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LAPARO-HYSTEROTOMY: ITS INDICATIONS AND TECHNIQUE.¹

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WE live in an age of great unrest in medical literature. Books written only yesterday are old to-day. Operations perfected and highly recommended to-day are condemned to-morrow. To recite what has been brought forward as new during the last year in any one of the departments that I am expected to represent would require more of your time than I deem prudent to occupy. I have, therefore, decided to be more in accord with the spirit than the letter of the requirements of this Society in the selection of the subject for this paper. Instead of presenting to you in a condensed form the work of others, or an account of my experience in surgery during the last year, I will call your attention to a few salient points on laparo-hysterotomy, a subject of equal interest to the surgeon, the obstetrician, and the gynecologist. The term laparo-hysterotomy signifies cutting into the uterus from the peritoneal cavity after abdominal section. In operative surgery this designation should be used to indicate an operation by which a foetus or a tumor is removed from the interior of the uterus through an abdominal incision, followed by suturing of the visceral and abdominal wounds. The delivery of the foetus by laparo-hysterotomy has been known since the time of Cæsar as Cæsarean section. Modern nomenclature, as far as the names of

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operations are concerned, should be established as far as possible on an anatomical basis; hence the old expression, Cæsarean section, should give way to the more modern and accurate term laparo-hysterotomy. The same operation is also applicable in the treatment of certain forms of uterine myo-fibroma, to which, of course, the old nomenclature would have no reference.

INDICATIONS.—In obstetric practice, laparo-hysterotomy will always hold a permanent place as a legitimate procedure. Improvement in its technique, rigid observance of antiseptic precautions and careful selection of cases, will be sure to enlarge its range of application, and expand its sphere of usefulness. At no distant day it will limit laparo-hystero-oöphorectomy, or Porro's operation, to cases in which the uterus in itself constitutes a source of immediate or remote danger. It is a safer operation than Porro's. Out of 149 laparo-hysterotomies performed on the Continent of Europe, 108 mothers and 136 children were saved. Out of 80 operations in Germany, death of the mother occurred in twelve. The best results have been obtained by Schauta, 15 cases without a death; Leopold, 17 cases, with three deaths; and Zweifel 29 cases, with only one death. Porro's operation is attended by a greater mortality, and it is at the same time a mutilating procedure; and no surgeon has a moral right to add to the gravity of an operation for the purpose of preventing conception in the future. The prophylactic part of the operation is not founded on justice, and is not in accordance with modern surgical teaching, and should not be seriously considered by the conscientious practitioner unless the uterus itself is the seat of a life-threatening, removable disease. Cases have been reported in which laparo-hysterotomy was repeatedly performed with success on the same patient. In fact, I am of the opinion that a second and successive operations are fraught with less immediate danger to life than the first. The modification of Porro's operation, removal of the inverted uterus by the vagina, recommended by Francke, and strongly urged by John Bartlett, of Chicago ("A Proposed Modification of Porro's Operation," Chicago, 1886), presents no special merits in the light of modern conservative surgery, and it is to be hoped that it will be limited in the future to the removal of a diseased uterus. More important is a careful consideration of the comparative merits of laparo-hysterotomy and craniotomy. Fortunately, the opinion is gradually gaining ground that the removal of a living child by craniotomy is a relic of the barbarous age, and is being regarded, from a legal as well as a moral standpoint, as a crime. The defenceless babes in their mothers' wombs have legal rights, which let us hope will be respected more in the future than has been the case in the past. The wilful and premeditated destruction of the life of a child on its way into the world has ceased to be a justifiable procedure, and should no longer receive the sanction of the teachers of obstetrics and the pro-

fession. A resort to craniotomy should be limited to cases in which the physician can satisfy himself that the child is dead, and its removal *per vias naturales* is attended by less danger to the mother than a laparo-hysterotomy. In a very able address delivered before the Obstetrical Section of the Ninth International Medical Congress, Professor Miller, of Chicago, clearly laid down the indications and contra-indications of craniotomy. He expressed the belief that the cases admitting of no discussion were first, when the child is dead; here, craniotomy is indicated, if the pelvic diameters are sufficient to admit of the extraction of a mutilated child without greater danger to the mother than would arise from delivery through an abdominal incision. He further stated that the second class of cases, in which the course to be pursued is clear, are those in which the antero-posterior diameter of the pelvis is less than two inches. Here the dangers to the mother, incident to craniotomy, are as great as in delivery by laparo-hysterotomy, and there is good prospect of saving the life of the child by the latter operation. In the cases in which the shortest diameter of the pelvis is three and three-fourths inches, he regards laparo-hysterotomy and craniotomy contra-indicated, and an attempt should be made to deliver the child through the normal channel without mutilation.

