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Hysterectomy by Morcellement and the Vaginal Route in Pelvic Operations, in place of Laparotomy or the Abdominal Method.

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VAGINAL HYSTERECTOMY AND HYSTERECTOMY BY *MORCELLEMENT;* THE VAGINAL ROUTE IN PELVIC OPERATIONS IN PLACE OF LAPAROTOMY OR THE ABDOMINAL METHOD.

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The latest step in the rapid development of gynecic surgery has been the perfection of vaginal hysterectomy and the development and extension of this operation in its application to other than malignant conditions—in other words, the adaptation of the vaginal route to other pelvic operations which hitherto had always been performed by the abdominal method. This abandoning of the more distant and dangerous abdominal route, the operation of laparotomy or cœliotomy, in favor of the surgical ideal, the attack of the nearly approximated pelvic viscera by the *vaginal* route, is certainly correct in theory, and to judge by the admirable results achieved, successful in practice, a success which is due to the perfecting of surgical technique and antiseptic methods, a success which may well serve to exemplify the changes through which surgical methods and ideas have passed in this last decade of their highest development.

The proximity of the uterus and its appendages to the vaginal canal has naturally led to attempts to reach these organs by that most direct route, but until of late these efforts were rarely crowned with success. One of the first known to have made persistent efforts in this direction was Robert Beatty, who seems to have preferred, and to have faithfully tried, the

vaginal route for the removal of the ovaries, as did Sims, Thomas, and other American operators;[1] but it was not a success, and operations begun by this method were frequently terminated by the abdominal, so that I was led to operate by the latter method; and in my consideration of the technique of the operation in a paper read before the *American Medical Association* in 1878, gave preference to the abdominal route, saying that "by the abdominal incision the operation can always be completed, whatever be the condition of the pelvic organs, and that a wider scope is given to the hand and instruments of the operator than through the vaginal incision; that the vaginal operation is admissible only in cases of non-adherent ovaries displaced on the vagina," agreeing with Sims, who says "that the operation can be performed by the vagina only when we are sure that there has been no pelvic inflammation, no cellulitis, no adhesion of the ovaries to the neighboring organs." And *now*, on the contrary, I would say that it is *above all under such conditions*, in cases which can often not be completed by laparotomy, when inflammation has preceded, *when suppurative salpingo-ovaritis and peritonitis complicates* the case, when extensive adhesions exist, that the vaginal operation is indicated;[2] and in extreme cases, in purulent bilateral salpingo-ovaritis with adhesions, matting together of intestines and omentum, and multiple pus centres, the vaginal route is preferable if not imperative, and abdominal section is relegated to simple non-adherent cases, admissible in suppurative forms only if unilateral or if distinct enucleable centres exist. In difficult cases especially the vaginal route

[1] Smaller ovarian cysts, like enlarged ovaries, when impinging upon the vaginal walls, were removed *per vaginam* by surgeons now and then. I recall especially Dr. Baker, of Boston, and such cases were published, but were received rather as peculiarities, and made little or no impression; no attention was given them.

[2] In fact, this operation owes its development, in a measure, to the necessity of giving relief to patients upon whom laparotomy had been performed with but little benefit, by reason of the impossibility of completely removing the diseased parts. This is true of the 15 first cases of Richelot, who was amongst the earliest operators, of some of the first cases of Péan, and of 10 of the first operated upon by Doyen.

