot judge wisely for herself. The surgeon, the accoucheur, the physician have daily, and ought, to take the responsibilities of such decision.

c. Is death imminent without the operation, the chance of life it affords should be given; it being recollected that the more the vital powers have been undermined by delay, the less has this chance become.

d. If the tumour has rapidly become developed, while on the one hand the probabilities of the disease being malignant may be increased, so has the necessity for rendering immediate aid.

2. The diagnosis of malignant disease, of a multilocular cyst, of uterine complication, or of adhesions, is, under the circumstances now described, no necessary bar to the operation. Every surgeon of course desires that his cases should be promising, and free from complication; he dislikes the odium of an unsuccessful attempt, and accordingly is prone to "select" them. Thus Clay has been consulted for "sixteen hundred cases" of ovarian disease prior to 1863, and has operated but one hundred and sixteen times;[1] Baker Brown, in 1863, "has examined many hundreds, he might say thousands of cases,"[2] and in 1861 had performed section but in nine, then preferring less certain methods of treatment.[3] And yet, of the cases where the operation has been completed, perhaps as large a proportion of the most unpromising have succeeded as of the simple and uncomplicated ones; probably because of the more careful after-treatment that was supposed necessary. The excess of care in selecting cases to which I have referred may be well for the operator's reputation, but it is not always for the patient's advantage. Patients are frequently pronounced by physicians to be incurable, who are perfectly legitimate sub-

[1] Trans. of Obstetrical Society of London, v. p. 64. [2] Ibid., p. 73.

[3] Surgical Diseases of Women. The extent of the prevalent fear lest a case prove uterine, almost exceeds belief. During the past year I have received from New Hampshire by the kindness of Dr. McIntire, of Concord, an unilocular ovarian cyst, well pediculated, and without adhesions, the uterus being perfectly healthy, removed post mortem from a patient upon whom an operation had not only been advised against, but prevented, by a noted operator of my own State, on the ground that the case was one of undoubted uterine disease. I could mention similar cases, but they are probably familiar to most of my readers.

jects for operation. Abdominal section is still in its infancy, and objections formerly considered unsurmountable are now in practice found trivial. I must here quote a word from the last published work upon the subject, that of the present year, by Spencer Wells, to enter my protest against the too timid selection of cases he would inculcate. "I cannot," says Mr. Wells, "send forth this volume without a word of caution. A discovery which has triumphed over opposition of all kinds, honest and scientific, prejudiced and ignorant, may still be ruined by the support of rash, inconsistent, thoughtless partisans, whose failures do not reflect so much discredit on themselves as on the operation which they have badly performed in unsuitable cases. Indications are not wanting that ovariotomy has entered upon this phase of progress; and there is reason to fear that judicious men may be influenced by the outcry of the foolish, and that a triumph of surgery which has been won by great labour and care, may be arrested before it is complete, may even be converted into temporary defeat, by the indiscriminate support of zealous, but injudicious advocates."[1] Now, several of Mr. Wells' greatest successes have been cases where the diagnosis was doubtful; and, on the other hand, he is very averse to operating, or to completing an operation, where extensive adhesions are found to exist. Clay, of Manchester, on the contrary, believes that adhesions, however extensive, are of minor importance, unless deep in the pelvis. "When I first commenced my operations," he says, "I was inclined to think more seriously of adhesions than I do now; in fact, many cases were rejected at that time as unfit for operation, which, if now presented to me, I should not hesitate to operate on. Some of the worst cases of adhesion I ever had, recovered as well and as rapidly as any other."[2] So far as the relative success of these operators is concerned, Spencer Wells, fearing adhesions, has performed abdominal section for ovarian and uterine disease (1865) 130 times, with 80 recoveries,[3] or 61 per cent.; while Clay, disregarding adhesions, has performed this operation for ovarian and uterine disease (1863) 116 times, with 80 recoveries,[4] or 68 per cent.; a balance of 7 per cent. in favor of the bolder practice.

3. An operation determined on, the less previous manipulation the better. There is good reason to believe that many a case has been lost by merely allowing the abdomen to be unnecessarily kneaded by an interested or inquisitive circle of medical friends. Such manipulation would seem the surest possible way to predispose to an attack of peritonitis, were this desired.