The statistics of mutilating vaginal operations collected by Dr. E. P. Davis, in his article in the *American System of Obstetrics*, include 1000 cases by the ablest obstetricians, show a maternal mortality of about 8 per cent. McKelway, in a paper read before the American Medical Association at its meeting in Detroit, expresses himself as follows concerning the results obtainable by laparo-hysterotomy: "I believe it fair to state that the mortality of the improved Cæsarean section, done in women not exhausted by labor, and done under proper antiseptic or aseptic precautions, by skilful operators, is not over 10 per cent." I will go one step further, and make the claim that, in well selected cases, the maternal mortality of laparo-hysterotomy is not greater than the mortality of ovariectomy in the hands of the same operators. Laparo-hysterotomy is absolutely indicated in all cases where the conjugata vera is below two and three-quarter inches, whether the child is living or dead, because the dangers incident to the mother from a craniotomy would more than overbalance the maternal risks of this operation. It is also the operation of selection when the obstruction to delivery is due to the existence of a pelvic tumor or malignant disease of the cervix. In view of these facts, it is only a just inference to conclude that in the future craniotomy should be limited to the extraction of a dead child, in cases in which this procedure does not incur more risk to the life of the mother than laparo-hysterotomy, and that in all other cases a healthy living child should be delivered without mutilation, by the natural process by the aid of forceps, turning, symphysiotomy, or by laparo-hysterotomy.

Symphysiotomy has recently again come into prominence as a formidable competitor of laparo-hysterotomy. It is certainly to the interests of the children yet unborn that this operation is being perfected, and that it has met with such a warm reception on the part of the profession here and abroad. It will add its share toward limiting craniotomy to its legitimate sphere. Its value as a life-saving measure to the child, its dangers as an operation to the mother, must be established by future experience. I fear, however, that many children will be sacrificed by substituting this operation for laparo-hysterotomy in many cases of contracted pelves. I am also confident that the permanent damage done to the mother is much greater than we have been led to believe by the enthusiastic reports recently published. Time and experience are important factors in determining the safety and value of any operation. It is difficult for me to conceive how the mechanical obstacles to delivery are to be overcome by this operation in any case in which the child is of normal size and the narrowest diameter of the pelvis is less than three inches.

Schauta (*Internat. klinische Rundschau*, 1893, 10) made experiments on the pelvis of the cadaver of a woman, and found the following increase in the diameters with five centimeters of separation of the pubic bones: Conj. vera, + 1 c.m.; trans. maj., + 2.1 c.m.; trans. ant., + 2.8 c.m.; transverse (outlet), + 3.5 c.m.; straight (outlet), + 0.3 c.m.

With the knowledge thus obtained he made three successful symphysiotomies in cases of contracted pelves.

According to the experiments of Kilian, the utmost extent to which the conjugate diameter can be increased by symphysiotomy amounts to only 1.3 c.m. In some cases, also, the sacro-iliac synchondroses are so firmly fixed that no justifiable amount of force would affect separation to a sufficient extent to be of any value in overcoming pelvic contraction. Injury to the sacro-iliac synchondroses, vesico-vaginal fistulæ, incontinence of urine, an uncertain tottering gait, prolapse of the uterus, phlegmonous inflammation, caries or necrosis of the pubic bone, are some of the immediate and remote consequences to the mother which may follow this operation. I am, therefore, inclined to believe that this operation, which has sprung into such prominence in so short a time, will be limited to its proper sphere in the near future, and will be resorted to as a life-saving measure to both mother and child in cases in which there is only a slight disproportion between the size of the child and the pelvis. It is, of course, strictly contra-indicated in all cases in which the obstacle to a normal delivery is a pelvic tumor or malignant disease of the uterus. A somewhat unusual indication for laparo-hysterotomy is the removal of certain tumors of the uterus. Enucleation of subserous myo-fibromata of the uterus through an incision in the abdominal wall is an established and well recognized operation. This operation, however, is not applicable in cases in which the tumor is located so near

the mucous membrane that by its removal by enucleation the uterine cavity is opened. The class of cases in which I wish to recommend laparo-hysterotomy is when the tumor is single, large, and projects into the uterine cavity or cervical canal, in other words, isolated, submucous myo-fibroma not adapted for removal through the vagina. I shall further on report a case of this kind successfully operated on by this method.

