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CAESAREAN SECTION AND ITS MODIFICATIONS, WITH AN ADDITIONAL LIST OF FIVE CASES.

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CAESAREAN section is an operation whereby an opening is made in the abdominal wall, and another in the uterus, through which the foetus is extracted.

According to Pliny, it is named Caesarean because the first of the Caesars was so extracted from his mother's womb as she was dying. According to another version it is named from the operation itself, *caeso matris utero*.

This operation was at first made upon dead women at a more or less advanced state of pregnancy. It is attributed to Numa Pompilius, one of the first kings of Rome, who enacted (*lex regia*) that a pregnant woman deceased could not be interred until the foetus was extracted. This law remained in operation throughout all countries under Roman rule, and was approved by the Church, as well as adopted as a civil law by Northern States, more especially Germany. For many years they dared not perform the operation upon a living woman, and in this way encouraged the performance of craniotomy, as the passage of the foetus through the pelvis in cases of deformity was impossible without mutilation.

Levret and Mauriceau deny that this operation was known to the ancients, but Dionis and Gardien refer to Pliny's *Natural History*. Dr. Mansfield published a work "On the Antiquity of Gastrotomy and Hysterotomy on the Living" (*Weber, das*

Alter des Bauch- und Gebärmutterschnitts am Lebenden zu Braunschweig, 1824).

He states that in an earlier work named *Mischnajoth*, written about 1400, there is this passage, "In a twin birth, neither the first child which by section of the belly is brought into the world, nor the one coming after, can attain the rights of heirship or priestly office."

Nicolai Falconiis recorded a case at Venice in 1491. The case of Jacob Niefer, the Swiss peasant who performed it upon his own wife, is frequently quoted, but most authorities are agreed that it was much later before it was generally attempted upon the living woman. In fact, we need only refer to the action of Mauriceau in the case treated by himself and Chamberlen, where the operation was delayed till after death, although Mauriceau was in actual attendance for several days. He wrote: "The child had been dead to all appearance about four days, and I told all the assistants that she could not be delivered. They asked me to perform Caesarean section, which I did not wish to do, knowing that it was always certain death to the mother." This poor woman died with her infant in utero twenty-four hours afterwards.

Rousset, physician to Catherine de Medicis, and contemporary of Paré, published a work upon the subject in 1581. This book was translated into Latin about ten years later. The author attempted to prove the possibility of saving the mother and child by means of this operation, but his views were opposed by Paré, Guillemeau, and others. In the middle of last century, the subject divided operators into two sections, the Symphyseans and Caesareans, or those who advocated division of the symphysis pubis and those who advocated Caesarean section.

It may be taken as a recognised rule in midwifery that no woman should be allowed to die undelivered without some attempt being made to save her and her offspring, or, at least to save her at the expense of her child.

Concerning the latter point, whether we are justified in destroying the infant when alive, there has been, and still exists, difference of opinion, due in some measure to religious belief and likewise to the personal feeling of the husband, who

felt that very little hope was held out to him that his wife could be saved by section. Amongst such men we had Napoleon, who, when appealed to by Dubois, said: "Treat the Empress as you would a shopkeeper's wife in the Rue St. Martin, but, if one life must be lost, by all means save the mother." In marked contrast to him we had Henry VIII., who, when thus questioned before the birth of his son Edward, exclaimed: "Save the child by all means, for other wives can be easily found." At the present time such men might be put down as either a good husband but a bad father, or a good father but a bad husband.

The doctrine of the Roman Catholic Church has been that, if you could not extract the child without killing it, you could not, without mortal sin, do so, and likewise until lately, it was held that the infant could not be baptised in the uterus, as it should be *natus* before it could be *renatus* by baptism.

Of late years the happy results following Caesarean section and Porro's operation have done much to efface the dreadful feeling, that we have got in such cases to decide whether the life of the mother or that of the child is to have our preference, seeing it is now quite possible to save both.

Barnes wrote: "Caesarean section is resorted to with a feeling akin to despair. Embryotomy stands first, and must be adopted in every case where it can be carried out without injuring the mother. Caesarean section comes last, and must be resorted to in those cases where embryotomy is either impracticable, or cannot be carried out without injuring the mother. There is, therefore, no election. The law is defined and clear. Caesarean section is the last refuge of stern necessity."

