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THE SCOPE OF VAGINAL SECTION.

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After the abandonment of the Freund operation for the removal of the carcinomatous uterus by the abdominal route (introduced in 1878) vaginal extirpation gradually grew in favor, and, ever since, has been widely practised. Previous to that period vaginal incision had practically been limited to cases of pelvic abscess. In 1857 Atlee removed a suppurating ovarian cyst through the posterior fornix. In 1870 Thomas described a method of removing an ovarian tumor *per vaginam*, but this operation was rarely attempted until within recent years. About 30 years ago Battey carried out vaginal oöphorectomy for the induction of the menopause. In 1887 Gusserow advocated vaginal incision in certain cases of pelvic hematocele. Since that time many other intra-pelvic conditions have been treated by operative measures carried out through the vaginal opening, and, at present, a number of enthusiastic operators advocate this route to the exclusion of the abdominal incision in a large percentage of cases.

In favor of colpotomy it is urged that there is less shock, less post-operative disturbance and less danger to life. An abdominal scar is also avoided. As regards a limited percentage of cases some of these claims may undoubtedly be sustained.

If an operation may be performed equally safely and satisfactorily by either route, the vaginal should be selected, but when this route is recommended for routine work in preference to the abdominal incision too strong a protest cannot be urged.

The ideal which some operators set before them—of merely removing some pathologic condition—is a very bad one and is out of harmony with the trend of the best work of recent years. It is equally important that removal shall be accompanied by procedures calculated to diminish the risk of after-troubles. Thus, in removing adherent structures, *e.g.*, pus tubes, it is necessary that freshly rawed peritoneal

surfaces should be covered as much as possible. This protective work cannot be carried out satisfactorily save by the abdominal route. The sigmoid flexure is very often adherent to the left diseased appendages and broad ligament. After its separation the adherent area may very often be stitched to the side wall of the pelvis so that it may not again become attached to viscera; this procedure is only possible by the abdominal route.

In dealing with the appendages of one side it is often found that the opposite tube and ovary are prolapsed and somewhat adherent so that it is advisable to separate the latter, cauterizing or covering the raw areas, and stitching the infundibulo-pelvic ligament to the side wall of the pelvis at the level of the brim so as to suspend the prolapsed structures; it is evident that such work is impossible by the vaginal route. In a considerable number of cases of pelvic disease, the vermiform appendix is also affected. Very frequently this complication is found during an abdominal operation, when it has not been suspected by the operator; occasionally, the appendix is intimately blended with an infected tube or ovary. Whenever the appendix is affected it is always best to remove it. If, therefore, an operator adopts the vaginal route extensively, it is certain that he will leave a diseased appendix in his patients in a considerable number of instances. Moreover, in removing diseased right appendages, he occasionally runs the risk of tearing the appendix. This accident as well as the tearing or cutting away of a portion of adherent intestine has happened in the practice of more than one enthusiastic colpotomist known to the author. One great advantage possessed by the operator who performs an abdominal section is that he is able to explore the entire peritoneal cavity and determine the condition of the various tissues and organs. Very frequently valuable information is acquired in reference to important structures, *e. g.*, calculus in the kidney or gall bladder, malformations, adhesions, etc. By the vaginal incision no such knowledge can be gained. The advantage claimed for colpotomy, *viz.*, that it has no abdominal scar, is too trivial for consideration, though it may appeal to the aesthetic propensities of the female sex.

The statement made as to the diminished mortality of colpotomy operations is entirely misleading. Indeed, it is almost impossible to establish a comparison with the abdominal method which is at all exact.

Operations in uncomplicated cases which may be performed as easily by one route as by the other should have, in the hands of an expert operator, an equally low mortality. Regarding complicated cases, there can be no doubt as to the greater safety of the abdominal method, all other conditions being similar.

In considering the question of choice between the abdominal and vaginal routes the size of the vagina must always be an important consideration. In the nulliparous or virgin woman there is very little scope for the performance of operations through the vaginal incision.

CONDITIONS IN WHICH THE VAGINAL ROUTE MAY BE SELECTED.

1. Myoma uteri.—Removal of small myomata may sometimes be carried out. Extirpation of the entire uterus, by morcellation, may also be safely performed when the swelling caused by the tumors is not more than five inches in diameter, when the vagina is roomy, when the tumor is partly or wholly in the pelvic cavity, and not extensively adherent.

2. Malignant disease of the uterus.—Extirpation of the uterus by the vaginal route is widely practised. In the hope of removing parametric tissue and lymphatic glands, there is a tendency to employ the abdominal operation to a greater extent. It is yet doubtful whether the latter procedure justifies the claims of its advocates.

3. Retroversion of the uterus.—Various procedures may be performed for the repair of this condition, *e. g.*, vaginal fixation, shortening of the round ligaments; but in the great majority of cases operations which involve opening the peritoneal cavity are more satisfactorily performed through an abdominal incision. The complications which are so often found with retroversion are also more easily dealt with by the latter method.

4. Inversion of the uterus.—Where operation is necessary in this condition it may usually be carried out by the vaginal route.

5. Intrapelvic adhesions.—Various operators have recommended the vaginal route for the breaking up of pelvic adhesions. In the author's experience this is an unsatisfactory proceeding. Raw areas are formed, which are certain to give rise to more adhesions. This condition can only be satisfactorily dealt with through an abdominal opening, which allows measures to be undertaken for the covering of raw areas.