TECHNIQUE.

I shall forego the tedious task of describing the different methods which have been devised to effect delivery through the supra-pubic route. I will content myself in giving you a description of the method of operating which I adopted in the two cases which came under my own observation, and which will be recorded in this paper.

Time of Operation.—Authorities, with few exceptions, are agreed upon this point. The consensus of opinion of nearly all modern writers on obstetrics is to the effect that the best results concerning both mother and child are obtained when the operation is performed during labor. The danger from hemorrhage and septic infection is greatly diminished by firm uterine contractions. Coe (*Medical News*, October 8, 1892), of New York, pleads in favor of elective laparo-hysterotomy, and claims that the results are as good as when the operation is postponed until labor has commenced. If the operation is done during labor it should never be delayed unnecessarily, and should not be performed as a last resort, but as soon as it can be determined that it is necessary. Exhaustion, resulting from protracted ineffectual labor pains, greatly adds to the immediate risks of the operation and increases the liability to septic infection. The greatest difficulties encountered in the selection of the proper time are, of course, met with in primiparæ. The attending physician must often rely on his own judgment in deciding upon the propriety of the operation. In cases in which labor does not progress satisfactorily, the capacity of the pelvis should be determined by a careful examination. If this shows that a living child cannot be born, a prompt decision should be made, assistance summoned, and the necessary preparations made. In multiparæ, the previous history is of much importance. If one or more children have been previously delivered by craniotomy, it is more than probable that a laparo-hysterotomy will become necessary.

Preparations.—In all cases in which it can be ascertained beforehand that a laparo-hysterotomy should be done, the patient should be advised to enter a hospital several days before the expected labor, and if this is impracticable she should be brought to some place within easy reach of her attendant. Laxatives and warm baths are important preparatory measures. The room, bed, clothing, etc., must be properly attended to

in making the preparations for the operation. The field of operation, hands of operator and assistants, instruments, sutures and ligatures must be rendered aseptic by strict attention to antiseptic details. Very few instruments are required. A scalpel, half a dozen hæmostatic forceps, scissors, needles, and a piece of aseptic rubber-tubing, half an inch in diameter and about two feet in length, will be all that the surgeon will need. For suturing the uterine incision a small darning needle answers an excellent purpose. Catgut, silk, and silkworm-gut, and a number of aseptic towels and napkins should be at hand. After all the antiseptic precautions have been carried out, nothing but sterilized warm water will be required during the operation. Chloroform should be used as an anæsthetic in preference to ether.

External Incision.—The external incision is made in the median line, commencing at a point just below the umbilicus. It should only be large enough to permit the passage of the child without tearing. It need not exceed six inches in length. The abdominal wall in the linea alba in pregnant women at the end of gestation is exceedingly thin, often not much thicker than a piece of ordinary blotting paper. It has not infrequently happened that the operator not only cut through the entire thickness of the abdominal wall in making the first incision, but at the same time wounded unintentionally the uterus. The first incision should only divide the skin and superficial fascia, and the remaining structures should be lifted away from the uterus and divided between two dissecting forceps, after which the incision is enlarged by cutting between two fingers.

Uterine Incision.—The pregnant uterus pushes before it the intestines and omentum as it ascends from the pelvis; hence, after opening the peritoneal cavity the only thing that can be seen is the anterior wall of the uterus. The uterine incision should be made in such place and in such a manner as to limit the hemorrhage to a minimum. The uterine vessels are smallest and least numerous in the median line and away from the cervix. The opening in the uterus should, therefore, be made in the median line, half-way between the cornua, and should not extend any farther in the direction of the cervix than is absolutely necessary. Statistics show that twenty years ago Cæsarean section performed by horned animals yielded better results than those done by physicians. (Harris.)