has been successfully resorted to for operations upon the pelvic organs usually reached by the abdominal incision, and all progress in this direction is a direct sequence to the success of hysterectomy by the vagina, which was successfully performed and admirably described by Dr. Dubourg,[1] a New Orleans physician in 1846, although his first operation was performed as early as 1829. But though described in this country at that time, it was ignored and forgotten, and it is to the French school, especially to Péan, that we must accord the credit of thoroughly establishing the operation and of placing the vaginal extirpation of the uterus for malignant disease among the established surgical procedures.[2] This was but seven or eight years ago, I believe that I may say that it is since the time of the International Medical Congress held in Washington, where the operation was fully discussed, that it has been universally accepted. It meant the removal of a non-adherent cancerous uterus, not too large to be successfully delivered *per vaginam*.[3] Péan did not stop here, his forci-pressure methods,[4] admitting of rapid and bloodless operation, facilitating the work. Solid abdominal tumors he had removed in sections by laparotomy by reducing their size, and masses too large to be delivered *per vaginam* were removed in fragments, not only carcinomatous uteri, but likewise those enlarged by inflammatory processes or benign neoplasms. This method

[1] I am indebted to Dr. Ernest S. Lewis, of New Orleans, for this information and for the pamphlet itself, published in New Orleans in 1846, in which the operator, Dr. Dubourg, gives a very complete description of the operation.

[2] Ere this operation had become firmly established, Péan, in 1886, for the first time performed vaginal hysterectomy for bilateral suppuration of the appendages, and while some doubt may exist as to priority, since Doyen, of Reims, claims to have performed his first operation some months previous to this, no doubt can exist as to the fact that it was Péan, the famous surgeon, who gave impetus to the work and a firm footing to the new procedure.

[3] Among the best results were those of Martin, with a mortality of 15 per cent., 1886.

[4] The name of Sir Spencer Wells must not be forgotten in this connection, as it was he who perfected the forci-pressure method by doing away with the ligature altogether, and leaving the hemostatic forceps *in situ* as a permanency (1882), which Péan had introduced as a prevention and temporary hemostatic, replacing it by the ligature before the completion of the operation.

of segmentation or piecemeal removal by *morcellement*, as it is termed, opened the way for operative procedure upon the pelvic viscera in various pathological conditions. The apparently insurmountable obstacle presented by the smallness of the incision and even of the vaginal orifice was removed; fibroids or fibroid uteri extending as high as the umbilicus were removed through the small vaginal orifice. Other French surgeons took up the work, especially Ségond, of Paris, Terillon, Quénu, Jacobs,[1] of Brussels, and a few others. It was found that the appendages were readily reached, and with them pus centres and inflammatory deposits; intestinal injury and shock were avoided, drainage was perfect, and recovery rapid. The success attending these operations in the hands of these eminent French surgeons was remarkable, and yet, when the facts were presented to the International Congress of Gynecology at Brussels, in 1892, they met with but comparatively slight appreciation. Vaginal hysterectomy, simple or by *morcellement*, the removal of larger tumors, of the appendages with the diseased uterus in bilateral peri-uterine suppuration, of inflammatory deposits and pus centres, by the vaginal method, still remains strictly speaking a French operation.

PRESENT STATUS.

Vaginal hysterectomy, be it by ligature, clamp, or forcipressure, is now a generally accepted operation, but one limited to malignantly diseased and to moderately enlarged uteri. In France and Belgium, under the leadership of Péan, Richelot, and Ségond in Paris, of Doyen in Reims, and Jacobs in Brussels, vaginal hysterectomy has made marked progress; it is resorted to with astonishing success, not only for the removal of enlarged and diseased uteri of all kinds, but for the removal of diseased appendages together with the uterus, especially in aggravated cases of bilateral suppuration, and even for unilateral removal of the appendages; the method of removal by *morcellement* has been extended to inflammatory deposits and

[1] De l'Hystérectomie par Morcellement dans les Suppurations pelviennes. Brussels, August, 1891.

