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Extra-peritoneal Cæsarean Section.

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To those who are acquainted with the advantages and safety of extra-peritoneal Cæsarean section, the prejudice still manifested towards it is very puzzling. It has found its detractors at every medical society in the British Islands. The discussions on this operation, like those on its ally, pubiotomy, have sometimes degenerated into personal questions. So much is this the fact that hysterotomy may be said to have received almost universal condemnation in Great Britain, for save in Glasgow and Dublin it has found no sponsor. Again, like pubiotomy, its opponents are drawn largely from those who have never performed, seen performed or properly understood the indications and technique. Nor are they seemingly aware of the fact that they are condemning under a common name many different methods, some of them wholly unsatisfactory.

So far as my personal experience goes (3 cases) I would not consider extra-peritoneal Cæsarean section an alternative to classical Cæsarean section but rather its complement. Despite the enthusiasm indulged in at meetings of Medical Societies there are certain dangers in classical Cæsarean section always present to the operator's mind. He knows that to obtain good results, the operation must be performed before or within a comparatively short time of the onset of labour; that the membranes should not be ruptured; that frequent vaginal examinations introduce an element of danger which may act as a positive contra-indication to the operation. Above all he knows that the wound is liable to imperfect healing. As proof of this one need only point to the number of deaths that have occurred from rupture of the uterus in subsequent pregnancies; to the device

of inducing adhesions between the uterine and abdominal wounds; and finally to the radical procedure of sterilization, which ensures against another pregnancy. Again it is an incontrovertible fact that amongst the most experienced advocates of the classical operation are found those who place such limitations on its indications that in many instances they prefer perforation of a living child.

It is beyond controversy that hysterotomy is free from some if not all the disadvantages that surround classical Cæsarean section. Much has been made of the rapidity of the older operation. The difference of 10 or 20 minutes is not very apparent and simply impresses on one the fact that for post-mortem cases the classical operation should be performed.

If it is true that the newer operation can be performed safely and becomes easier when the woman is far advanced in labour with the membranes ruptured and the lower uterine segment greatly thinned out; that the incision through which the child is delivered involves such a comparatively unimportant and bloodless part of the uterus that its rupture in a subsequent pregnancy would be a matter of little significance; that for practical purposes the operation is extra-peritoneal; that there is no possibility of the formation of adhesions to cause intestinal obstruction or incarceration of the uterus; that because of a pre-existing sepsis suppuration of the uterine wound does not necessarily mean general peritonitis, then surely the operation is worthy of greater consideration than it has yet received from British surgeons.

Technique.

After the usual preparations a transverse incision is made from one anterior superior spine to the other, passing about one inch above the pubes. This incision is carried down to and through the sheath of the rectus. The sheath is raised from the muscles and the latter separated with the handle of the knife.

The transversalis fascia is then broken through, laying bare the peritoneum. The peritoneum can sometimes be separated from the back of the pubes and from the bladder. The lower uterine segment is thus reached without opening the general peritoneal cavity. We do not think this is an advantage, and much prefer to open the parietal peritoneum transversely, opening the abdominal cavity and exposing the bladder and lower uterine segment covered by peritoneum. The bladder is raised, putting on the stretch the vesico-uterine fold of peritoneum. A small incision into this fold permits the passage of a finger between the uterus and bladder. On this finger the peritoneum is divided across the whole width of the vesico-uterine fold. The upper edge of the incised peritoneum is seized and separated upwards from the uterus. This edge is then stitched to the upper margin of the transverse incision in the parietal

peritoneum, to shut off the general peritoneal cavity from the field of operation and to enclose the intestines in a bag of peritoneum. Interrupted sutures should be used, as a continuous suture causes puckering and contraction of the opening. The sutures should be placed well out towards the lateral aspect of the opening to close the angles. Unless this is done communication is not shut off and fluids may enter the abdominal cavity, or the intestines may appear at the angle of the wound. It is not necessary to stitch together the two layers of peritoneum above the bladder.

Sufficient room to permit easy delivery is readily obtained by this method of exposing the lower uterine segment.

It is comparatively easy to reach the lower uterine segment without opening the peritoneum, making the operation entirely extra-peritoneal. The bladder is filled with water and pushed to one side. The peritoneum can then be separated from the abdominal wall and anterior layer of the broad ligament, laying bare the lateral aspect of the lower uterine segment.

Such a procedure is not to be recommended, as the theoretical gain in an entirely extraperitoneal operation is counteracted by the greater exposure of cellular tissue, by the small space at the operator's disposal, and by the more vascular region through which he has to work.

The lower uterine segment and cervix, however reached, are opened vertically. The head, if presenting, is delivered with the lower blade of the forceps and the other hand. If the breech presents, the child is extracted by the leg. The cord is clamped and cut.

