

mic practice. Like many another subject, when touched upon superficially it is dry and devoid of interest. When one digs below the surface, gets at the heart of the matter, begins to see its bearings and why men have spent so much time and thought on it, then a flood of light is let in and he sees how it applies to and illuminates his every-day work. Not only is the science made interesting, but interest is added to his daily use of it in his practice because he does his work understandingly instead of by rule of thumb. He will probably be interested, even to following up some of the purely scientific problems which have no immediate or obvious bearing on his practical work simply because his scientific curiosity is aroused and he wants to satisfy it. To be sure, there are mathematical methods of treating some of the problems that are far beyond those of us who lack a working knowledge of the higher mathematics. This part of the subject would have no place in such an elementary course as I have outlined. Indeed, it is far from being a large and important part of the field of physiological optics; its importance has been exaggerated as the unknown is apt to be. It can be omitted much better than many other parts of the subject.

Let us make the course interesting because vital, practical, full of contact with the daily problems of the practicing ophthalmologist, by judicious mixing of laboratory and clinical work. But beware of crowding out solid, exact, sound learning and the development of mental fibre and capacity by too eager an effort to free the course from the need of concentrated application—hard work, in short. Even a child will work like a beaver at toy or task if thoroughly interested. Whoever confesses that these things have no interest for him, confesses that he is not interested in what will constitute 75 to 90% of his private practice in ophthalmology.

There are chapters of physiological optics, such as refraction, which require some understanding of geometry. This is for us the irreducible minimum of mathematics, and anyone "who has no stomach for that, let him depart; his passport shall be paid and crowns for convoy put into his purse." He has made a mistake in choosing ophthalmology as his field of labor.

Clinical Department.

AN OPERATION FOR THE CURE OF VAGINAL HERNIA.

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HERNIAE through the pelvic outlet are rare. They occur in adult life and, of forty cases collected by Macready, thirty-four were in women. The pelvic outlet is protected by the pelvic fascia and the levator ani and coccygeus mus-

cles, which form a sort of diaphragm, and through this pass the rectum, vagina and urethra. If this diaphragm is deficient in one place or another, the abdominal contents would tend to be forced through, and thus give rise to a hernia. But, contrary to what might be expected, because of its low position and structure, these pelvic herniae are infrequent. Herniae have been observed coming through different parts of the pelvic outlet, and have been named according to their anatomic situation but, because of the variety of names, there is some opportunity for confusion. For example, in *ischio-rectal* hernia the tumor enters the ischio-rectal fossa, in *pudendal* hernia the tumor comes through the labium majus, in *perineal* hernia the perineum of the male is the site, in *rectal* hernia there is a protrusion into the rectum, in *obturator* hernia the swelling comes through the obturator foramen, and in *vaginal* hernia the tumor enters the vagina.

So few cases of each variety have been observed and treated that there is only meager evidence of their nature and practically no definite method of treatment.

The following case illustrates the type of pelvic hernia passing down behind the uterus in the fossa of Douglas, pushing the upper portion of the posterior vaginal wall into the vagina and then out the vulva. This is the variety which has been called vaginal hernia:—

This woman is 41 years old, short and rather fleshy. Her general health has been good. As a result of childbearing, there was some perineal laceration. For several years prior to July, 1908, she noticed a swelling which presented at the vulva when she was sitting or was on her feet but which disappeared when she lay down. She suffered from backache and general pelvic discomfort. On the above date she underwent, at one of the hospitals, an operation for rectocele, cystocele, lacerated cervix and prolapse of uterus. These lesions were repaired and the uterus was suspended to the abdominal wall. She made a good convalescence, but as soon as she was on her feet the same swelling appeared at the vulva. In December, 1908, at another hospital, she was operated upon for a rectocele. Again the same swelling appeared at the vulva as soon as she was out of bed. About one year later she gave birth to a child and the labor was uneventful. Her condition remained unchanged as time went on, except that the swelling at the vulva became slowly larger. It was difficult for her to get about with comfort, and the surface of the swelling coming in contact with the labia majora became excoriated. She had much backache, but no urinary or intestinal disturbance. She was relieved on lying down and then was reasonably comfortable. I saw her for the first time about September, 1912.