4. The patient should have been prepared by previous medical prophylaxis.

5. She should have become accustomed to what I have called the local

[1] Loc. cit., p. xiv.
[2] Obstetric Surgery, p. 162.
[3] Loc. cit.
[4] Trans. Obstetrical Society of London, vol. v. 1864.

climate in which she is to remain after the operation. That is to say, a city patient transferred to the country should not be operated upon until some weeks of residence had elapsed, the same rule applying to a country patient transferred to the city. Of course the atmosphere of a private house is, all other things being equal, preferable to that of the best ventilated hospital; to say nothing of the chance therein of peritonitic infection from erysipelas or surgical fever. It may be said, on the other hand, in view of the immense importance of the after-treatment, that the best nurses are to be found in hospital wards; in emergencies, however, they can often be transferred from thence, should this be thought advisable.

6. The temperature of the room at the time of operation has been much insisted upon. For instance, my friend Prof. Elliot, of New York, in a late ovarian section at Bellevue Hospital, kept himself for a full hour, with a company of no less than twenty-seven medical men, in an atmosphere heated to between 90° and 100° Fahrenheit.[1] My own impression is that one of from 65° to 70° answers every practical purpose, and is much less debilitating both to operator and to patient.

7. That an anæsthetic should be given, I need hardly remark. This would of course be done, as much for the operator's convenience as for the patient's comfort. Not only, however, is suffering thus annulled, but there is reason to believe that, just as obtains in midwifery, the percentage of recoveries may be proportionately increased. I am inclined to think, moreover, and the remark applies to many other surgical operations, that it may be of advantage to keep the patient insensible for some time after the operation has been completed. In the case now reported, the anæsthesia was steadily continued for more than three hours. Much depends upon the method of administering the ether, for I believe that with attention to this point, the troublesome syncope, nausea, and vomiting, that so frequently ensue, and in the latter instance increase the risk of protrusion of the intestines, may be in great measure prevented, as in the present case.

8. The length of the incision has varied between extremes, each having its champions. My own practice is to make as short a one as seems possible to answer my purpose. In the present instance, the wound was but five and a half inches, extending from the umbilicus downwards, but not reaching the pubes, and yet it was fully sufficient for the extraction by a little taxis, of the enormous mass, without materially lessening its bulk. When the opening is extended towards the sternum, it is almost impossible to prevent the intestines from protruding during the operation, and to keep up their vital heat. I am satisfied that a frequent cause of subsequent peritonitis is from the excessive manipulation and chill to which the viscera are necessarily subjected in cases of the long incision; and

[1] N. Y. Med. Jour., Sept. 1865, p. 409.

that in other instances, the efforts at their retention or replacement are productive of the entanglement of loops upon each other and their subsequent strangulation; while in still others, like Prof. Peaslee's case of uterine extirpation, the fatal result is consequent upon an escape of the intestines between the sutures of the wound, and thereon strangulation and subsequent peritonitis or gangrene. By the short incision there is also a less exposure to the atmospheric air of those of the abdominal contents that are not protruded, and therefore somewhat less risk of shock or inflammatory action.

9. Some surgeons, particularly my friend Dr. Peaslee, have thought they found advantage in the employment of an artificial serum, with which to keep the viscera more thoroughly protected from external causes. I believe, however, that it is hardly necessary. Far better is it to direct attention to those external causes whose presence can be wholly avoided; as one of which, the wearing of rough signet rings, which in two instances I have seen introduced into the cavities of both abdomen and pelvis.

10. To the comparative non-importance of adhesions I have already alluded. Where they are absent, it is of course an advantage. Where present, they may be torn (best), cut by ecraseur (next best), or by the clean incision. In the latter instance, only, is there much risk of hemorrhage; to prevent or arrest which, if torsion is insufficient, more direct means become necessary, but it should be by acupressure or metallic ligature, and not by those of organic material.

11. The same remarks apply to division of the pedicle, if ovarian, and of the cervix, if uterine. Many of the deaths after these operations have been from slipping of ligatures, or from septæmia in consequence of arterial sloughs,[1] or from irritation produced by the presence, long continued or temporary, of organic sutures or ligating threads.[2] In Spencer Wells' fatal case of uterine extirpation, the stem of the ecraseur bent and it became useless, a clamp was applied and it broke, and there was copious and alarming hemorrhage; the case showing the necessity of having duplicate instruments of reliable construction. In one of Kimball's uterine cases, his third and last, death was occasioned by the slipping of a ligature on the third day, and consequent fatal hemorrhage.[3] The same occurred on the second day in Baker Brown's late unsuccessful case.[4] In Kimball's successful case, the ligatures were brought through the external wound and there remained eight months after, "causing considerable

[1] "Minute Morsels of Dead Flesh in the Raw Cavities or upon the Raw Sides of Large Wounds." Simpson's Acupressure, p. 43.