It is a well-known fact in surgery that lacerated wounds bleed much less profusely than incised wounds. I am inclined to believe that the difference in the mortality attending the unskilful and skilful Cæsarean sections was largely due to the difference in the amount of blood lost and character of the wound; in the former the opening in the uterus was made by tearing, in the latter it was made by a clean cut with a sharp knife. Sudden loss of blood makes a more profound impression

than if the same amount of blood is lost gradually. The large uterine sinuses when divided by a sharp instrument do not retract, consequently spontaneous arrest of hemorrhage occurs slowly or not at all, but when the sinuses are torn the lumina are blocked at least in part by torn lacerated tissue, a condition which favors the formation of a thrombus upon which depends the spontaneous arrest of bleeding.

Murdoch Cameron ("The Prevention of Hemorrhage in Cæsarean Section," *British Medical Journal*, December 24, 1892) has recently introduced the use of a pessary for compressing the uterus at this stage, and this enables the operator, he claims, to cut down upon the membranes without puncturing them. I do not believe that this or any other kind of hæmostatic device is necessary before the delivery of the child, as the amount of blood lost during the time required in making the uterine incision and extraction of the child does not exceed that attending an ordinary delivery, provided the uterine opening is made quickly, and by tearing in place of cutting. The uterus should not only be in the middle line, but an examination should be made to ascertain that it is not twisted on its axis. Should this be the case the malposition should be corrected before the visceral wound is made. The median line of the anterior uterine wall can be ascertained by observing the location of the Fallopian tubes. If these occupy the same relative position, a point halfway between them will correspond to the abdominal incision. In order to limit the hemorrhage to a minimum without any artificial hæmostatic agent, I make an incision in the median line of the uterus about six inches in length, cutting down to but not into the large vessels. This incision should terminate two inches or more above the cervix. An assistant now makes pressure on each side of the abdomen in such a manner as to retract the margins of the abdominal incision, and bringing at the same time the uterus well forward into the external incision. The lateral pressure prevents the escape of blood and amniotic fluid into the abdominal cavity. With one cut of the scalpel a button-hole is now made in the centre of the superficial incision, which penetrates the entire thickness of the uterine wall and without any reference to the location of the placenta. Both index fingers are inserted into this opening, which is then enlarged to the requisite size by tearing. The superficial incised wound determines the direction of the lacerated wound. The tear in the deeper tissues may take place somewhat obliquely, but this is not detrimental either in the delivery of the child or the suturing of the wound. Only a few seconds are required in making the opening in the uterus.

Extraction of the Child.—As soon as the opening in the uterus is made the operator plunges the right hand into the uterus and quickly grasps one or both feet and delivers the child as speedily as possible by traction, while the assistant keeps up lateral pressure. The hemorrhage is greatly

diminished, or nearly arrested, as soon as the surface of the wound is compressed by the body of the child. As little time as possible should, therefore, be lost from the moment the uterine incision is commenced until this stage of the delivery is reached. The uterine incision and delivery of the child can be completed in less than a minute.

Elastic Constriction.—I cannot deprecate too strongly preliminary elastic constriction of the uterus. The time occupied in the application of the elastic constrictor and the rough handling of the abdominal contents cannot fail in adding an increased risk to the operation and endangering the life of the child, while as a blood-saving procedure it is certainly unnecessary. Elastic constriction has been charged with causing post-partum hemorrhage by Veit, Doléris, Pajot, Zweifel, Säger, and Lusk. We must, therefore, admit that while its use may prevent bleeding during the early stage of the operation, it is apt to be followed by increased hemorrhage after its removal. This objection holds good when it is resorted to before the delivery of the child. Its employment after this has been accomplished is attended by benefit. At this stage of the operation no time should be lost in attempts to remove the placenta. If the placenta is implanted over the incision it should be dealt with in the same way as in the delivery of the child in cases of placenta prævia. As soon as the child is delivered the uterus should be brought out of the abdominal incision and constricted with a rubber tube the size of the little finger at a point below the visceral incision. Instead of tying the ligature, it is better to cross it; after making the constriction firm enough, clamp it at this point with a pair of hæmostatic forceps. Prior to making the constriction the uterus should be firmly compressed, so as to empty it as far as possible of venous blood. After the constrictor has been applied, the abdominal wound behind and above the uterus should be covered with a large aseptic compress wrung out of hot sterilized water. This prevents the entrance of blood into the abdominal cavity during the further steps of the operation, and also guards against the escape of the intestines.