6. Diseased ovaries.—In some cases these structures may be removed through a vaginal opening. Resection may also be carried out in some cases.

Ovarian cysts may sometimes be removed, but the cases should be removed with great care. Favorable ones are those which are small, movable, thin-walled and non-adherent. Unfavorable ones are those which are very large, malignant, adherent, containing many cysts, those which are intra-ligamentous or in which torsion of the pedicle has occurred.

7. Tubal disease.—Certain tubal enlargements may be removed by colpotomy, but in cases in which adhesions are numerous and complicated, the procedure may be very unsatisfactory and risky.

8. Pelvic abscess.—Incision followed by drainage is very frequently indicated, whether the products of infection are tubal, ovarian, peritonitic or cellulitic. The incision should only be made when the swelling is easily palpable through the posterior fornix.

9. Ectopic gestation.—In some cases the pregnant tube in the early weeks may be removed by vaginal section, though most operators choose the abdominal route because there is much less risk of rupturing the tube and causing hemorrhage.

After rupture of the tube and the formation of the localized pelvic hematocele vaginal incision followed by gauze drainage may be very satisfactory sometimes; however, on account of recurrent hemorrhage it is necessary to open the abdomen afterward in order to control bleeding.

10. Extensive infection of the genitalia.—In cases of infection involving the uterus and adnexa, in which total extirpation is indicated, the vaginal route is greatly favored by several operators. The author prefers the abdominal incision in the great majority of cases because through it complicating adhesions can be more satisfactorily removed and raw areas covered.

11. In cases complicated by some distant lesion, *e.g.*, heart, lung, kidney disease, etc., it is recommended that the vaginal route be employed in order to lessen the shock to the patient. In such conditions, by careful preparation of the patient, by rapidity in operating, by using local anesthesia and diminishing the general anesthesia, the author has obtained as good results by the abdominal as by the vaginal route.

12. Exploration.—Incision of the vagina for digital exploration of the pelvis may sometimes be carried out, though its scope of usefulness must be regarded as very limited.

Various forms of incision are employed, the patient in all cases being in the lithotomy position, and the vagina being opened as much as possible by means of retractors.

In cases in which great difficulties or complications arise after the vaginal operation has been commenced, it may be necessary to complete the procedure through an abdominal incision.

1. Posterior colpotomy.—The cervix is drawn downward and forward as much as possible and a transverse or T-shaped incision, an inch or more in length, made through the posterior fornix, so as to open the lowermost position of the pouch of Douglas. This method is

much less employed than anterior colpotomy. It is chiefly used in exploring the pouch of Douglas in breaking up posterior adhesions and in opening fluid collections in the pelvis; very rarely for other purposes.

2. Anterior colpotomy is much more frequently employed for operations on the uterus and appendages. Various forms of incision have been employed.

a. Transverse.—Dührssen and others have recommended a transverse incision in the anterior fornix below the junction of the bladder and cervix, an inch or more in length. The cervix being pulled downward and backward, the bladder is stripped from the cervix and anterior vaginal wall through the incision and pushed upward. The utero-vesical pouch of peritoneum is then opened.

b. Mesial.—Orthmann and others make a mesial incision through the anterior vaginal wall extending from the junction of the latter with the cervix an inch and a half or more.

c. T-shaped incision.—Mackenrodt makes a transverse incision like Dührssen's and another mesial one at right angles for an inch and a half or more through the anterior vaginal wall.

d. Webster's method.—The author makes a circular incision around the cervix just below the attachment of the vaginal wall. This is joined by a mesial incision an inch and a half or more in length, dividing the anterior vaginal wall. The cervix being well pulled down, the wall of the vaginal vault is stripped upward until the anterior pouch is reached. The anterior vaginal wall is also stripped somewhat from the base of the bladder. The utero-vesical pouch is then opened.

The advantages of this method over the others are that the uterus can be pulled down to a greater extent and that more room is obtained for intra-pelvic manipulations. Sometimes the latter may be facilitated if an additional transverse incision be made through the pouch of Douglas. Frequently when the uterus is considerably enlarged from chronic metritis it is advisable to ligature one or both uterine arteries (easily exposed in the raw surface already made). When the enlarged uterus cannot be well brought down its descent may be assisted if the base of one or both broad ligaments be divided internal to the ligatures.

At the end of the operative procedures, the uterus is pushed into place, the peritoneum closed and the original vaginal incisions closed with catgut.

When amputation of the cervix is called for in addition to the colpotomy this procedure is carried out after the closure of the peritoneum, and the vaginal flaps are then brought over the stump of the

cervix and stitched to the margin of the cervical canal. When, however, the size of the uterus is a hindrance to its descent, amputation should be carried out immediately after the stripping up of the vaginal wall.

Less of the vagina is then occupied by the organ when the body is pulled down and greater access to the pelvis may be obtained. The stump of the cervix in such a case is covered by the vaginal flap at the end of the operation.

When anterior colporrhaphy is required the necessary flap is removed when the first incision is made. The closure of the raw surface thus produced is brought about by means of continuous catgut suture at the end of the entire operative procedure.