**Cases of stenosis and atresia of the female genital canal / by James R. Chadwick.**

# CASES OF

# Stenosis and Atresia of the Female Genital Canal.

BY

JAMES R. CHADWICK, M.D.,

BOSTON.



[*Reprinted from the Boston Medical and Surgical Journal, of June 3, 1886.*]

BOSTON:
CUPPLES, UPHAM & CO., PUBLISHERS,
Old Corner Book Store.
1886.

# SEVEN CASES OF CONGENITAL AND ONE OF TRAUMATIC STENOSIS OR ATRESIA OF THE FEMALE GENITAL CANAL.[1]

BY JAMES R. CHADWICK, M.D., BOSTON.

BEFORE entering upon the relation of my cases, I would briefly remind you that along the outer border of each Wolffian body appears, between the fifth and sixth weeks of embryonic life in the female, a band, at first solid, but later hollow, which is known as the duct of Müller. This duct descends on each side to open into the cloaca, in which likewise terminate the rectum posteriorly and the bladder anteriorly. The two ducts of Müller, as they descend, are opposed to each other longitudinally like a double-barreled gun; the contiguous walls are absorbed so that a single canal results, from which are later differentiated the vagina and uterus. The upper segments of the original ducts become ultimately the Fallopian tubes. The cloaca is subsequently divided by two septa, so that it consists of three distinct cavities corresponding to the bladder, vagina and rectum. Meanwhile the external genital organs have been developing independently with depressions corresponding to the divisions of the cloaca within. The septa intervening between the external depressions and the internal cloacæ are absorbed and the bladder, vagina and rectum thus acquire their external openings. An arrest of this absorptive process is manifest in two of the most common forms of imperforation, atresia ani, and an imperforate hymen.

In fixing our attention upon the genital tract exclu-

[1] Read at the Annual Meeting of the Suffolk District Medical Society, April 24th, 1886.

sively, we at once perceive that an arrest of the developmental process may show itself in two markedly different ways: (*a*) by a failure of absorption in the contiguous walls of the two Müller's ducts so that a septum persists in adult life throughout a greater or less extent of the utero-vaginal canal; (*b*) by an arrest of growth in the ducts which may affect the ultimate size of the entire genital canal or be confined to one segment where it may be manifested by a more or less complete stenosis. As I reported five cases of duplicity of the genital tract some years ago, I shall confine myself to a presentation of cases illustrating some of the varieties of stenosis, and atresia.

My first and second cases may be regarded as of imperforate hymen, although in the first there was a minute opening through which the menstrual blood could slowly trickle; such cases as the first of course rarely come under observation until after marriage and then only when the hymen is unnaturally resistent. In the second case the hymen was absolutely imperforate and gave rise to the familiar retention of the menstrual blood; it is remarkable for the enormous amount (seven quarts) of the retained blood, which I have not found equalled in the literature of the subject. Dr. Emmet says that the average amount of accumulation is six ounces.