As against this statement, Dr. Barnes has recently said: "It is no longer permitted to us, without ample proof of clear necessity, to sacrifice the child in order to save the mother. The cases in which the two lives are supposed to stand in antagonism are vanishing before the light of modern science and skill."

If anything is needed to sicken one at the revolting practice of craniotomy, I might be allowed to relate the obstetric history

of a rachitic woman, who during her three last confinements was under my personal care :

1st—1862,	-	-	Embryotomy.
2nd—1863,	-	-	Embryotomy (labour induced).
3rd—1864,	-	-	Embryotomy.
4th—1865,	-	-	Induced labour at half term.
5th— — ,	-	-	Embryotomy (Birmingham, L.I. Hosp.).
6th—1868,	-	-	Induced labour at half term.
7th—1870,	-	-	Embryotomy.
8th—1871,	-	-	Embryotomy (eighth month).
9th—1873,	-	-	Embryotomy.
10th—1874,	-	-	Embryotomy.
11th—1875,	-	-	Induced labour at half term.

We must never forget that we have a sacred trust, and I hold we have no right to sacrifice a child, however unequal its life may be in some cases to that of the mother. In advocating the preference for section as against craniotomy in the living child, I do so only after very mature consideration, and with a feeling that to do otherwise would be to sacrifice a life which I was bound to preserve. I think the time has come when the lives of the mother and child may alike be saved, and prefer to think that an infant come to maturity is destined for something greater than to have its glimmering life extinguished by an accoucheur skilled in the use of a dreadful perforator. Let our motto be, "We live to save and not to destroy."

In another case where the obstetric history was like the preceding one, Caesarean section was performed, and the mother now attained her long wished-for desire, a living child.

Burns in twenty-four cases gave twenty-two deaths, whilst others gave the death-rate as from 50°/o to 100°/o.

With such results it is not to be wondered at that so many opposed the operation. In England, for example, accoucheurs condemned it absolutely. In Paris, during half a century, there was not a successful case, although it had been performed about sixty times. In the large Maternity Hospitals of Paris and Vienna with from four to eight thousand confinements in the year, not a single successful case of Caesarean section has been recorded. No doubt now exists but that the great fatality

was due to the fact that the operation was only resorted to after other measures had failed.

Indications for the operation.—As regards the general indications for the operation, of course they vary in the hands of different operators, as some, still looking upon Caesarean section as a last resource, divide the indications into absolute and relative. The absolute is where the deformity of the pelvis is so pronounced that the passage of even a mutilated foetus is impossible, whilst the relative is where they may remove a mutilated foetus by the natural passage with as good or a better result for the mother. It is here that difference of opinion exists. Baudelocque admitted Caesarean section in cases with a conjugate diameter under two and a half inches; Cazeaux two inches; Tarnier two inches, and Depaul from one and a half to two and a quarter inches where the child was alive, and under one and a half inch when the foetus was dead. Stolz advocated Caesarean section whenever the child was alive and could not be brought through the natural passage.

Scanzoni	-	-	-	-	under three inches.
Naegele	-	-	-	-	„ two „
Spiegelberg	-	-	-	-	„ „ „
Barnes	-	-	-	-	„ one and a half inch.
Playfair	-	-	-	-	„ „ „
Leishman	-	-	-	-	„ „ „

Of late years, the good results following Caesarean section in the hands of Cameron, Leopold, Sanger, and other operators has materially changed the views of many authors, who now favour Caesarean section more than they have done in the past.

Lusk, at the International Congress held at Washington in 1887, declared that Caesarean section was preferable to Embryotomy even with a conjugate diameter from two and a half to three inches when the child was alive.

It can well be urged that:

- (1) Embryotomy in a very contracted pelvis is as dangerous to the mother as Caesarean section.
- (2) Embryotomy always compromises the life of the child, whilst Caesarean section gives a living child.
- (3) No one has any right to sacrifice a child where he can save it, without exposing the mother to any additional risk.

For these reasons the operation should be one of election when the child is alive, and it should be performed before the patient is exhausted: in fact, early after labour has commenced, or even at full term before labour sets in, especially in multiparae. In all cases it should be done before rupture of the membranes, and if possible the patient should be placed under the care of an experienced operator.