Examination. She is short, fleshy, and in good general health. The abdomen is rather prominent and there is a median abdominal scar. The vulva is normal. When she lay down, the posterior vaginal wall was very lax, and when she strained this was pushed forward toward the vulva. When she stood this wall was forced out the vulva and made a tumor the size of a fist, which reduced itself on

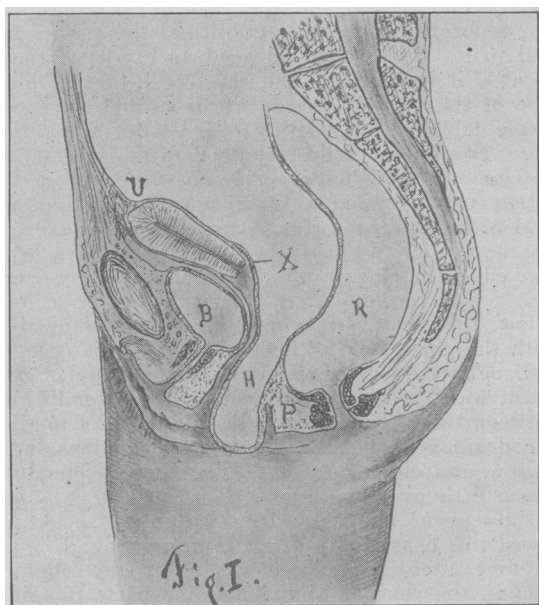
recumbency. The general appearance was that of a large rectocele, but, profiting by the previous experience of two surgeons, this tumor was examined more carefully with patient in the standing position. The contents of the tumor were lobulated, seemed more or less solid, and could be pushed up away from the vaginal wall, leaving it as a sort of sac. Moreover, the finger in the rectum did not enter the tumor and the rectum itself did not appear to be dilated. The perineum, having been repaired twice, was in good condition. I was led to believe from her history and these observations that the condition had been in the past and was at present that of a vaginal hernia. Having no precedent for operation, it seemed best to explore the pelvic cavity from above and then be guided accordingly.

Operation. Median abdominal incision. The fundus of the uterus had remained adherent to the abdominal wall just above the bladder. At the previous operation a gall stone was detected but not removed. At this time numerous adhesions were felt which prevented palpation of the gall bladder. All the pelvic viscera were free, there being no adhesions anywhere. The hand passed down behind the uterus, entered a pouch which easily admitted the closed fingers and thumb and was thus passed through the vagina and out the vulva. This at once confirmed the diagnosis of vaginal hernia, the sac consisting of a lining of peritoneum and outer coverings derived from all the layers of the posterior vaginal wall. The neck of the sac was large and in the median line. It was obvious that the contents were small intestine.

Technic of Operation. Patient in Trendelenberg position. Median incision. Intestines packed away from the pelvis with long wet gauze strips. The broad ligaments were divided close to the uterus; the anterior half of the uterus was removed down to the cervix, the canal of the uterus being included in this excised portion. The broad ligaments and remaining half of the uterus were utilized later to help form a support to the floor of the pelvis.