### ALMOST IMPERFORATE HYMEN.

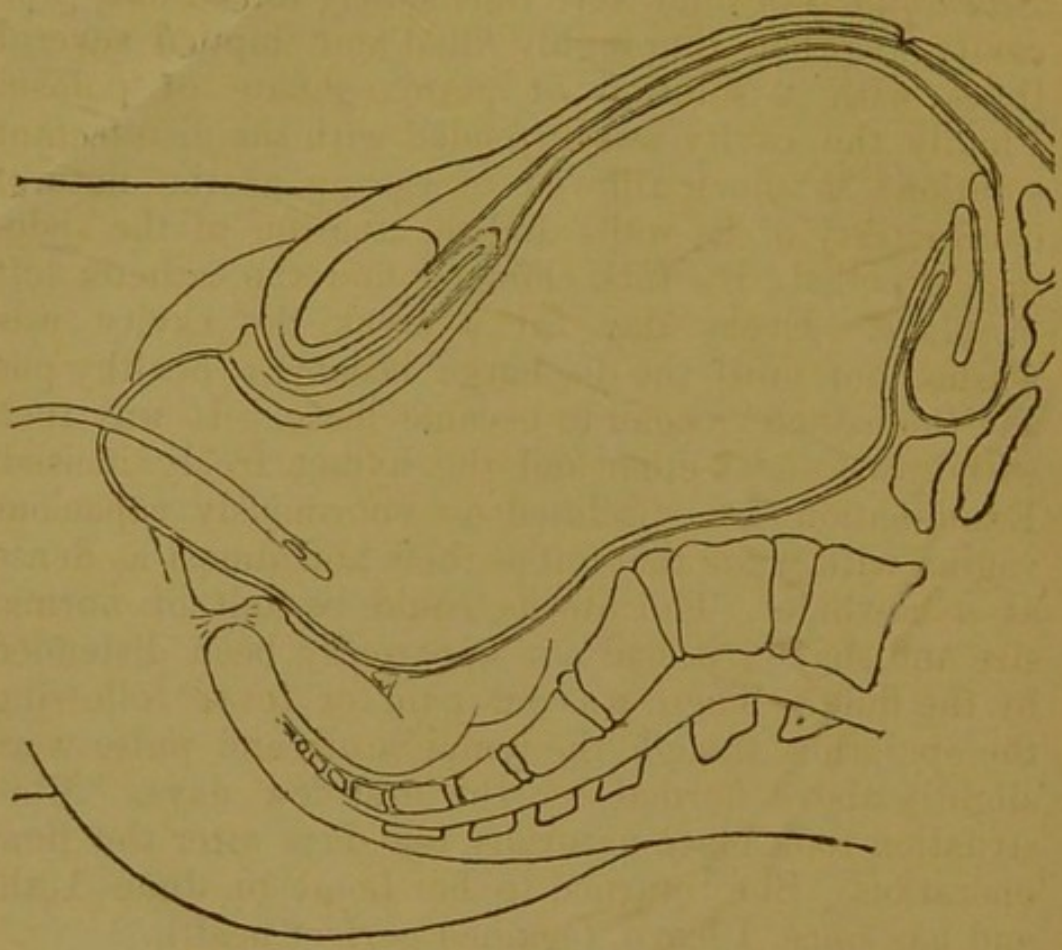
Case I. Mrs. A. D., aged twenty-four years, who had been seven months married, applied to me on December 8, 1879, because her husband had been unable to effect coitus. She reported that the catamenia began at the age of seventeen years, after the hymen had been incised to allow the escape of the menstrual flow which had been retained for three months; from that time the flow had recurred regularly every month without pain.

On examination, no opening or cicatrix could be found in the hymen. She returned in accordance with directions, on December 20th, when menstruation had been established; the blood was then seen to be trickling from a minute perforation in the centre of the hymen which was readily dilated by forceps. On December 30th, she reported that her husband was still unable to effect an entrance, the attempt having rendered her extremely sore. Without examination she was admitted to my private hospital where she was to have had the hymen excised. Upon investigation, an irregular venereal ulcer was discovered at the fourchette. In consequence of this complication, lateral incisions and dilation of the hymen was performed and the use of iodoform ointment prescribed. On January 3d, the ulcer was beginning to heal but the surfaces of the incision were extensively ulcerated. There was a swollen gland in the right groin, which, despite the use of tincture of iodine, suppurated and had to be opened two weeks later. The lesions all healed soon after and coitus became free and frequent. No secondary symptoms developed. She gave birth to a child for the first time in 1885.

### IMPERFORATE HYMEN. RETENTION OF MENSTRUAL FLOW.

Case II. Miss G. B., aged sixteen years, came to my private hospital on May 24, 1881, from St. Andrews, N. B., with an enlargement of the abdomen.

She had been suffering from pain in the abdomen for two years; for nearly a year the abdomen had been increasing in size and there had been a marked access of pain for three days every month. There was a fluctuating tumor rising from the pelvis to the umbilicus simulating the pregnant uterus at the fifth or sixth month. On exposing the vulva a tumor as



CASE II. Showing the vagina distended with menstrual fluid.

large as a hen's egg was seen protruding from between the labia readily recognizable as an imperforate, greatly distended, and hypertrophied hymen. The diagnosis of retained menstrual fluid was unequivocal.

On the following day she was etherized, a large-size, trocar thrust through the hymen, and immediately withdrawn; while a gelatinous chocolate-colored fluid was oozing through the opening thus made, an elastic catheter, of slightly larger calibre, lengthened by rubber tubing having a snap-catch to close it, was pushed through whereby the fluid was slowly squeezed out of the cavity; the end of the tube was kept beneath the surface of the escaping fluid in the vessel, by which means the entrance of air was completely prevented.