pelvic suppuration with multiple pus centres. The results are among the marvels of modern surgery. Péan cites 66 cases without a death, and Ségond has but 4 deaths in 32 cases, mostly desperate ones; later he cites 102 hysterectomies for disease of the appendages, with 11 deaths, 10.7 per cent.; Doyen has but 2 deaths in 50 removals of tumors by *morcellement*, many of them complicated with pelvic inflammation, and in 28 cases of extirpation of the uterus and ovaries, complicated with fibroids and pelvic suppuration, 4 deaths, 2 of them being among his first cases, in all 112 cases. Richelot relates 134 operations, with a mortality of 6.7 per cent. But the record of my esteemed friend Dr. Jacobs, of Brussels, is one which speaks most earnestly for the advantages of the vaginal route: 125 cases, he told me in July, 1893, many of them, as I have myself seen, most difficult and desperate, with but 2 deaths, and these of a nature not in any way to be attributed to the operation itself, moribund almost, with removal of the pus centres as their only hope. In England and Germany, if we except the established operation, vaginal hysterectomy for malignant disease and persistent hemorrhage or prolapse, the vaginal method has found no favor as yet, it is certainly neither appreciated nor practised; and in this country but few have as yet given it their attention, notwithstanding the forcible presentation of the subject by Henrotin,[1] the first to operate in this country, as early as May, 1892, and his subsequent efficient work in this direction; but interest is now awakening. Dr. Montgomery, of Philadelphia (Pan-American Medical Congress, September, 1893), reports 20 cases with 1 death, and Dr. Baldy, who, like Eastman and others, has performed vaginal hysterectomy so successfully for malignant disease, now (Philadelphia Obstetrical Society, October, 1893) strongly urges the operation when disease of the uterus accompanies suppuration of the appendages; and I am convinced that others of our operators, with their brilliant results in ordinary vaginal hysterectomy, will soon follow.

[1] Vaginal Hysterectomy in Bilateral Peri-uterine Suppuration. Am. Journ. Obst., 1892, No. 4.

The removal of larger tumors and of the diseased uterus, together with the appendages, in cases of bilateral suppuration, and inflammatory deposits in the pelvis, if necessary by *morcellement*, in other words, the vaginal method for pelvic operations, has been most successful, and the champions of this cause to whom we owe the rapid development of this new method are Péan, Richelot, and Ségond of Paris; Jacobs, of Brussels; and Doyen, of Reims. To them I refer, above all to Dr. Jacobs, whose work it was my good fortune to witness more fully, and it is upon my personal observation in his cases that my opinions are based. Various operators differ somewhat in detail and in the extent to which they apply the vaginal method, possibly in the shape of instruments used, but all resort to vaginal extirpation by *morcellement* for malignant disease, fibroid growths, bilateral suppurative salpingo-ovaritis, and general circumuterine or pelvic suppuration.

The vaginal method takes the place of cœliotomy for the following operations on the pelvic viscera:

1. Hysterectomy proper for malignant desease of the uterus, carcinomatous, sarcomatous, or adenomatous; for benign tumors, fibromata and myomata, not extending above the navel; painful metritis or hemorrhagic endometritis resisting treatment; for otherwise ungovernable cases of prolapse or inversion. These are now generally accepted operations. The novel features are:

2. Hysterectomy for bilateral suppurative disease of the appendages, with accompanying disease of the uterus.

3. All forms of pelvic suppuration and inflammatory deposits.

4. Removal of the diseased appendages of one side only, advocated and practised by Dr. Jacobs.

5. For minor operations, the breaking up of adhesions, replacing and fixation of the uterus, and for purposes of examination.

I refer only to such cases in which the vaginal incision takes the place of the abdominal for pelvic operation; the

opening of an abscess by knife or trocar as it has always been practised cannot be classed with these procedures, and must not be confounded with them ; the opening of an abscess *per vaginam* is as distinct a procedure and differs from the operation on the pelvic organs by the vaginal route as much as tapping, the emptying of an ovarian cyst by the trocar, differs from the operation of ovariotomy.

INDICATIONS.