Removal of the Placenta.—At this stage of the operation the placenta will be found partially or completely detached, and should be removed *in toto* with the membranes. If the placenta is adherent, it is separated at the margin nearest the wound, when complete detachment is effected by inserting the tips of the four fingers of one hand between it and the uterus. Fragments of membranes are looked for and removed. The interior of the uterus is then cleansed and lightly dusted with iodoform for the purpose of preventing putrefaction of the blood, which accumulates after suturing of the uterine wound. During this part of the operation it is important to secure uterine contraction by rubbing, and, if necessary, by douching with hot water. Should these measures fail

the introduction of a piece of ice into the uterine cavity may bring about the desired response.

Suturing of the Uterine Wound.—This constitutes the most important and prolonged part of the operation. The suturing must be done in a manner that will secure such accurate approximation of the incised and torn surfaces as to arrest bleeding by pressure, and at the same time separate perfectly the uterine from the peritoneal cavity. Only round needles should be used, a small darning needle for the large and an ordinary sewing needle for the fine sutures. I use four rows of sutures, three of catgut and one of silk. The first row is made of medium-sized catgut sutures, half an inch apart, and including the entire thickness of the uterine wall with the exception of the peritoneum. This row of sutures is intended to bring and hold in contact the surfaces of the wound, and should, therefore, include considerable tissue on each side. After the sutures have been tied there will be found a little gaping between them; this is overcome by applying a continued suture of fine catgut, which should bring in accurate contact everything else except the peritoneum. The next step in suturing is to bring in contact a strip of the serous surfaces, about one-third of an inch in width the entire length of the wound, by a third row of sutures. This row of sutures is intended to invert the serous margin of the wound on each side to the depth of at least one-third of an inch. A small darning needle and medium-sized braided silk are used in applying these sutures. The sutures are made to include the peritoneum and considerable of the muscular tissue, so as to insure a firm hold. The needle is entered about one-third of an inch from the margin of the wound, and is made to emerge a few lines from the edge, when it is made to enter at a corresponding point on the opposite side, and is brought out one-third of an inch from the margin of the wound. Two sutures to the inch will answer the purpose. The third row of sutures is buried by a continued suture of fine catgut, which includes only the peritoneum and subserous connective tissue. If all of the sutures are properly inserted and tied they can be relied upon in preventing hemorrhage after the removal of the constrictor, even in cases in which the uterus does not contract firmly. The constrictor is now removed and contractions of the uterus secured before the organ is replaced into the abdominal cavity.

Inertia of Uterus.—If the uterus does not contract promptly the organ is stimulated by rubbing, kneading, compression, hot douches, and, if need be, by the faradic current.

Subcutaneous administration of ergot may also be called into requisition. Irrigation of the abdominal cavity is not necessary. Blood and amniotic fluid, both of which being aseptic fluids, are removed by sponging. As soon as the uterus contracts it is returned into the

abdominal cavity, and if it can be done the omentum should be drawn over the line of suturing.

Suturing of Abdominal Incision.—Owing to the thinness of the abdominal wall great care must be exercised in closing the external incision in order to prevent later the formation of a ventral hernia. This remote complication occurred in one of my cases. I am now inclined to advise in such cases Edebohls' method of suturing. This consists of a row of subcutaneous sutures of silkworm-gut which include everything but the skin, and are buried by a second row of superficial sutures. Silkworm-gut is not absorbed, but as it gives rise to but little irritation it readily becomes encysted. The dressing and after-treatment are the same as in coeliotomy for abdominal tumors.

I will report in brief the two cases of laparo-hysterotomy in parturient women that have come under my own care.