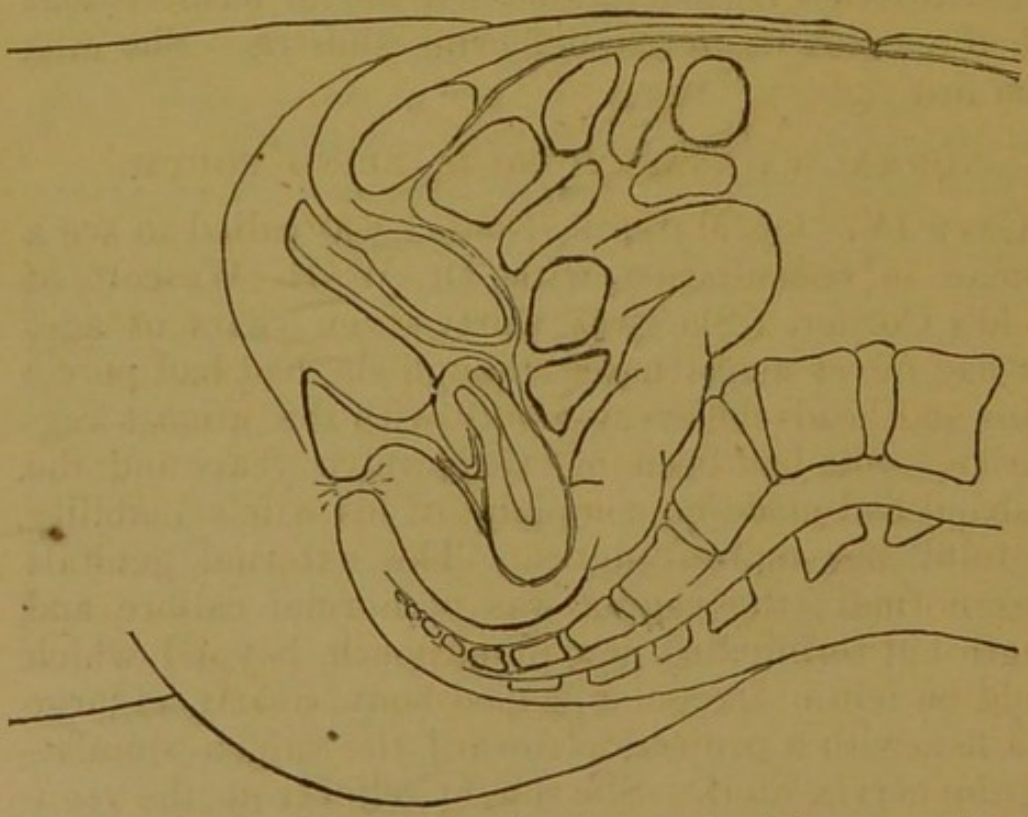
*Seven quarts* of fluid were thus slowly forced out. The cavity was then thoroughly filled and emptied several times with a solution of permanganate of potash. Finally the cavity was distended with the disinfectant solution; so much allowed to escape as the natural contractility of its walls and the tension of the abdomen expelled; the tube clamped and the catheter left in place. Every day for a week the cavity was washed out until the discharge became a healthy pus and the catheter began to become loose. It was then withdrawn under ether and the hymen freely incised. Examination then disclosed an enormously capacious vagina with walls that felt as thick and almost as dense as a cowhide. The uterus could be felt of normal size and shape; it had not apparently been distended by the fluid. There was no pain or fever following the operation, though the temperature and pulse were slightly above normal for the first few days. Menstruation took place naturally ten days after the final operation. She returned to her home on June 13th, and has since, I learn, regained perfect health.

The evacuation of the accumulated blood is the prime indication in the way of treatment in this class of cases. This would seem to be a simple matter, but its practice has been attended with so great mortality that many methods have been devised to avoid the resulting septic infection. The method most in vogue until recently, has been to allow the retained fluid to trickle slowly through a canula passed through the hymen and secured in place. The mortality has been very great. Emmet improved upon this by making a free incision through the hymen and washing out the cavity with warm water. His four cases were cured, but the same treatment has proved fatal in other hands. Familiarity with these facts impelled me to cast about for a means of absolutely insuring against any devel-

opment of septic organisms in the cavity and the consequent infection of the system. The method described would seem to have perfectly fulfiled its purpose.

### VAGINAL STENOSIS.

CASE III. Mrs. S. M. L., aged twenty-one years, nine months, married; applied at my dispensary on June 7, 1880, complaining of indigestion, backache and dyspareunia. She began to menstruate at the age of seventeen years, had always been regular, had had considerable flow for four or five days with but little pain. Examination at this time only revealed a short vagina and the absence of any vaginal portion of the uterus: an opening, supposed to be the external os, in the dome of the vagina admitted a fine wire, three-fourths of an inch. Per rectum the wire was found to have passed to the left side of what was evidently the



CASE III Showing the Stenosis of the vagina before operation.

neck of the womb, which organ lay in retro-sinistro-version.