[2] The Law of Non-Tolerance of Living Tissues for the Presence of Dead Foreign Organic Bodies. Ibid., p. 478.

[3] Boston Med. and Surg. Jour., vol. lii. p. 254.

[4] Transactions of London Obstet. Society, vol. vi., 1865.

annoyance from local irritation."[1] In Parkman's unsuccessful case at the Massachusetts General Hospital, death occurred in twelve hours from contraction of the tissues inclosed in the ligatures and consequent hemorrhage, "although the ligatures were drawn as tightly as could be done by a strong man."[2]

It is futile to rely upon ligatures merely, whether passed through or merely around the pedicle, or to attempt to prevent hemorrhage, as Baker Brown has proposed since his late failure, and as has been done by others, by dividing the tissues by the actual cautery, which by causing a slough would only predispose to secondary hemorrhage or to peritonitis. The ecraseur enables us to avoid these risks, and to drop the pedicle, whether ovarian or uterine, back into its natural position in the cavity of the pelvis. In this manner we do not require the prolonged use of a clamp, so difficult often to apply, and by its traction almost insuring severe pain and excessive inflammatory action.

12. In extirpating the uterus, should the ovaries be also removed, provided they are healthy? I believe that it is better that they should. In two of Burnham's cases the ovaries are said to have been left; one of these women recovered, the other died. In Clay's successful case, but one of the ovaries is reported to have been removed. It is difficult to explain how this can have been done compatibly with the removal of the greater part of the uterus, without destroying so much of the remaining organic attachments of the ovaries as to cause their death, unless indeed adhesions had been previously formed between themselves and contiguous tissues. In some instances it would be impossible to operate without removing all the uterine appendages. In others, their being allowed to remain, supposing them to preserve their normal activity, might subject the patient till the time of the climacteric to all the annoyance of the menstrual molimen, without the relief to the disordered circulation afforded by the normal discharge.

I find that Koeberlé, in a recent publication, expresses a similar opinion:—

"The extirpation of the ovaries," he says, "which had already been rendered useless by the existence of the large fibroid, which necessarily prevented the normal evolution of pregnancy, has relieved the patient of her menstrual periods, and of all the inconveniences connected with them, as well as from the diseases which spring from the ovaries themselves."[3]

---

[1] Boston Med. and Surg. Jour., vol. lii. p. 253.

[2] Lyman, Non-Malignant Diseases of the Uterus, p. 75.

[3] De l'Ovariotomie, Paris, 1865, p. 92. The above statements are commented upon by a reviewer in the *Med. Times and Gazette*, for Feb. 1865, p. 209. "As these arguments," says the anonymous writer alluded to, "apply with equal force to the healthy female, we can only conclude that M. Koeberlé regards the whole sexual organization of the female as a mistake and a nuisance, which is to be removed at the earliest opportunity." Need I state that such criticism is as un-

13. In this operation, of all others, haste should be avoided. As many of the unsuccessful cases have perished from concealed hemorrhage, from vessels that at the time of the operation received or seemed to deserve no attention, as from a truly secondary flow in consequence of the slipping of a ligature or of an ulcerative opening of the vascular canals. I have already mentioned the methods by which these latter dangers can be prevented. In the present instance it was nearly, if not quite, three hours before the external wound was finally closed. After nearly a dozen large vessels had been closed by metallic ligatures, which it is my intention shall remain indefinitely in their present bed, and perhaps twice as many more had been secured by torsion, there remained a general sanguineous oozing from the sites of adhesion and the stump of the uterus, sufficient for a while rapidly to fill the cavity of the pelvis. This was finally overcome, so far as we could judge, by mere exposure of the wounded surfaces to the air. Theoretically, this course should have killed the patient; practically she had never a bad symptom.

14. The method of closing the wound is of no small value. I believe in metallic sutures, passed through the peritoneal membrane, by which means exact apposition can be secured; and by having no ligatures to bring through the wound, themselves a source of irritation, to serve as a track for pus, we also insure thorough closure. In the present case, I had complete union by first intention during the whole length of the wound; in this operation as elsewhere, of the greatest importance.