The indication for the operation, as hitherto generally accepted, malignant disease of the uterus, has been extended so as to include morbid conditions of the uterus and appendages, exudates, and circumuterine suppuration. Péan limits the indications for hysterectomy by *morcellement* to malignant and benign growths of the uterus, and to all cases of pelvic suppuration treated to-day by laparotomy. Doyen agrees with Bouillez in saying that when the appendages of both sides are to be sacrificed, vaginal hysterectomy, or *total castration* (*i. e.*, removal of appendages and uterus *per vaginam*), is preferable to the removal of the appendages by laparotomy, both as regards the immediate and the secondary or permanent results. Terrier gives as his indications, which are accepted by Dr. Jacobs, in addition to morbid conditions of the uterus itself, (1) the return of suppurative pelvic peritonitis after laparotomy, (2) suppurative pelvic peritonitis with fixation of the uterus and multiple pus centres, saying, that laparotomy *may* be resorted to in enucleable non-suppurative salpingo-ovaritis. Dr. Jacobs has given greater scope to this method than any other operator, and now even applies it to unilateral cases, to the removal of unilateral pyosalpinx, with most satisfactory results ; in one instance the patient having given birth to a child since the operation. Ségond still prefers laparotomy when operation is indicated in unilateral cases, above all unilateral salpingo-ovaritis when non-suppurative. Local conditions and the individuality of the case may do much to determine the method of operation, but the advocates of the vaginal route point to the bilateral suppurative conditions as

the most urgent indication, limiting the admissibility of laparotomy to unilateral and to simple non-suppurative cases.

METHOD AND TECHNIQUE.

I can here but outline in general the method of operation by the vagina, as it is the method and not one of the various operations to which it is applicable which I wish to emphasize—the reaching of the pelvic viscera through the vaginal in place of the abdominal incision. We must bear in mind the operation of vaginal hysterectomy as a type which is ever present, and may be regarded as the foundation from which the various operations upon surrounding parts have developed, with but little or no modification of technique.

The method is that of vaginal hysterectomy: The patient is usually placed in the lithotomy position, which I deem preferable, though Péan operates upon the side, in the Sims position; the vaginal incision, encircling the cervix, is made with a knife (Péan, Ségond), the thermo-cautery (Jacobs), or the galvano-cautery (Engelmann). The ligature used by many for simple hysterectomy has yielded to forci-pressure—hemostasis by the application of multiple forceps—the single clamp for the ligament being rarely used in these operations. The guiding principle is *not to cut without having seen* and *without having previously clamped* in advance of the proposed incision. This makes an almost bloodless and rapid operation possible, The piecemeal removal of large masses has enabled the surgeon to extend the application of this method to all pelvic work, and has made it so successful in the removal of inflammatory deposits and of tumors, and in those most dreaded of all cases, general circumuterine and pelvic suppuration, with matting together of parts.

INSTRUMENTS.

For the rapid and successful performance of this operation, properly adapted and strongly made instruments are absolutely necessary. The Simon speculum; retractors of various shapes—short and broad, and long and narrow—in addition

to the usual lateral retractors; volsellum forceps, with comparatively short blades, strong teeth, and long handles for the fixation of the uterus, and more powerful ones for the grasping of the diseased tissues. These instruments, especially the latter, must be far stronger than the volsellum forceps in general use. Hæmostatic forceps of great power are needed, likewise with comparatively short blades and long handles, which must be of such length as to thoroughly clear the vaginal orifice when left in place. This length of handle is important, so that the hand of the surgeon may not be interfered with during the operation by the numerous forceps which remain *in situ*, hanging out of the vagina from ligaments and vessels. A strong, straight bistoury; strong scissors, powerful enough to cut the gristly fibroid tissue (one pair straight, one slightly curved); a strong galvano-cautery knife for the vaginal incision, or the thermo-cautery with a knife-blade slightly curved upon the flat.

The number of assistants necessary is greatly reduced if the plan of Jacobs is followed, by using the heavy, self-retaining speculum and the "Beinhalter" of Sänger.

THE OPERATION.