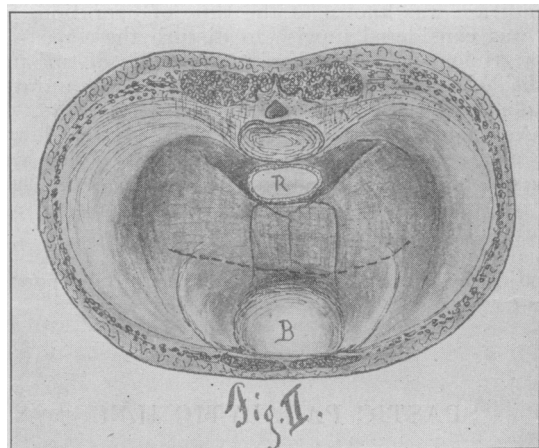
The next step was to dissect up the peritoneum from the lining of the sac and deeper portion of the pelvis. A transverse incision was made at the level of the cervix uteri and just behind it, and continued in front across to either side of the pelvis. The posterior edge of the peritoneum was then dissected up and the stripping continued until the rectum and floor of the pelvis were exposed. With care and patience this was accomplished without tearing the peritoneum and the whole lining of the hernial sac was freed. It was obvious that it would be easy to fail in attempting to elevate the peritoneum from the sac and deep portion of the pelvis. This was done by rolling the peritoneum over dry gauze held in one hand, and with the other hand the parts were pushed away, using blunt dissection by means of gauze, smooth forceps or fingers. The peritoneum was moderately adherent to the wall of the sac. It was dissected up from the rectum and laterally to about the level of the cervix. (See diagram.) A cystic right ovary was removed; the other was not disturbed. The lax vaginal wall forming part of the sac, was then pushed down out of the way, to be disposed of later.

A pelvic floor was then made by suturing with chromicized catgut the broad ligaments stretched horizontally across the pelvis and overlapped. The remaining half of the uterus was tilted back over the ligaments, and its two free corners sutured to the pelvic fascia on either side of the rectum, leav-



Sagittal Section showing the Hernia.

- B. Bladder.
- R. Rectum.
- P. Perineum.
- U. Uterus, fixed to abdominal wall.
- H. Hernial sac, continuous with the general peritoneal cavity.
- X. Shows the level of a transverse incision through the peritoneum so as to strip it from the lining of the sac.



Looking down into the pelvis from above to show the reconstruction of its floor.

- R. Rectum.
- B. Bladder
- Dotted line shows transverse incision in the peritoneum which was freed from the sac and then replaced after the broad ligaments were stretched across and a portion of the uterus was placed over them so as to extend to the rectum. These structures and the round ligaments are indicated in outline.

ing just room for the passage of the rectum. Finally, the peritoneum, which was held out of the way posteriorly, was drawn forward over the floor of the pelvis and sutured to the free edge of the peritoneum in front. Thus the general abdominal cavity was shut off and the pelvic cavity left covered entirely with peritoneum. The abdominal wound was closed by layers in the usual manner.

The next step was the treatment of the posterior vaginal wall from below. Patient was put in the lithotomy position. A curved incision was made, as in the ordinary splitting operation for rectocele at

the vaginal outlet, and the posterior vaginal wall was separated from the rectum and the tissues lateral to it. This wall contained an excess of tissue because it had formed the chief bulk of the thickness of the sac. It was drawn down and the excess tissue cut off. The edges of the levator ani muscle were freed and held together with interrupted stitches. Although the perineum was in good condition it was made a little more supporting and held with silkworm gut sutures. After the excess of the posterior wall had been removed at its lower free edge, the closure was the same as in any operation for rectocele. After this wall had been freed below, there was, of course, direct communication with the upper field of operation. On this account, although the region was dry, a small rubber dam drain was left in the perineal wound extending up between the rectum and the vagina in order to allow for drainage. This was removed five days later; this wound closed at once. The time of operation was a little over two hours.

Subsequent History. Practically no shock followed this operation. The abdominal wound healed by first intention. There was never any suppuration in the vaginal wound and the parts remained fixed. For two weeks the temperature and pulse were normal and the convalescence was unusually free from discomfort except for the presence of an annoying cough of laryngeal and tracheal origin. During the third week there were subacute symptoms in the right upper quadrant, due to the chronic disturbance caused by a gall stone and local adhesions about the gall bladder. The presence of this condition was known at the time of operation, but it was considered unwise to disturb these parts at that time. At the end of a week this disturbance subsided, and further convalescence was uninterrupted. Patient remained in bed four weeks.