Little difficulty is experienced in obtaining the consent of the patient and her friends, and it is better to have her under observation previous to the operation, so as to regulate her diet, and have her prepared for operation beforehand.

A very important point in favour of Caesarean section is that the Fallopian tubes can be tied and divided, so as to prevent subsequent conception, whereas Embryotomy may require to be performed ten or a dozen times.

Besides deformity of the pelvis, other conditions, such as tumours or cancer of the cervix uteri, may exist which would demand either Caesarean section or some modification of it.

If the child be dead and the conjugate diameter not over an inch and a half, Caesarean section should be done.

Rousset, the earliest writer upon this subject recognised the indications, the one furnished by the foetus, and the other by the mother. Under the first category he placed excessive size of the foetus, monstrosities, and faulty positions. Under the second he placed marked contractions from whatever cause. Some operators would include placenta-*prævia* and puerperal convulsions. Caesarean section might be advisable in some cases of eclampsia, but a skilful obstetrician would never think of such procedure in the case of placenta-*prævia*. In fact, the operators who advocate this step are surgeons who have little or no experience in obstetric practice.

Our decision for operation should be based upon the degree of contraction of the pelvis, the size of the child's head, and its reducibility, unless the obstruction is due to some other cause, such as cancer or the presence of a tumour in the pelvic cavity.

Every practitioner should be able to form a fair estimate of the amount of contraction, as it is easier to measure a contracted pelvis than a normal one, and it does not require

a highly skilled obstetrician to say before labour has commenced, or during the early stage of the process, that the diameter of the pelvis is, or is not less than three inches, and as a matter of fact, such a pronouncement should be within the skill of the ordinary practitioner, who should be more than a generally useful person, otherwise he will sink to the level of an ignorant midwife. Not only must he be able to form an estimate of the amount of contraction, but, by patient study of normal cases, qualify himself to form an opinion as to whether it will be impossible for a living child to pass, and also whether, under the difficult circumstances in which he may be placed, it would not be better to send the patient where Caesarean section could be safely performed than to extract a mutilated foetus through a minimum diameter.

With a diameter under two and a half inches, where engagement of the head is impossible, no one should hesitate to advise Caesarean section, although there will always remain cases such as where the child is dead or a subject of hydrocephalus, in which craniotomy may be resorted to.

Experience alone will enable one to avoid extreme measures in cases with a conjugate diameter measuring more than three inches, and where the skilled practitioner will weigh the chances between premature induction of labour and symphysiotomy.

There can be no questioning that Caesarean section is a highly dangerous operation, but the danger, it should be remembered, depends for the most part on delay, and death most frequently results not so much from the operation, as from previous operative abuse, which is the just term for all injudicious attempts to extract the foetus through a deformed natural passage.

Success depends upon prompt interference before the patient is exhausted, as then there is less danger from haemorrhage, delayed shock, or peritonitis.

When Caesarean section has been resolved upon, another question presents itself, namely, whether Caesarean section or Porro's operation is preferable. If the former, there still remains to be decided whether the operation will be

accompanied or followed by a removal of the ovaries, or the patient be sterilised by the simple expedient of tying and dividing the Fallopian tubes. This we have done in about fifty cases and no harm has resulted, although theorists would have us believe that such a procedure would be surely followed by haematocele. Where there is a choice of operation, Caesarean section is to be preferred, as it can be completed much sooner, and is free from the danger of shock and peritonitis which might complicate Porro's operation.

The preparation of the patient will depend upon the urgency of the case. When she is under observation, it is better to confine her to bed for a couple of days beforehand, and the bowels should be moved by an enema and a slight laxative. The abdomen is washed and gently scrubbed, and the parts shaved, whilst the vagina is cleaned and rendered aseptic. The preparation in fact is the same as in any other abdominal section. The operator and his assistants who have to do with the case must be exceptionally careful in cleansing and disinfecting their hands, whilst the chief nurse should see that the instruments and sponges are sterilised and counted.

Very few instruments are necessary, and should comprise two straight scalpels and one blunt-pointed bistoury, pressure forceps, dissecting forceps, scissors, director, twenty straight two and a half inch Hagedorn needles, compression pessary, aseptic silk, silk-worm gut, adhesive plaster, and dressings.