After the usual preparation, above all, the most thorough antisepsis of the vagina, the cervix is seized with the smaller volsellum forceps, securely grasped, so that a certain force may be exercised, and much is often needed. The vaginal mucosa is then incised with the cautery, encircling the cervix as near to the os as it is possible—in non-malignant cases; in the malignant we, of course, escape the infiltrated tissue. The tissue is then pushed back with the finger, anteriorly, posteriorly, and laterally, under irrigation, until the peritoneum is reached, posteriorly in the Douglas or anteriorly in the vesical reflexion, as seems most advantageous in the individual case, the Douglas being preferred. This is preparatory to any one of the operations in which the uterus is involved. If the appendages of one side only are to be removed, a pus centre is to be enucleated, or adhesions

broken up, the vaginal incision is limited to the posterior and lateral circumference of the cervix and the work is done through this opening. The lower portion of the uterus having been denuded, forceps are placed upon the corresponding segment of the broad ligament; the uterine artery and the tissues are severed as far as the vessels are controlled. Denudation is continued, and the corresponding upper portion of the broad ligament is clamped until all vessels are controlled; pressure forceps are likewise applied previous to the removal of the appendages, when this is desirable. Where piecemeal removal—*morcellement*—is necessary, the uterus is divided transversely into two halves, after liberation of the neck, and section after section is excised, after guarding against hemorrhage by properly placed forceps and by the grasping with the strong volsella above the point of insertion of the knife, and this is repeated until the *morcellement* of the uterus is complete, be it only a moderate enlargement or a fibroid mass extending into the abdominal cavity.

In this same manner inflammatory masses in the pelvis are treated, and there can be but little loss of blood if this principle of forci-pressure for hæmostasis before the use of knife or scissors is properly carried out.

During the peeling-out process, such pus centres as are within reach are opened if they cannot be enucleated, and the pus escapes through the vaginal opening. Irrigation is, of course, freely resorted to. Sometimes such pus centres can be peeled out without bursting; but it is true of these, as it is true of any part of the firmly imbedded uterus, that if it cannot be dragged down or enucleated, as much as is possible is cut away and the firmly adherent remnants left in place without fear. The appendages are liberated and removed after preliminary hæmostasis, and in suppurative cases such pus centres as have not been opened in the liberation of the uterus are searched for during the liberation and removed of the appendages, and opened whenever they cannot be enucleated, removing all that can be removed, *leaving such parts as cannot be liberated or cut away*—a principle which

is followed with perfect safety and is true of inflammatory masses about the uterus or the appendages. The possibility of such methods permits rapidity of operation, and successful operation in otherwise impossible cases, impossible by laparotomy on account of the difficulty of reaching the parts through the agglutinated mass of intestines and omentum, and on account of the uncertain upward drainage. The success of these manipulations is, moreover, to a great extent due to the perfect drainage which is necessitated by the removal of the central uterine mass and the forceps, which remain and keep open this most favorable of all passages for remaining secretions; much is also owing to the primary incision with the cautery, which I look upon as of great importance; it saves much time, there is no hemorrhage, no time lost by ligation or sewing, malignant nodules are destroyed if present, infection from secretions from above and from the outpouring pus is prevented, and drainage is necessitated, even if the forceps did not remain, as speedy union is impossible.

The advantage of forci-pressure over the ligature for hæmostasis is undoubted in intricate operations; it is a method I have to a great extent followed ever since Péan and Kœberlé devised the first instruments known to me, over twenty years ago. Their advantage in this operation is evident; to quote Dr. Jacobs: "We owe to the forceps rapidity, greater security against hemorrhage, the absence of the possible danger of infection which we have from the suture itself, and drainage, which of necessity follows the leaving in place of the pressure forceps." And he calls attention especially to the advantage gained by passing the dressing above the point of the forceps, and thus holding the intestines well away from the wound.

ADVANTAGES OF THE VAGINAL ROUTE.