CASE I.—Patient, twenty-four years of age, German parentage, born in this country. First child delivered by version and craniotomy two years before her second pregnancy. The attending physicians made a careful examination of the pelvis and found it flattened and contracted to such an extent that they gave it as their opinion that she could never be delivered of a mature living child through the normal passage. The delivery was followed by thrombo-phlebitis and septic infection, which nearly proved fatal, and only yielded to thorough intra-uterine antiseptic irrigations. When she became pregnant the second time, her attending physician, Dr. Wenzel, advised her to enter the Milwaukee Hospital a few days before the expected labor, for the purpose of making the necessary preparations for a laparo-hysterotomy. This advice was eagerly accepted. Labor commenced 6.30 Christmas morning, 1890. The labor pains were regular and strong. The membranes ruptured at 8 A.M. As, in spite of frequent and violent expulsive pains, the head had not entered the pelvis at 11 A.M., the operation was performed in the manner described above. The record states that the child was outside of the uterus in one minute after the operation commenced, and in ten minutes later the patient was put to bed. The hemorrhage was profuse for a moment, but was arrested by the pressure of the body of the child. The placenta was attached near to the uterine wound, and was removed without difficulty. A large piece of membrane was removed separately. During the suturing of the wound the hemorrhage was controlled completely by the elastic constrictor. The child weighed ten and a half pounds. With the exception of a slight post-partum temperature the mother made a good recovery. Abdominal incision healed by primary intention. Mother and child living and in good health at the present time.

CASE II.—Woman, twenty-eight years old, native of Munich, where she resided until one year ago. Married four years. First became pregnant three years ago. After being in labor for two days a forceps delivery was attempted, but failed. An assistant of Professor Winckel was called in, who performed craniotomy. He informed the patient at that time that in the event she should become pregnant again, premature labor should be induced not beyond the thirtieth week, as the pelvis was not sufficiently large to permit the delivery of a full-grown living child.

Soon after coming to Chicago she became pregnant a second time, and allowed gestation to progress to full term. She was attended by Dr. Broell, attending obstetrician to St. Joseph's Hospital, who, upon examination, corroborated the statement previously made to her, that the pelvic capacity was such as to render the passage of the child impossible without resort to a mutilating operation on the child. She had been in labor for fifteen hours when she was admitted into St. Joseph's Hospital, October 1, 1892. Although the labor pains had been regular and strong, the head had not entered the pelvis. The patient was prepared at once for the operation. The abdominal wall in the middle line was exceedingly thin. The operation was performed very quickly, the patient being under the influence of chloroform, and a large living child delivered. The placenta was nearly separated as soon as the uterus was brought out from the abdominal incision. The uterus contracted firmly immediately after the delivery of the child. The uterus was constricted below the wound as soon as it was brought out of the abdomen, and the amount of blood lost during the entire operation did not exceed that of a normal delivery. The patient never had an ache or pain, and left the hospital in less than three weeks after the operation. Mother and child remain well at the present time.

REMARKS.—In both of these cases hemorrhage was completely arrested by the sutures. No oozing occurred from the needle punctures, as in both instances the last row of sutures was made with fine catgut and an ordinary sewing needle. All of the sutures are absorbed except those of the third row, which become encysted between the uterine and peritoneal cavities. It is advisable to use as many absorbable sutures as possible, but for the third row a material should be used which can be relied upon in maintaining approximation between the inverted serous surfaces for a sufficient length of time. My experience with these two cases has satisfied me that laparo-hysterotomy can be done on the parturient woman with as small a maternal mortality as now attends ovariectomy, and that unless the uterus itself is the seat of a removable life-threatening disease a hysterectomy is absolutely contra-indicated. The time is at hand when gynecologists must, in consonance with modern surgical teachings and practice, mitigate the *furor operativus* and resort more and more to conservative instead of mutilating operations. The generative organs of the female should constitute no exception to the golden rule, never to sacrifice an organ unless it is the seat of an otherwise incurable disease.

Laparo-hysterotomy for the Removal of Uterine Myo-fibroma.—I have already alluded to a form of myo-fibroma as another indication for laparo-hysterotomy. The removal of the uterine appendages and hysterectomy in the treatment of myo-fibroma are mutilating operations, and should be reserved for cases in which there is no other alternative. I wish to speak in this connection of laparo-hysterotomy as a valuable surgical resource in the treatment of myo-fibroma of considerable size in young women, located within or near the uterine cavity. I will premise

my remarks by the report of a case that has recently come under my observation.