The catheter should always be passed into the bladder shortly before operation. The needles should be threaded in pairs beforehand, with No. 3 Chinese twist silk ligatures, about twenty inches long, and placed in a towel wrung out of 1-30 carbolic solution, ready for use.

Palpation will reveal the position of the foetus, and this is all the more important, as from this you will know the attachment or site of the placenta.

Briefly, my experience in Caesarean section has shown me that in dorso-posterior positions the placenta is attached upon the anterior wall, whilst in dorso-anterior positions the placenta is upon the posterior wall.

(a) Thus, in the first cranial position, or O. L. A., the placenta will be found upon the posterior wall, and somewhat to the right side.

(b) In the second cranial position, or O. D. A., the placenta will be upon the posterior wall, and somewhat to the left side.

(c) In the third cranial position, or O. D. P., the placenta will be upon the anterior wall, and somewhat to the left side.

(d) In the fourth cranial position, or O. L. P., the placenta will be upon the anterior wall, and somewhat to the right side.



FIG. 1.

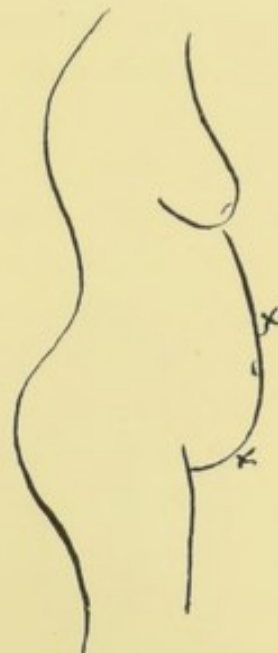


FIG. 2.

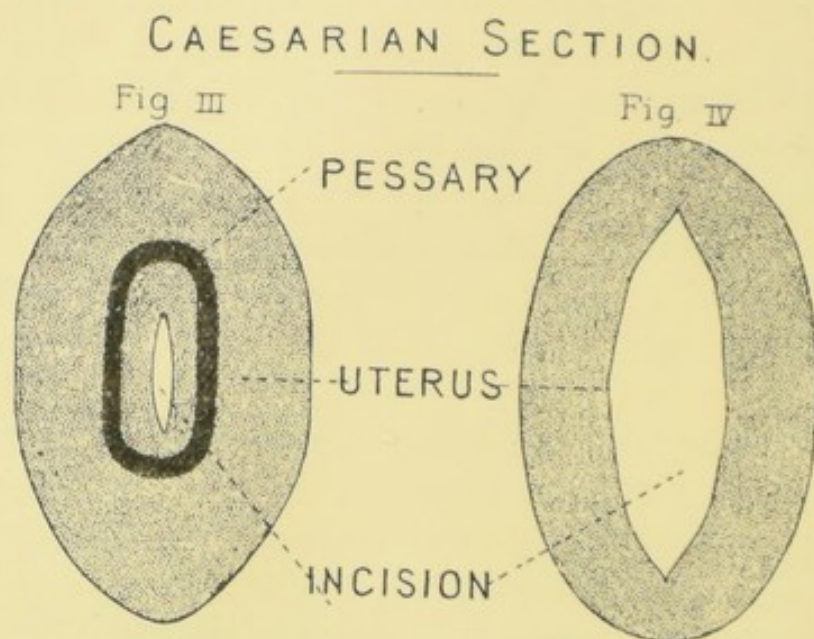
The foetus and placenta will be found in the same relation in the various pelvic positions.

From this knowledge you know when your uterine incision is likely to cut down upon the placenta, and you also form an idea as to how you will extract the foetus. The abdominal incision should be made in the median line, as in ovariectomy, and it will vary in situation according to the distension of the abdominal wall.

Thus, if the abdomen takes the form as seen in Fig. 1, an incision of from five to six inches may be got without extending beyond the umbilicus, but when it is pendulous as in Fig. 2, the incision must of necessity extend more or less above the umbilicus.

Before opening the uterus, the operator should satisfy himself that the uterus is not only in the median line, but that it is not twisted upon its axis. This is found by locating the position of the Fallopian tubes by means of the fingers. He will frequently find the left tube more or less in front, as the uterus is usually rotated to the right. This displacement must be corrected, and if necessary an assistant can easily keep the uterus in position by pressing with his hand on the right side.