The advantages of the vaginal route for all pelvic operations to which it is applicable are: the proximity of the parts to the hand of the operator; the possibility of controlling the work

of knife and scissors by the eye; the rapidity of operation, which is made possible by the absence of ligature or suture; the absence of hemorrhage by the application of forci-pressure before section; the avoidance of the peritoneal cavity proper; no visible cicatrix is left, and the possibility of ventral hernia, which is not infrequent after the abdominal operation, is done away with. To the avoidance of the abdominal cavity proper I mainly attribute the absence from shock which is claimed for these operations, and it has certainly been proven a truth as far as I have seen. The vaginal opening appears as the natural route for operation upon parts below the pelvic brim, above all in cases of suppuration. Not only the proximity of the parts, the more or less complete boarding off of the peritoneal cavity, but above all the perfect drainage, the natural downward drainage through the central canal, without any possibility of stagnation of fluids, a drainage which is ideal after cautery incision and forci-pressure. No visible cicatrix is left, and the possibility of ventral hernia, which is not infrequent after the abdominal operation, is avoided. Injuries to the viscera can be as readily remedied as during operation by the abdominal incision; but they rarely occur, as the intestines are not likely to come into view. Hemorrhage which cannot be controlled by the forceps, oozing from torn surfaces, can be controlled by the gauze tampon. The one objection is the necessarily small field of operation, the smallness of the opening, which would limit the opportunities for this method were it not for the possibility of *morcellement*, which admits of the successful removal, which I was fortunate enough to witness at the hands of Ségond, of large fibroid tumors extending as high as the umbilicus, or of fibroid tumors and inflammatory masses almost filling the pelvic cavity, as was proven to me by Dr. Jacobs. As a method the vaginal operation is not to replace that by abdominal incision, but it is to enlarge the field of the surgeon and to facilitate his work.

The vaginal operation I look upon as the operation of choice in cases of extensive inflammation and suppuration,

and whenever practicable it should be resorted to, by reason of its simplicity and rapidity and on account of the avoidance of the abdominal cavity. The very adhesions which form an obstruction in our efforts to reach the pelvic viscera by abdominal incision, the matting together of intestines and omentum, are a protecting guard against that dangerous cavity in operations by the vaginal route. Those familiar with the operation are enthusiastic in its favor, and well they may be if we consider the results achieved, successful results in those cases which are most to be dreaded when approached by the abdominal incision. I refer to the various forms of pelvic suppuration. In view of these results, I am tempted to indorse the opinion of those who say that the operation by abdominal incision should be limited to cases with enucleable pus sacs or to simple non-suppurative salpingo-ovaritis.

In comparing the relative advantages of the vaginal and of the abdominal methods, operations including the appendages and operations for circumuterine or pelvic suppuration of the pelvic organs alone need be considered, as the superiority of the vaginal route for extirpation of the uterus itself is now too well established; for bilateral pyosalpinx with serious affection of the neighboring tissue the vaginal method is the method of choice, and in cases of pelvic suppuration with multiple centres it is a necessity, as this is always a difficult and dangerous operation by the abdominal route, and one which must frequently be abandoned as incomplete. Hysterectomy by *morcellement* also affords a far greater probability for a cure for pyosalpinx of gonorrhœal origin—a cure which would appear probable or possible only by this method of operation, because it admits of, if it does not necessitate, the removal of the uterus as well; and I believe that removal of that organ in these cases is a necessity—that the imperfect results which accompany so many of the so-called successful operations for pyosalpinx and pelvic suppuration by the abdominal incision are due to the leaving of the uterine body: within the uterine mucosa and the remnants of the tubes is left the nidus of disease, and a cure, a restoration to health, by the mere removal of the larger pus

centres is improbable. Notwithstanding that the operation is still young, some of its most striking results have been achieved by the completion of operations unsuccessfully begun by abdominal incision and by the removal of that remaining nidus—the uterine body—in patients who had recovered from removal of the appendages by abdominal section, but to whom health was not restored until the final hysterectomy by the vaginal route. I will repeat that in those cases in which gonorrhœal affection has led to tubal and pelvic disease a cure without the complete removal of the infected uterus and the tube in its entirety would seem impossible, hence vaginal hysterectomy by *morcellement* should take precedence in such cases.