15. Of the dressings of the wound, I have also a word to say. I used *none*. There was not even a strip of sticking plaster between the deep sutures, nor a single superficial suture of any kind. There was not even a wet compress. The bed-clothes were kept away by a suitable wooden frame, and till some time after the sutures were removed, which was on the thirteenth and fourteenth days, nothing whatever was allowed to touch the abdomen of the patient.[1]

16. As in all surgery, everything depends upon the after-treatment. I believe in a full diet, as free as can be borne; and while we are governed in a measure by the state of the pulse, we can govern the circulation itself and so in a measure prevent threatened inflammatory action, by arterial sedatives, as veratrum viride, whose importance in surgical practice has as yet hardly been appreciated. The less opium that is given the better. If the patient has been under proper prophylactic treatment, the bowels will probably not be irritable. The occurrence of irritability may be further guarded against by an astringent diet, as here, where the main dependence was at first upon boiled flour and milk; should disturb-

founded as it is discourteous and illiberal, and yet by just such objections is it that the advance of medicine and surgery is often sought to be stayed.

[1] See Local Requisites for the Primary Union of Wounds. Simpson's Acupressure, p. 116.

ance take place, an opiate by rectum is far better than the same by mouth, and produces much less constitutional depression. The first attempt at a fecal discharge, even by enema, and the first recurrence of the time for the usual menstrual molimen, are of all others seasons for especial anxiety. These passed safely, and the patient will probably do well.

The operation, when successful, effects a radical cure. Kimball's case, operated upon more than ten years ago, is now, November 17, 1865, "in the enjoyment of perfect health, having been so ever since her recovery." Burnham's first patient, also dating from more than ten years, "continued well four years after the operation, since which time she has been lost sight of;" his second case "remains well at present," October 9, 1865, over a year. Clay's patient, nearly three years after, "is now, October 17, 1865, in excellent health."

In none of the successful cases on record did there exist such apparently insuperable objections to the performance of the operation as in that now reported, from the enormous size of the tumour, and the extent and great vascularity of the pelvic adhesions. In none was convalescence so rapid, in none such perfect immunity from the slightest interruption to its progress. The case goes upon record as evidence of the most positive character, of the truth of Prof. Simpson's views, laid down in his work upon acupressure, as to the local and general requisites for the primary union of wounds and the diminution of the present high mortality from surgical operations.

In conclusion, I shall best serve my friends in this department of practice if I now express my creed, as to abdominal sections, in a few succinct general formulæ.

1. Almost all ovarian tumours, a far greater majority than has been generally supposed, may be safely removed by abdominal section.

2. A certain proportion, as yet not ascertained, of uterine tumours, fibroid or fibro-cystic, may be safely removed in a similar manner.

3. A large proportion of the fatal instances of either operation referred to, may be traced to neglect of simple precautions, prophylactic, immediate or subsequent.

4. Others still, to the fact that the patient was allowed to linger without assistance, till she was already practically moribund, before the commencement of the operation; and

5. Still others, that the surgeon's heart failed him after the abdomen had been opened, and the operation was not completed.

I would not willingly be thought one of those "rash, inconsistent, or thoughtless partisans," by whom, it is Spencer Wells' opinion that abdominal sections may be brought into discredit. I have been compelled to see that the condemnations of uterine extirpation by abdominal section have been no more decided than those pronounced against ovariotomy

but a few years since,[1] and that operation has now become of very common occurrence; that the mortality of the earlier uterine extirpations was no greater than that in many isolated groups of the other operation; that a large proportion of the fatal cases might undoubtedly have recovered, had greater prophylactic and subsequent care been exercised; and that no less than four-sevenths of the later cases of the operation have been crowned with success. It is evident from these facts that the operation now described ought *a priori* to be viewed more kindly than were the first ovarian extirpations. In skilful hands, it is not impossible that it may yet attain as great and as deserved renown. In no department of surgery is the common proverb more constantly true, and I apply it to the life of an otherwise condemned patient, and not to the operator's reputation alone, "Nothing risked, nothing obtained." By leaving the case to nature, we must yield our patient to certain, and often to speedy death; by operating, on the contrary, we may lift her from the grave into which she is already descending, and insure for her a long, comfortable, and perfectly healthy life.

"Your duty and mine," says West, "is not to sit down in apathetic indifference, doing nothing, trying nothing, for a patient's cure, because her disease is one which hitherto has proved almost invariably mortal; but rather, patiently, carefully, with much mistrust of our own powers, much watchful scrutiny of our own motives, to apply ourselves to the trial of every means by which suffering may be mitigated or life prolonged. To this our common humanity prompts, our obligations as medical men compel us. It is to misinterpret both very grievously, if we not merely content ourselves with doing nothing, but take shelter under noisy censure of the conduct and uncharitable construction of the motives of those who read their duty differently."[2]