When the placenta has its attachment upon the anterior wall, the site is seen to bulge, and upon palpation has a fluctuant feeling akin to a large pointing abscess.



The next point is to open the uterus with as little loss of blood as possible, and this can be done by placing a flat vulcanite pessary upon the uterine wall around the point to be incised, as in Fig. 3.

The operator with the fingers of his left hand applies pressure upon the pessary, whilst his assistant does the same on the opposite side. The incision is then made with two or three strokes of the scalpel, and the blood sponged away by the assistant with his right hand. After this has been done, no more bleeding takes place unless the placenta is attached in front, as the pressure with the pessary thoroughly prevents

even oozing. Care should be taken not to puncture the membranes, which will soon be observed and recognised by their pearly colour. If the placenta intervenes, this method of pressure is beneficial not only in preventing bleeding, but also in permitting us to observe its tissue, which is recognised by its darker colour.

Whenever the membranes are reached, a director is placed within the opening, which is then enlarged with a blunt pointed bistoury, upwards and downwards as far as the pessary will admit. At this stage the compression pessary is removed, and the incision extended upwards and downwards sufficiently to permit the passage of the foetus. The extension of the incision downwards should be limited, as it is likely to interfere with proper contraction of the uterus. Should the placenta intervene, it must be dealt with as a placenta praevia after completing the incision, that is, either separated upon one side or, if central, pierced by the hand. There must be no hesitation in extending the incision, which is made upwards and downwards from within outwards in each direction with a blunt pointed bistoury, so as to make an incision of about five or six inches, as in Fig. 4. The left hand is inserted without rupturing the membranes till the head is being turned out, or the feet grasped, and then the child should be extracted without delay. On no account should the hand be withdrawn after its insertion, unless during extraction of the foetus, as the uterus speedily contracts. If the shoulder presents, a hand should be placed upon it to prevent its expulsion, as it adds very much to the difficulty when any portion of the child's body is allowed to protrude.

The child having been extracted, the assistant places a large flat sponge over the upper angle of the abdominal incision, to prevent the bowels from escaping, and then with both hands grasps the uterus, so as to prevent bleeding.

The cord having been tied and divided, the placenta is immediately removed with the left hand, great care being taken to secure the removal of all membranes and to prevent the entrance of blood into the peritoneal cavity. The assistant now everts the uterus from the cavity, and pushes a flat sponge behind it. The lips of the uterine wound are next

everted, the assistant grasping the upper angle and wall with his right hand, and the lower angle and wall with the left, as in Fig. 5.



FIG. 5.

The operator immediately inserts the silk ligatures, beginning at the middle, each suture grasping the entire wall, with the exception of the mucosa. From seven to ten sutures should suffice, as with the contraction of the uterus the incision is greatly diminished.

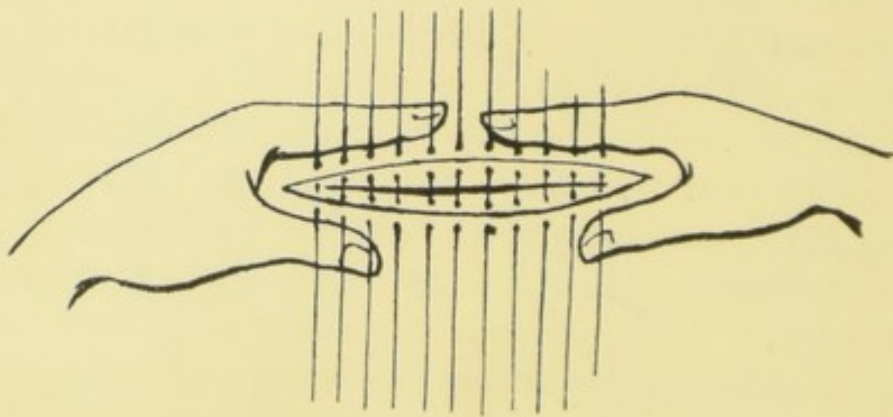


FIG. 6.