The after-treatment is simple, and as my own experience does not extend beyond hysterectomy for malignant disease of the uterus I can speak only of the cases I have seen in the hospital of Dr. Jacobs near Brussels; recovery without untoward symptoms of any kind, without rise of pulse or temperature, was the rule; removal of the forceps after forty-eight hours, change of dressing; then the use of frequent vaginal douches, the sitting up of the patient on the fifth day, closing of the vaginal wound, and dropping off of the eschar on the thirteenth or fourteenth day—phenomenal results.

In conclusion, let me say that I would urge the vaginal route for pelvic operation; above all, hysterectomy by *morcellement* whenever possible, not alone by reason of the advantages presented and the success of such operation, but because of the greater familiarity with the pelvic viscera, the greater tactile dexterity obtained, which must lead the gynecic surgeon to a more thorough and precise knowledge of these parts, and will inaugurate a new era in pelvic surgery.

The safety and facility with which such operations can be performed opens up an entirely new field for minor operation—the breaking up of adhesions, the replacing of the uterus, and the examination of the many and important parts within reach of the finger.

I will close with the views emphasized by Dr. Jacobs, the enthusiastic advocate of vaginal operation, who urges vaginal hysterectomy by *morcellement* for the removal of malignant and benign tumors of the uterus; but, above all, for pelvic suppuration and bilateral pyosalpinx, as he claims that removal of the uterus is necessary, that trouble invariably remains within the uterus and the termini of the tubes when the tube, the main pus centre, only is removed by cœliotomy; he would even see unilateral cases treated through the vaginal opening. It is the operation *par excellence* in pelvic suppuration with multiple pus centres, as the abdominal cavity is completely shut off, drainage is perfect, and partial removal is admissible. Exudates and pelvic deposits he would treat by this method where a rapid cure is a necessity. In the working-woman, who has neither time nor means to devote to the tedious treatment necessary, the removal of the uterus and its appendages by the vaginal route leads to speedy and perfect recovery, certainly to a quick relief, which is possible by no other means.

If I have quoted so freely the opinions of my esteemed friend it is because I owe to him my appreciation of this method, a method which I shall henceforth adopt for all suitable cases.

February 15, 1894. The opportunity is now afforded me in revising the proof for this reprint of adding a few words which seem essential in this period of progressive surgery, remembering that this paper was read in November, 1893. Since then vaginal hysterectomy has become more firmly established and more generally understood and appreciated, and with experience and improvement in technique, the operation presents now a minimal mortality; in view of the facts now presented, I can safely say that vaginal hysterectomy has proven superior to the operation by abdominal section, both as regards mortality and permanent results. Doyen now cites 112 cases, with 6 deaths, a mortality of 5.4 per cent., and Jacobs has reached his 200th case, with a mortality of only

3 per cent., better even than the previously recorded results of Richolet, 6.7 per cent. in 134 cases, 30 of which were for pelvic suppuration, with a mortality of 10.2 per cent. In considering these figures it must be remembered that many of these operations were in desperate cases, in which laparotomy would appear hazardous or uncertain, or in which abdominal section had been attempted or had been performed, and had led to imperfect results.

The operation is gaining ground in this country, and in Germany it has been taken up by Sänger, by Leopold, and Landau, possibly by others as well; the mortality is low, the results are good, and ere long vaginal hysterectomy will be as firmly established and as universally accepted for the treatment of pelvic suppuration as it now is for malignant disease of the uterus, and the vaginal method will, by reason of safety, rapidity, and success, replace abdominal section in suitable cases.