CASE III.—The patient was a married woman, thirty-eight years of age, who had borne three children, the youngest being eight years of age. She dates her illness back seven years, but was not aware of its nature until recently. For the last six years menstruation has been profuse, and at times painful. She was admitted into St. Joseph's Hospital November 23, 1892, and the operation was performed a week later. Patient was somewhat anæmic, otherwise her health was not impaired. On examination a hard, smooth tumor was found in the lower part of the abdomen, reaching upward as far as the umbilicus. Vaginal examination revealed a condition which very much resembled the first stage of labor. The os uteri was found high up, widely dilated, and occupied by a smooth, hard tumor, which might have been very easily mistaken for a foetal head. Bi-manual examination satisfied me that the tumor was intra-uterine and single. Owing to the high position of the uterus and size of the tumor, I regarded a vaginal operation as uncertain and dangerous. I determined, if possible, to save the uterus and appendages, and to remove the tumor by laparo-hysterotomy. On opening the abdomen it was found that the tumor occupied the lower left and posterior part of the uterus. I incised the uterus in the median line from a point a little below the cornua to within two inches of the cervix. I had to cut through nearly the entire thickness of the muscular wall before the tumor was reached. The bleeding was moderate and was readily controlled by the use of hæmostatic forceps. As soon as the tumor was reached the work of enucleation commenced. At a number of points I had to cut strong bands of connective tissue, which seemed to extend from the uterus into the substance of the tumor. When the lower part of the tumor was reached it was discovered that on the side toward the uterine cavity, at a point a little above the cervix, the enucleated part was covered by a patch of mucous membrane. Considerable hemorrhage attended and followed the enucleation, which was arrested by packing with a long strip of iodoform gauze. A uterine sound was now introduced from below, and the mucous membrane of the uterine cavity incised upon it the whole length of the bed of the tumor, and the end of the gauze tampon brought down into the vagina. The uterine incision was closed in the manner described before, and the sutures arrested the hemorrhage completely. The abdominal incision was closed in the usual manner. The tumor weighed four pounds. Not a single unfavorable symptom followed the operation. On the fifth day the tampon was removed, the vagina irrigated with a weak solution of corrosive sublimate, and loosely packed with iodoform gauze, which was allowed to remain three or four days.

The patient left the hospital at the end of the fourth week, and has remained in excellent health since. Menstruation has been normal in frequency and quantity since the operation.

It appears to me that in such cases laparo-hysterotomy is the ideal operation, and should take the place of oöphorectomy, hysterectomy, and vaginal removal by *morcellement*. In the non-pregnant uterus the tissues are much firmer and less vascular, and the incision has to be made almost exclusively with the knife. The knife should be laid aside as

soon as the tumor is reached, when enucleation is effected with the fingers, curved, blunt-pointed scissors, or a Kocher's director. The hemorrhage from the bed of the tumor can be controlled best by the antiseptic tampon, which must extend into the vagina, serving at the same time the useful purpose of an efficient capillary drain. The mucous membrane was incised the whole length of the bed of the tumor for the purpose of securing free drainage and to facilitate the removal of the tampon. The hemorrhage from the uterine incision can be readily arrested by suturing.

I beg to submit for further consideration the following

CONCLUSIONS.

1. Laparo-hysterotomy is justifiable when delivery through the normal passage is impossible without mutilation of the living child.
2. It is absolutely indicated where the conjugata vera is less than two and a half inches, when obstruction is due to fixed pelvic tumors and advanced malignant disease of the cervix.
3. Mutilating operations on a living child for the purpose of effecting delivery are no longer legitimate obstetric procedures, as laparo-hysterotomy and symphysiotomy are life-saving operations for both mother and child.
4. Hysterectomy after laparo-hysterotomy is only justifiable if the uterus itself is the seat of a life-threatening removable disease.
5. Elastic constriction as a hæmostatic measure should not be resorted to in laparo-hysterotomy before the delivery of the child.
6. The uterine incision should be enlarged to the requisite extent by tearing for the purpose of diminishing hemorrhage.
7. The visceral wound should be closed by four rows of sutures applied in such a manner as to absolutely arrest the hemorrhage and completely separate the uterine from the peritoneal cavity.
8. Laparo-hysterotomy is also indicated in the operative treatment of single, large myo-fibroma of the uterus in young women when the tumor is located within or near the uterine cavity.
9. In such cases the uterine incision should be closed in the same manner as in operations on the pregnant uterus, and the bed of the tumor should be packed with iodoform gauze, which is brought through the cervix into the vagina, thus serving the double purpose as a hæmostatic tampon and capillary drain.