This accomplished, the sutures are gathered up and a large flat sponge laid over the anterior wall, and another behind. Firm compression or kneading is then made through the sponges, with the result that the uterus contracts firmly. The assistant should again seize the uterus as before, whilst the operator ties the sutures. When this has been accomplished, the whole organ is enveloped in a large, warm, flat sponge, and firm compression again made so as to ensure thorough contraction. Should any oozing appear at the needle punctures, a second warm sponge should be applied, and very slight compression will suffice to overcome any tendency

to relaxation. Should the peritoneal edges gape at any points, a few superficial fine sutures should be inserted to bring the margins together.

The performance of hysterectomy for bleeding is bad treatment, and indicates that the operator has lost his nerve, as pressure with a warm sponge with both hands never fails to secure thorough contraction.

Several operators advise the introduction of a drainage tube through the cervix and vagina, and the leaving it there to act as a drain. Nothing could be worse. Of course, it is the procedure of a surgeon, but everyone who has practised midwifery knows that the presence even of a clot in the uterus may lead to serious haemorrhage. Such a body as a tube, if not expelled, would induce haemorrhage, distension of the uterus, and bursting of the incision, with speedy death of the patient. This is no mere theory, but is what has actually taken place where drainage has been resorted to. On no condition should the uterine cavity be washed out or medicated in any way. The less the parts are interfered with the better.

After the ligatures have been cut short, the next step is to ligature and divide the Fallopian tubes with aseptic silk, in order to prevent future conception. Of course, the consent of the patient for this procedure should have been obtained beforehand. Two ligatures are tied upon each tube, which is then divided between those points. This method is effective, and leads to no complications nor bad results, nor is menstruation interfered with. Next the cavity is cleaned by the removal of all clot, etc., and the uterus replaced. The external wound in the parietes is closed in the usual way with silk-worm sutures. The vagina should now be cleansed of all clot and sponged out, after which an antiseptic pad should be applied to the vulva.

The wound should be dusted with iodoform, and a few layers of gauze placed over the wound. This should be secured with plaster, both to prevent slipping of the dressing and strain on the sutures, in case of sickness or cough. A sheet of Gamgee is next applied, and then the bandage.

The after treatment consists of sips of warm water, say a tea-spoonful every fifteen minutes for twelve or twenty-four hours, after which milk and soda may be given in increasing quantities. For a few nights, a half-grain morphine suppository is given. The urine should be drawn off every six hours for two or three days, care being taken to thoroughly cleanse the parts before doing so.

On the fourth day, two tea-spoonfuls of glycerine in a couple of ounces of soapy water is administered as an enema, and if necessary some slight aperient by the mouth. The bowels having been moved, the patient is allowed chicken soup, fish, eggs, beef-tea, etc. If the child is to be nursed, it may be put to the breast on the second or third day.

The abdominal sutures may be removed in from ten to fourteen days, and the patient allowed to rise at the end of four weeks. She should always wear an abdominal belt, and should be warned against kneeling when scrubbing floors, as this is apt to induce hernia from pressure and stretching of the cicatrix.

In review, it may be explained that rupture of the membranes, either intentionally or by labour, means a contraction of the uterine wall, and as a consequence a greater wounding of the uterine tissue, in order to secure a sufficient opening to extract the child. Some operators, instead of using manual or pessary compression to prevent bleeding when opening the uterus, make use of an elastic ligature. The uterus is first everted, and the elastic ligature then passed round the cervix. This not only necessitates a much larger abdominal incision, but also induces asphyxia of the foetus, and causes inertia of the uterus, as the organ does not so readily respond to kneading. Its use is therefore conducive to haemorrhage. Veit, Doleris, and Pajot have blamed it for causing death from haemorrhage, and Zweifel, Sanger, and Lusk have also noticed this complication.

Caruso advised the early removal of the ligature.

Another way of dealing with the uterine incision is by Sanger's method. In this procedure, the muscular wall of the uterus is closed with from ten to fifteen sutures which approximate to, but do not include the mucosa, and between each

suture two superficial sutures are inserted to unite peritoneum to peritoneum. Previously, the peritoneum was separated from the muscularis, and a wedge-shaped piece of muscularis removed from each side, the base of the wedge being outermost. This done, the peritoneal flaps were folded into the wound and secured by the superficial stitches. Such a detailed process is quite unnecessary, as the sutures, as recommended by Cameron, secure perfect apposition, not only of the muscular tissue, but also of the peritoneum. In fact, most operators now make use only of eight or ten deep sutures, and reserve superficial sutures to secure contact where there is any gaping between the stitches. Such unevenness can be readily avoided by beginning in the middle and working towards each end, and by taking care to keep the sutures at regular intervals.