On July 1st she entered my private hospital, when I opened a free passage from the neck of the vagina into the upper occluded segment by cutting and tearing the septum transversely. Not having foreseen the need of a vaginal plug I was unprovided, but improvised a very efficient substitute by paring a potato and cutting it down to the required size and shape. By this means the vagina was kept evenly distended for several days until a glass plug was procured. This she wore for two weeks, and was then discharged with the torn surfaces healed without notable constriction by the cicatrix. She visited my dispensary a few times subsequently with symptoms referable to the displacement of the womb. The organ could not, however, be raised from retro-sinistro-version, which fact with other considerations, led me to suspect that I had a case of uterus unicornis sinistra. She was then lost sight of.

### NORMAL VAGINA ENDING IN BLIND POUCH.

Case IV. On March 6, 1883, I was called to see a woman in consultation with Dr. W. H. Wescott, of Field's Corner. She was thirty-seven years of age, but had never menstruated, though she had had pelvic pains and headache every month with the utmost regularity. She had been married twelve years and the husband had made no complaint of his wife's inability to fulfil her marital duties. The external genitals were normal; the vagina was of normal calibre and length but terminated in a blind pouch, beyond which could be felt an irregular-shaped body, nearly as large as a fist, with a projection toward the vagina simulating the cervix uteri. She sought relief from the regularly recurring pains; as these were not severe and she

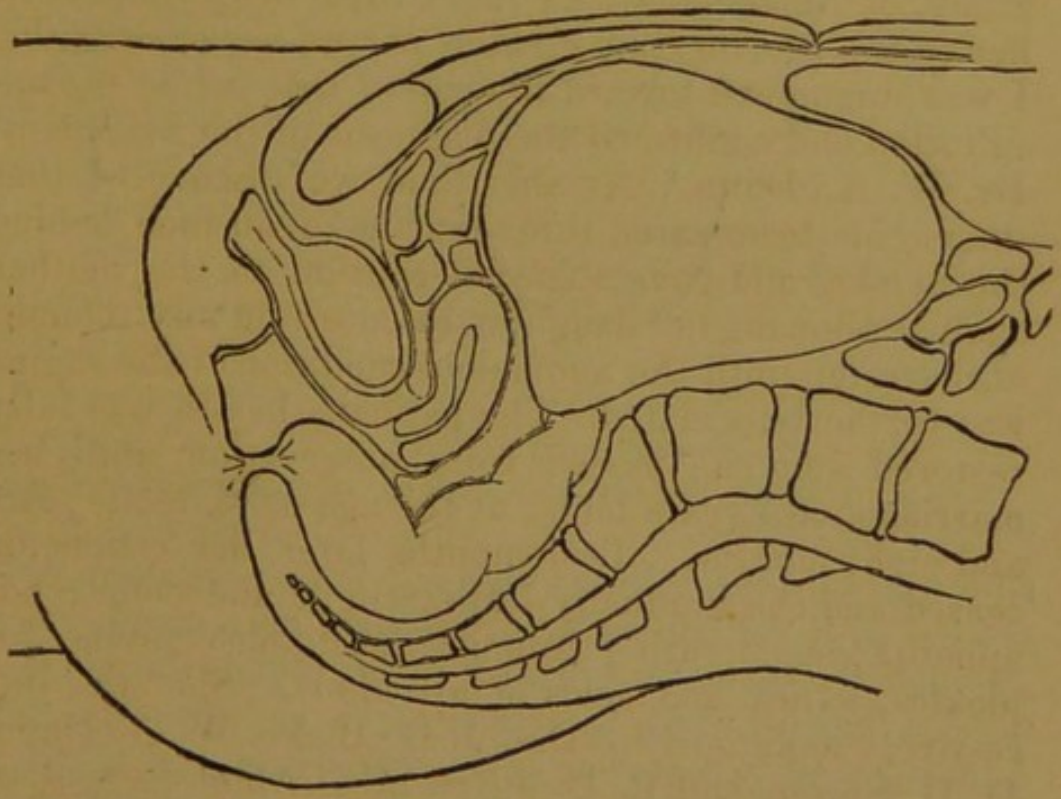
was otherwise in perfect health, and thirty-seven years of age; as there was manifestly no retention of menstrual blood, I advised against operative interference, owing to the possible danger of opening the peritoneal cavity and the small chance of relieving her pains which were probably of ovarian not uterine origin. My advice was followed, and she has since been in her usual health.