An examination made three months later showed no change in the posterior vaginal wall since leaving the hospital and being about on her feet. There is not the slightest indication of any bulging, and the wall feels hard and resistant. There are no local complaints. There is every reason to believe that relief from the vaginal hernia will be permanent.

SPASTIC PARALYTIC ILEUS.

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THESE two cases are presented as examples of a fatal, somewhat rare post-operative complication, and for the sake of the consequent moral in measures to avoid its occurrence:—

CASE 1. The patient, M. P., a woman of 22, married at 19, entered the Boston City Hospital (Gyn. 170-277) on Oct. 23, 1911. Her family history was unimportant. Her catamenia were uneventful until marriage, since when they have been somewhat irregular, but seldom painful. In June, 1909, she was delivered by normal labor of a full-term, living fetus. Her puerperium lasted 12 days, and was apparently uneventful.

Early in February, 1911, she began to be troubled by burning and frequency of micturition, with yellowish-white vaginal discharge, and pain in both

lower quadrants of the abdomen. In October, 1911, these symptoms recurred, and became so severe that she entered the hospital seeking relief.

Physical examination at entrance showed the patient well developed and nourished, but anemic. Her hemoglobin was 75%, her white count 12,000. Her temperature was 100° F., her pulse 76. Examination of the head, the extremities, and of the thoracic viscera showed nothing abnormal. The abdomen was distended and tympanitic throughout, with moderate tenderness and slight muscular spasm over both lower quadrants. Vaginal examination showed a parous introitus, intact perineum, bilateral nick of cervix, uterus completely retroverted and retroflexed, and imbedded in a mass of dense, sensitive exudate filling the entire pelvis and involving the uterine adnexa on both sides. The left vaginal vault was much shallower than the right, and in it could be felt a hard, irregularly sausage-shaped mass. There was a profuse white vaginal discharge, a smear from which, however, did not show the presence of gonococci. The urine was acid, normal in color and amount, had a specific gravity of 1.023, and showed the slightest perceptible trace of albumin. Its sediment consisted of squamous epithelial and white blood cells.

The diagnosis was made of bilateral salpingitis and pelvic peritonitis, probably of gonorrheal origin, though the exact time could not be determined at which the patient received the infection.

With the purpose of avoiding operative treatment until the acuteness of the attack should have subsided and some of the pelvic exudate absorbed, the patient was kept in bed in Fowler's position, with ice bags continuously applied to the lower half of the abdomen, with a light diet and abundant catharsis and diuresis. After a few days she was given also a daily hot vaginal douche and glycerine tampon.

Under this treatment, the exudate rapidly absorbed, the mass diminished greatly in size and tenderness, and on Nov. 10, 1911, the patient was discharged from hospital much relieved.

On Dec. 27, 1911, she reentered the hospital (Gyn. 172-341) with a history of recurrent pain on the right side, chills, fever, but no vomiting.

Physical examination showed her condition much as before, with a mass palpable in each side of the pelvis, the left being more tender than the right. In view of the fact that she had shown no permanent improvement under palliative treatment, operation was now advised and accepted.

Operation (Dr. Green and Dr. Kellogg), under ether anesthesia, in the dorsal position, with the usual antiseptic preparation. A four-inch median hypogastric laparotomy incision was made, and the peritoneum opened without incident. The appendix was found elongated, congested, kinked, and distally adherent behind the cecum, the tip containing a fecal concretion. To bring it into view, considerable traction was made on the ileum, which was grasped for this purpose at a point about four inches distant from the ileo-cecal valve. A double ligature of No. 2 chromic catgut was passed through the meso-appendix close to the base, and the appendix and its mesentery tied off. The adhesions were tied off separately and cut, and the appendix removed. The stump was cauterized with crude carboic acid, and buried with interrupted Lembert silk sutures. Both Fallopian tubes were found enlarged, kinked, and adherent in the posterior cul-de-sac. Both ovaries were normal. The left tube was