Porro's modification. The fatal results following the early Caesarean section led to a modification of the operation. It had been found by experiment that the uterus in pregnant rabbits could be removed with better results than by simple section, and therefore it was concluded that similar results would follow in the case of women.

Blundell, in writing upon this subject, said such a method might prove an eminent and valuable improvement, but he also wrote, in speaking of deaths from peritonitis after Caesarean section, that experience sometimes contradicts our most favourite opinions, and that something of the kind would be found to occur in the cases under consideration, as he had no doubt the risk of diffused peritonitis had been greatly exaggerated. How his surmise has proved true, is seen in the present-day position of abdominal surgery.

Acting on the lines suggested, Storer of Boston in 1868 first practised amputation of the uterus after section. The case was one of pregnancy complicated with a fibroid of the uterus. He was interrupted by such an alarming haemorrhage that he had to remove the body and fundus with the ovaries, but his patient died three days afterwards. This was an operation of necessity.

Porro first performed the operation as a matter of choice, as he considered it impossible to secure the uterine incision in Caesarean section, so as to prevent the flow of blood and septic

fluid into the peritoneal cavity. The results got under anti-septics in other abdominal operations encouraged him to make the attempt, and in 1876 he did so with happy results. Others took up the operation, and very quickly the old Caesarean section was superseded by it, but only for a few years, as now Caesarean section can be performed without the slightest danger from bleeding, peritonitis, septicaemia, or other dangers that Porro's operation sought to avert.

At the present day, Porro's operation is an operation of exception, that is only necessary in some conditions, such as serious rupture of the uterus, or where labour is obstructed by a large fibroid. As regards the steps of the operation, it is to begin with similar to Caesarean section. It is only after the uterus has been emptied that it varies, as at this point the uterus is everted and an elastic ligature applied round it, just above the os internum.

The uterine tissues are then compressed until the bleeding has ceased. The uterus is then removed, and the stump secured outside the abdominal wound, and maintained in position by needles and a serrenoeud.

Porro, upon emptying the uterus, transfixed it with a trocar and canula at the union of the body and cervix. He then withdrew the trocar, and passed two silver wires through the canula, which was also withdrawn and the wires tied, one upon the right and the other upon the left side, including in their grasp the ovaries and tubes. This done, the uterus and appendages above the wires were cut away, whilst the stump was secured outside. The method has been improved by transfixing with needles and ligating with a serrenoeud instead of with separate wires.

The stump is dusted with iodoform, and dressed with gauze all round. The needles should be raised to allow of proper packing. A layer of sublimated Gamgee should be placed over all. It may require to be dressed daily, and the ligated portion usually separates about the tenth day, but the raw cavity requires regular dressing till perfectly healed.

It was urged as an important factor that Porro's operation prevented future conceptions, but this end is gained in Caesarean section by the more simple method of tying and dividing the tubes.

Some operators now prefer to remove the entire uterus, where a fibroma or a myoma complicates the condition, and such is my practice. The following case illustrates the method adopted in such a complication :

Mrs. C., aged 36, was admitted to the Western Infirmary, under my care, on July 16th, 1895, complaining of great distension of the abdomen. The patient considered herself about five months pregnant, but as the abdomen was so much distended she consulted me regarding her condition. She stated that she had always enjoyed the best of health until the spring of the present year, that menstruation commenced at the age of 15 and continued perfectly normal and regular until February, 1895, that she had been married for about two years, and had had no children and no miscarriages.

About eight years ago the patient noticed for the first time, and quite by accident, a swelling in the left iliac region. It was about the size of a hen's egg when she first felt it. For a month or two it increased in size slightly, then ceased growing, and remained stationary until she became pregnant at the end of February. On February 19th she menstruated for the last time. Three or four weeks afterwards she began to be troubled with morning sickness, and about the middle of June she felt foetal movements for the first time. She was quite satisfied that she was pregnant: but what troubled her was the fact that her abdomen became so rapidly distended. It was, however, during the six or seven weeks previous to her admission into hospital that the distension seemed to increase most rapidly.