VAGINA A MINUTE CANAL. UTERUS NORMAL. PERMANENT ESTABLISHMENT OF VAGINA. TAPPING OF ABDOMINAL ABSCESS FROM ARTIFICIAL VAGINA WITH ACCIDENTAL PUNCTURE OF A DILATED STOMACH. GASTRO-VAGINAL FISTULA. CURE.

CASE V. Mrs. L. L. began to menstruate at the age of twelve years, and continued to do so with regularity until the age of fourteen, when she had an attack of inflammation of the bowels which confined her to the bed for the greater part of seven months. I was summoned toward the end of that period in consultation and confirmed the diagnosis of the attendant, Dr. W. A. Dunn. At this time we discovered that the vagina terminated three-fourths of an inch behind the hymen, and gave a special caution to the mother against allowing her daughter to entertain any thought of marriage until the anomalous condition of the vagina was further elucidated. The patient's health was fully restored and she passed from observation until her marriage, two years later, at the age of sixteen years and eight months. Two months later her catamenia ceased and she gradually lost strength and color; her appetite degenerating into an insatiable craving for pickles, jellies, and acids of all kinds. She was successively examined by Drs. J. G. Blake, W. A. Dunn, D. H. Storer, and R. D. Joyce, all of whom recognized the genital abnormality and the fact that she was not pregnant.

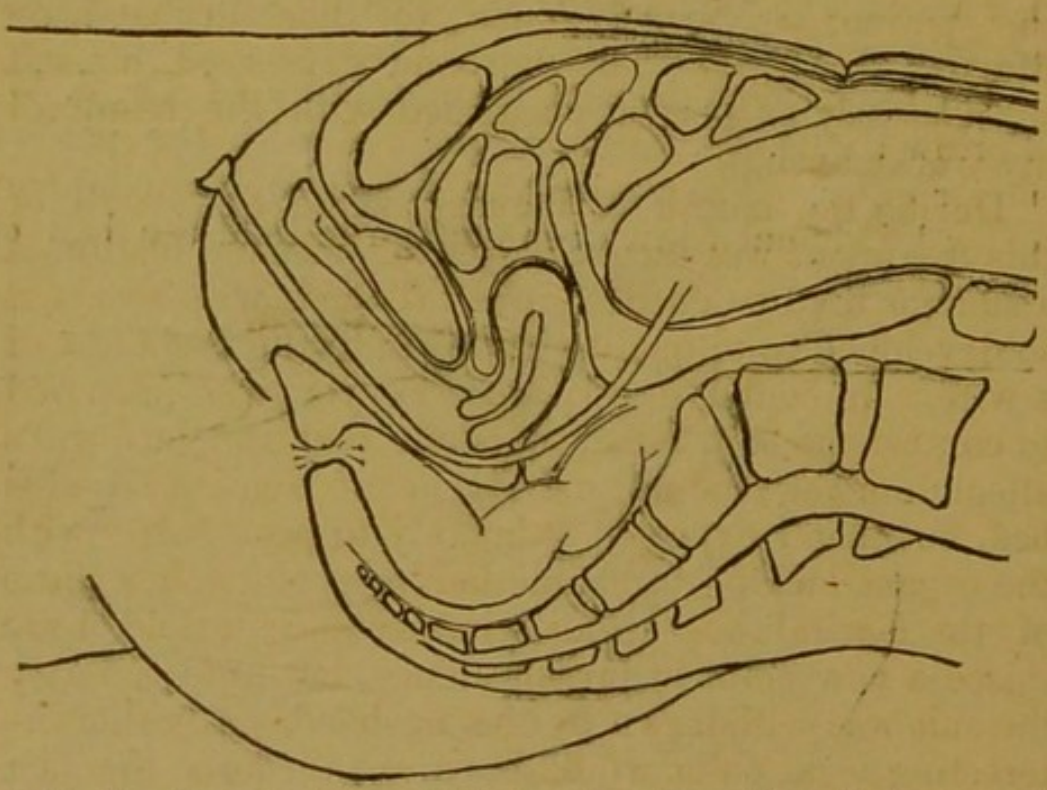
On Dec. 1, 1880, ten months later, I was summoned at the instance of Dr. W. A. Dunn, and found her excessively pale, with an elevated pulse and temperature, and a soft tumor extending from half way between the umbilicus and pubes nearly to the ribs on the right side. She was having several evacuations from the bowels daily of two or three quarts of pus mixed with liquid fæces. I learned that her parents had taken her home from her husband a month before because of ill-treatment, owing to exasperation on his part because he was unable to effect coitus. I declined to treat her unless she would enter my private hospital, which she did on December 6th.