Time is given to allow partial separation of the placenta. During this pause a hypodermic injection of ergotinin, gr. $\frac{1}{50}$, may be administered as post-partum hæmorrhage may occur. The placenta and membranes are removed and the uterus plugged with iodoform gauze, the end of which is pushed through the cervix into the vagina.

The uterine incision is closed by interrupted catgut sutures. The free edge of the peritoneum immediately above the bladder is united with catgut sutures to the upper portion of the peritoneum from which it was originally separated. The corresponding edge of the parietal peritoneum may also be brought up in this manner.

The sheath of the rectus is closed with a continuous suture of No. 3 silk (catgut if there is any possibility of infection).

The skin wound may be closed with Michel's clamps or any form of suture.

The lower uterine segment heals so perfectly that no danger of rupture of the uterus is incurred by a subsequent pregnancy.*

* Tweedy and Wrench, 2nd ed.

The reasons which have impelled me to adopt this operation and avoid its modifications are the following:—

1. Access to the uterus is very easy.
2. There is no difficulty in procuring an extra-peritoneal space sufficiently large to permit rapid and easy extraction.
3. No important vessels are severed, therefore the deaths from hæmorrhage recorded from other operations are avoided.
4. Its supposed disadvantages are of a purely theoretical nature.

Case Histories. (These operations were performed in the Rotunda Hospital.)

M.G., age 35 years. Preg. I. Labour 14 hours. Membranes ruptured 10 hours. Os almost fully dilated. Well formed lower uterine segment. Head presenting unfixed above the brim. True conjugate 6 cm. Extra-peritoneal Cæsarean section Oct. 25, 1909.

Many operators would have considered classical Cæsarean section out of the question in this case. I believed that the extra-peritoneal operation offered many advantages.

Discharged Nov. 14, 1909. Mother and child both well.

E.L., age 28 years. Preg. III. First pregnancy, pubiotomy and version. Second pregnancy, transverse. Version. Perforation of after-coming head. Extern department. Third pregnancy, extra-peritoneal Cæsarean section.

Labour 24 hours. Membranes unruptured. Os $\frac{3}{4}$ dilated. Well formed lower uterine segment. Breech presenting unfixed above the brim. Eight vaginal examinations by as many different men before admission. True conjugate $6\frac{1}{2}$ cm. Transverse 10 cm. Extra-peritoneal Cæsarean section Nov. 24, 1909. Wound suppurated and continued to discharge until the silk-suture of the aponeurosis came away.

In this case my former experience showed me that the pelvis was too small for pubiotomy to be undertaken with the certainty of success. The long duration of labour, the thinned-out lower uterine segment and the numerous vaginal examinations made classical Cæsarean section a risky procedure. That the woman was infected seems more than probable from the fact that the wound suppurated.

Discharged Jan. 15, 1910. Mother and child both well.

M.G., 23 years. Preg. IV. First pregnancy, symphysiotomy. Second pregnancy, normal, 5 lbs. Third pregnancy, normal, 9 lbs. Fourth pregnancy, extra-peritoneal Cæsarean section.

Membranes ruptured 1 a.m., January 1st, 1910. Os just beginning to dilate. Head unfixed. Pains regular and strong. Tight binder applied. 11 a.m. patient put in Walcher's position which she maintained until 8.30 p.m. ($9\frac{1}{2}$ hours). Then the os was nearly

fully dilated. Great œdema of the vulva and vagina. Fœtal heart 160—170. Maternal temperature 99° F., pulse 86. Bandl's ring nearly up to umbilicus. Head unfixed.

Extra-peritoneal Cæsarean section Jan. 1st, 1910. With this patient there was no choice but to let labour proceed as she had already had two normal deliveries. When it became evident that normal delivery was impossible the time for classical Cæsarean section had passed. Pubiotomy was possible as far as pelvic size was concerned, but the fear that the bladder might be adherent to the pubes after the open symphysiotomy made me sure that hysterotomy was the more desirable operation.

True conjugate 8 cm. Transverse 13 cm. Discharged Jan. 22, 1910. Mother and child both well.

It will be seen that I have not rushed unthinkingly into performing these operations, but on the contrary have proceeded on most conservative lines. The operations were undertaken because there were clear indications for them, but I am not at all sure that my conservatism was justified. In these cases it was certainly an easy and uncomplicated procedure, the reason being, I think, that the lower uterine segment was very large and thinned out. If subsequent operations show that a well formed lower uterine segment is not necessary and that hysterotomy can be equally well performed early in labour, then and not until then can its claim as a substitute for classical Cæsarean section be established.