Her general condition on admission was not very satisfactory. There was great oedema of the legs and thighs, but apparently no ascites. There was some dyspnoea. The mucous membranes were of a good colour. She had no difficulty in passing urine, but her bowels had been very constipated. There was nothing abnormal in the lungs and heart: milk could be expressed from both breasts. The abdomen was much distended, presenting the appearance of a pregnancy at full time. It measured 37 inches at the level of the umbilicus. On palpating the abdominal tumours, a large smooth, round, hard swelling was found to occupy the left side. It crossed the middle line, and was continuous with a swelling on the right

ADDITIONAL LIST OF DR. MURDOCH CAMERON'S CASES OF CAESAREAN SECTION.

No.	Date.	Age.	Number of Pregnancy.	Diameter of Conjugate.	Duration of Labour.	Results.		Remarks.
						Mother.	Child.	
39	Dec. 9th, 1897,	34	9th	Inches. 2	Hours. 2	Alive	Alive	Fallopian Tubes Tied.
40	June 6th, 1898,	27	3rd	2½	2	Alive	Alive	Do. do.
41	Jan. 4th, 1899,	28	2nd	2½	3	Alive	Alive	Do. do.
42	Apr. 13th, 1899,	34	5th	2¾	6	Alive	Alive	Do. do.
43	Oct. 12th, 1899,	32	5th	2	3	Alive	Alive	Do. do.

side, from which it was separated, however, by a sulcus. This swelling on the right side was elastic in consistence, but two or three hard rounded nodules could be distinctly made out upon its anterior surface. The uterine *souffle* could be heard over it, but no foetal heart sounds could be recognised.

On vaginal examination, the whole cavity of the pelvis was filled up with a hard mass firmly impacted into it, and continuous with the tumour above. So completely did this tumour block up the pelvic cavity that the forefinger could with difficulty be passed up the vagina. The uterus appeared to be very much drawn up, as the examining finger could not reach the os externum.

On July 19th the patient was examined under chloroform, but nothing further was made out.

On July 22nd abdominal section was performed. On opening into the abdomen a large irregular tumour was met with, the left portion consisting of an interstitial myoma, in the right of the distended uterus. In addition, implanted on the upper and posterior uterine walls, were several subserous myomata, varying in size from a walnut to an orange. Having made an incision through the anterior wall, a foetus of 5 months was removed. It was perfectly formed, and had evidently only quite recently died. The placenta was well developed, and was easily detached. An elastic ligature was passed round the uterus and tumours as close as possible to the cervix and secured, after which the uterus with the tumours were cut away. The uterine and ovarian arteries could now be more easily reached, and were ligatured. The ovaries and tubes were also removed. The tumour blocking up the pelvis was with some difficulty drawn up on account of impaction and adhesions. Having enucleated this mass of tumour nothing remained but the cervix, which was also separated from its connections. The peritoneum was stitched round and round with catgut sutures to the mucous membrane of the vagina. These sutures were then drawn down into the vaginal canal by means of a pair of long forceps passed up into the abdomen through the vagina. The abdominal wound was then closed with silk-worm sutures; no drainage tube was used. The parts removed weighed 27 lbs.

The patient made a good recovery. She had a little sickness on the third and fourth days, when the temperature thrice registered 100.2° F. After that it never rose above 100° , and fell to normal after the ligatures were discharged from the vagina on the tenth to the twelfth days. She left the hospital in the seventh week after the operation perfectly well.

The description given beforehand may be applied to all these cases so far as regards the operation, but it may be mentioned that the infant in the fourth case developed icterus of a severe type. Purpura spots appeared on the face, and the child rapidly got weaker and died the following day.

One point of note happened in the fifth case, namely, a slight difficulty was experienced in removing the after-coming head of the child from the uterus owing to its being grasped, not by the uterine wound, but by the retraction ring. This complication was easily overcome, but as I have never heard or read of such a fact, I here state it, recognising that such a contraction might readily form a delay during the second stage in a normal labour.