On December 7th, with the assistance of Dr. J. W. Farlow and J. W. Elliot, I operated with the patient under ether. The vagina was found to be an apparently blind pouch just deep enough to hold the ball of the thumb.



CASE V. Showing the vulvar pouch, the minute vaginal canal, the abdominal abscess and the lower end of the stomach, before operation.

As menstruation was known to have occurred regularly from the age of twelve to that of fourteen years and as a uterus of normal size could be felt by recto abdominal palpation, further minute search was instituted for some communication between the vagina and uterus, which resulted in the discovery of a minute opening in the vagina through which a wire could be made to pass three and one-fourth inches toward the uterus. This tract was gradually dilated to the size of a quill and seemed to be lined with an extremely thin mucous membrane. With forceps the canal was



CASE V. Showing the artificial vagina, the collapsed abscess and tube in the stomach.

ruptured into the cellular tissue where persistent dissection with the fingers finally opened up a canal, over an inch in diameter, to and even round the cervix uteri. The os uteri was normal in appearance; the sound passed two and a half inches into the uterine cavity. A glass plug was inserted and secured per-

manently in place. This was worn for several weeks until the canal in the cellular tissue was completely lined with mucous membrane which shot out round the plug from the strip of membrane left on the anterior and posterior walls of the dissected canal by rupture of the original duct. The artificial vagina thus successfully established was of ordinary calibre until it neared the cervix, when it contracted somewhat to end at the cervix uteri continuous with the cervical canal. After the fifth week the plug was removed but passed twice a day to prevent contraction, until the patient returned home to her husband on March 5th, 1881. The husband expressed himself subsequently as perfectly satisfied with the result of my workmanship.

During the month of January, while the result of this treatment was inconclusive, the husband instituted a suit for divorce on the ground that his wife was not so developed as to qualify her to fulfil the functions of a wife. In conferring with her lawyer, who proposed to contest the suit, I had to admit that the husband's allegation was true up to the time of her leaving his bed, but that I expected ultimately to provide her with the organs lacking to enable her to perform her share of the marital act. This circumstance would have raised a new point in jurisprudence, but unfortunately the suit was withdrawn by the husband. Another interesting legal point would have arisen from the fact that her husband was the half brother of her mother, a relationship which is not provided for by the statutes which specify that a marriage with an uncle is null and void.

I have, in the above recital of facts, somewhat anticipated the course of events in order to present the medical history of the case in its most comprehensible form. The most remarkable features remains to be

told. It must be remembered that when the patient entered my hospital she had a large abscess extending from half way between the pubes and umbilicus nearly to the ribs on the right side of the abdomen and discharging constantly into the intestinal canal high up.

During the months of December and January, the patient was having several enormous evacuations from the bowels daily, of pus, serum, and liquid fæces, and consuming incredible amounts of solid and liquid nourishment and beer. When the artificial vagina was completed, I turned my attention to the abscess, and on January 22d, plunged an aspirator into the abscess through the abdominal wall, and evacuated much pus; I did not venture to put in a permanent drainage-tube, because I half suspected that I had transfixed a coil of intestine lying between the abscess and the abdominal wall. The abscess speedily re-filled, so that, on January 27th, I introduced a trocar into the abscess, through the top of my artificial vagina behind the uterus, though I was doubtful of the presence of fluctuation at that point. Withdrawing the trocar, I left its canula *in situ*, to maintain permanent drainage, and enable me to wash out the cavity with a solution of permanganate of potash; this acted efficiently, and the opening into the intestines closed, as was made evident by the disappearance of pus from the stools. The stiff silver canula incommoded her, however, and, after a week, slipped out; the abscess speedily became distended, so that on February 5th, she was again etherized, and the trocar thrust into the abscess again, behind the uterus. The canula was withdrawn with the trocar, and many vain attempts made to insert an elastic catheter through the opening thus made, through which much pus leaked. In desperation at my failures to pass the elastic catheter, I again seized the trocar, pressed down, with my hand on the abdomen, what felt

like the half-evacuated abscess, plunged in the trocar, withdrew it, leaving its canula, plugged the latter with a cork, and secured it with a perineal strap.

The next day, in the presence of Dr. Farlow, I drew out the cork, and was startled by the strange appearance of the fluid which escaped. It was a thin, watery fluid, full of black specks, entirely free from pus, but its odor was its most striking quality, being unmistakably that of gastric juice. Dr. Farlow found, under the microscope, that the black specks were meat-fibre, and pronounced the fluid to be the contents of the stomach. Here was a startling result. I had manifestly plunged the trocar through both walls of the collapsed abscess into a distended stomach, thus establishing, probably for the first time in the history of medicine, a *gastro-vaginal fistula.* The canula was at once withdrawn. For several days after, the varying contents of the stomach were recognized, mixed with the pus that escaped from the cavity of the abscess, with the odor characteristic of gastric juice. Three days after, these abnormal ingredients had disappeared.

February 13th. A silver male catheter was inserted into the cavity of the abscess, through the still pervious opening into the vagina, and an attempt made to promote its healing, by moderate, forcible distension of the cavity with a solution of permanganate of potash. In fifteen minutes, the patient had a sudden, intense, gastric colic, followed, two hours later, by the evacuation from the bowels of many large blood-clots, amounting to two quarts (?), by the estimate of a reliable nurse. Tympanites set in for a few hours, and gastric juice again imparted its fragrance to the pus that escaped through the catheter during the subsequent six days. Her whole left leg now swelled to double its size, without phlebitis, or other assignable cause, and never fully subsided afterwards. The examina-

tion of the urine at this time, and previously, showed a perfectly healthy condition of the kidneys. During these three months, the pulse had ranged persistently between 100 and 120, but the temperature had been normal; at no time was there any febrile reaction.

On March 3d, only pus came from the tube, and on March 5th she went home, wearing the tube, but otherwise in good condition, being able to walk about freely without pain.

Three days later, she let the tube slip out, which was followed by slight feverishness, but no subsequent appearance of pus. On March 10th, general anasarca suddenly set in, and the urine was found to contain albumen, pus, and numerous hyaline and granular casts. She lingered through the summer in fair health, fulfilling the functions of a wife to her husband's perfect satisfaction, and died of Bright's disease in October. Neither persuasion nor bribe could induce the husband to permit an autopsy.

These three cases manifest deformities confined to the vagina, with the possibility that in Case III, the uterus was one-horned. In Case IV, the condition of the uterus could not be made out, owing to old, inflammatory deposits around it. Case V presents the rarest form of stenosis, three-quarters of the vagina being represented by a very slender tube, dilated slightly at the end, inserted into the cervix uteri.

Kussmaul [2] states that "the Heidelberg Anatomical Museum contains a preparation of a congenital atresia of the vagina, in which that organ consists of a fibrous band one and a half inches long and three lines thick, with only a trace of canal in its upper part. The uterus, measuring three inches in length, and one and

[2] Von dem Mangel, Verkümmerung, und Verdopplung der Gebürmutter. Würzburg, 1859, p. 45.

a half in breadth, nevertheless exists. The ovaries are in a state of rudimentary development."

The accidental puncture of the dilated stomach arose from my mistaking its lowest pouch, filled with fluid, which was plainly to be felt, for the partially evacuated abscess, and pressing it down with my left hand, while with the right I pushed the trocar forward. The patient's enormous consumption of food fully explained the dilatation of the stomach, although no significance was attached to it before the accident. Whether the development of the fatal disease in the kidneys should be regarded as due to the propinquity of the abscess to the right kidney, or as a result of septic infection, can never be known.

Cases VI and VII present instances of universally arrested development, in which the vagina is entirely wanting, and the uterus indicated, if at all, by a mere solid bunch. The patulous state of the urethra, noted in Case VII, is alluded to by Emmet as not infrequent in these malformations, and undoubtedly explains the fact that has been often observed, that coitus has taken place through the urethra.

Dr. Emmet [3] says that "if the vagina is absent, it is proper to open a canal at an early age, even if no retention exists, if a vestige of the uterus can be detected," basing this opinion upon a remarkable case, in which the uterus developed to normal size, after the establishment of a vagina, although no vestige of it could be found before the operation; and also upon the fact, likewise noticed by Barnes, that the health of the patients will often be established, as a result of the operation, although no development of the uterus takes place.

This advice I did not follow in Case VII, nor

[3] Principles and Practice of Gynæcology. Third edition, Philadelphia, 1884, p. 189.

can I endorse it, under ordinary circumstances, in view of the risks to life and health attendant upon the operation, and the very meagre chance of so brilliant a success as crowned Dr. Emmet's efforts in the one case.

### ABSENCE OF VAGINA, UTERUS, AND PRESUMABLY OF THE OVARIES.

Case VI. Mrs. K. C., twenty-two years of age, a well-nourished American girl, of Irish parentage, applied at the out-patient department of the City Hospital on August 12, 1878, to learn why she had never menstruated. From the age of fourteen years she had occasionally had backache, headache, abdominal pains, and general malaise, yet none of these were periodical in their recurrence.

She was married three and a half years ago, the marital functions having since been regularly exercised with partial satisfaction to the husband, but without the natural sensations to the wife.

On examination the mons veneris and labia majora were normal in appearance and well covered with hair; the clitoris, its prepuce and the labia minors were well developed. What appeared to be the vaginal entrance just below the urethra was peculiar from the entire absence of carunculæ myrtiformes or other trace of the hymen. On inserting the finger, the pseudo-vagina was found to end in a blind pouch about one inch from the entrance; its walls were notably thin and entirely free from the characteristic rugæ. On stretching the labia widely apart I found that this pouch was completely obliterated, its walls becoming directly continuous, with the mucous membrane of the labia. These phenomena suggested that the pouch was in reality to be regarded either as an imperforated hymen or an imperforated perineum, which had been

so persistently assaulted by the male organ that a pouch had ultimately been formed.

By recto-abdominal palpation the finger could be brought in contact throughout the greater portion of the pelvic cavity without detecting any vestige of the vagina uterus or ovaries. In fact the explorations could be made so thorough as to exclude the possibility of the presence of these organs except possibly in a very rudimentary condition. A sound in the bladder could be felt through the recto-vertical septum without the interposition of a vagina.

The vulvar cleft was lubricated by the secretions of the vulvo-vaginal glands, the meatus of which were visible, one gland was felt as large as a pea. The breasts were flat, the mammary glands, nipples, and areolæ small.

### ABSENCE OF VAGINA, AND PRESUMABLY OF THE OVARIES; A BARE TRACE OF THE UTERUS.

Case VII. On February 28, 1886, Miss F. H., of American parentage, aged twenty-eight years, was brought to me for examination by Dr. A. P. Perry, of Jamaica Plain. She reported never having menstruated or even had the menstrual molimena. Her health was good except for nervousness during the past month. The other functions were all well performed. The breasts were under size, the nipples and areolar normal, but no papillæ visible. The external genitals were fully developed, the orifices of the vulvo-vaginal glands perceptible; the clitoris and its prepuce prominent. There was no trace of the vaginal orifice. The urethra was so patulous that the little finger passed easily into the bladder, though there had been no incontinence of urine. With the little finger in the bladder and the forefinger of the other hand in the rectum, the entire absence of the vagina could be

established. The only trace of a uterus was a small nodule, no larger than a bean, suspended in the middle of the pelvis by the broad and round ligaments which swung across the middle of the pelvis like a hammock. I advised against any attempt of the establishment of a vagina or the development of the uterus.

My last case is of an entirely different character, the characteristics being the result of injuries sustained in an instrumental delivery. The substitution of cicatricial for normal tissues in such cases almost always entails failure in the attempt to keep the canal patulous after enlargement owing to its contractility. Persistent efforts should, however, be made, unless the patient as in my case, refuses to submit to successive operations.

URETHRO–VESICO–VAGINAL FISTULA. CICATRICIAL CONTRACTION OF VAGINA.

Case VIII. Mrs. G., of French parentage, consulted me in the spring of 1882 on account of complete incontinence of urine, which dated from an instrumental delivery of a dead child five years before. She was twenty-eight years of age, a woman of large frame and full flesh. On examination the finger passed directly into the bladder through a rent nearly an inch long, beginning at the upper third of the urethra and running backwards along the base of the bladder. Where the fistula ended the calibre of the vagina was narrowed to the size of a quill by dense, unyielding cicatricial tissue. Coitus, which had been frequent, though always with pain to the woman, had evidently taken place into the bladder. She was admitted to my private hospital and the fistula closed by seven silk sutures with firm union. At a subsequent operation an attempt was made by forcible dilatation and the knife to re-establish the vaginal canal. A glass plug

was worn for several weeks, in spite of which the cicatricial tissue contracted down to its former dimensions and the woman went home content with the relief afforded by the closure of the vesical fistula. The husband has never been satisfied with the result.