

## Original Articles.

TRANSVERSE SEPTA OF THE VAGINA.<sup>1</sup>

BY A. K. STONE, M.D.

DURING the summer of 1893 there came to the out-patient clinic at the Massachusetts General Hospital three cases of transverse septum in the vagina. All three occurred in young women who had never borne children, and in none was there any history of injury or instrumentation which would account for the condition. The rarity of this anomaly was forced upon me, for, questioning a number of gynecologists and obstetricians in Boston, Baltimore and Washington in regard to the frequency with which they had met transverse septa, with very few exceptions they stated that they had never seen such a condition.

While visiting the Columbia Hospital in Washington, in company with Dr. J. F. Scott, I chanced to mention the subject; and the house physician, Dr. Murphy, said that such a case was then in the hospital, and that he had seen still another in the out-patient clinic. Dr. Scott has since then seen a case in private practice. With great kindness he has placed his cases at my disposal, and I take this opportunity to acknowledge his courtesy.

My cases are briefly as follows:

CASE I was an unmarried woman of twenty-one or twenty-two years, who came to the examining-table because of symptoms which made me suspect the possibility of pregnancy. She was well developed, and everything about the external genitals appeared normal. The hymen was not intact. About two inches from the introitus the examining finger came upon a barrier to further advance. Finally a small opening was found which with considerable difficulty allowed the admission of the tip of the finger, which could then be made to feel the os beyond. The os was soft and the uterus enlarged, and pregnancy of about four months diagnosed. With the speculum the obstacle which had prevented the free examination was found to be a thin membranous septum completely blocking the whole lumen of the vagina with the exception of a small central opening. The membrane was elastic and had no different appearance from the rest of the mucous membrane of the vagina. Anteriorly the septum was in close connection with the vaginal portion of the cervix. There was no thickened portion that would in any way make one suspect the septum to be of inflammatory origin. All injuries were denied. Menstruation had always been regular and normal up to the time of the pregnancy. I lost track of the patient in spite of my attempts to have her confined at the Boston Lying-in Hospital; and as she also changed her address, I have not been able to obtain any account of the confinement.

CASE II was a young unmarried woman who feared pregnancy, and was in every way a duplicate of the first case, excepting that there appeared to be a few bands running from the cervix and connecting with the membranous septum. Menstruation here had been normal. This patient, too, has been lost sight of, in spite of attempts to trace her.

In each of these cases the opening through the septum was of nearly one-half inch in diameter, and the

edges were thin and sharp, and presented no inflammatory conditions. The septum formed an almost closed pouch at the upper portion of the vagina, into which if the semen once gained entrance, there would be a condition most favorable for conception.

CASE III is somewhat different. This patient had a uterine displacement and some endocervicitis consequent to this. Examination of the cervix was attended with great difficulty, from the constant tendency of the speculum to slip. Careful investigation into the cause of this showed that about two inches from the introitus there was a distinct narrowing of the lumen of the vagina by a ridge of tissue. This ridge was scarcely perceptible to the examining finger when introduced in the ordinary manner, but a distinct thickening could easily be made out if the finger was passed so as to press against the vaginal wall. There was no history here of previous injury or of any operation. Neither was there any tendency to contraction. The ring was so high up that when the Sims speculum was introduced the tip caught upon the ridge, and instead of falling into the posterior cul-de-sac slipped forwards. Hence the difficulty which led to the discovery of the condition.

Dr. Scott's cases are as follows:

CASE I was a colored girl about eighteen, who was well formed and well developed. She had always menstruated regularly and had never known that she was in any way different from other girls. She presented herself at the Columbia Hospital, in Washington, early in November, 1893, being then nearly at full term. On examination the os could not be found, but about one and three-quarters inches from the entrance of the vagina the finger came against a smooth, soft, yielding membrane which completely occluded the vagina. At the centre alone there was a little roughness. Examination with the speculum showed a small opening which would admit the entrance of a uterine probe. The edges of the opening were somewhat thickened, as though at some time there had been a slight inflammation. The membranous septum could not be stretched enough to make a bimanual examination to determine the position of the head of the fetus. About a week later, labor pains came on and the os evidently dilated in a perfectly normal manner, for the head entered the vagina and bulged the septum, which held firm and resisted for several hours the further advance of the head. A probe-pointed bistoury was passed through the opening, and the membrane was slit in several directions to the vaginal wall and the remainder of the labor was rapid and normal.

CASE II was a white woman, age thirty-three, who had been married for two years. Menstruation first appeared at fourteen, but was not seen again until she was seventeen. At this time she suffered severely, and the lower abdomen swelled considerably, and at times there was difficulty of urination. With the recurrence of menstruation at seventeen, "there was an awful quantity of it, and the flow was black and tarry." Since then there have been several periods of intermission in the flow. When first seen she was habitually suffering with free menstruation continuing for fifteen days at a time. The menstrual flow was described as being like "coffee grounds." There was severe pain all this time, but no clots were passed. After the "tarry-like" flow had ceased a very offensive flow, like the "yolk of an egg," followed. The

<sup>1</sup> Read, by invitation, before the Obstetrical Society of Boston, March 9, 1896.

patient was habitually constipated, often going for twenty days without any movement of the bowels.

Passing the finger into the vagina an obstruction to its further advancement was met at the depth of one and one-half inches from the hymeneal orifice. With the aid of the speculum an opening to the right and anterior to the centre was found, which just admitted the passage of a uterine sound into a spacious cavity beyond. By rectum the uterus was to be felt, small and straight and much flattened and in comparatively normal position. There were no adhesions, and the uterus was freely movable.

An operation was performed April 6, 1894, under chloroform. A probe-pointed bistoury was used to cut the opening large enough to introduce the finger. A catheter was passed into the bladder to define the course of the urethra, and then the opening was much enlarged. The septum was very dense and tight, and fully one-eighth of an inch thick. After cutting, the parts were forcibly distended by the fingers to the normal size of the vagina. The vaginal mucous membrane retracted much both upwards and downwards from the cut septum. The vagina was then packed snugly with iodoform gauze, and the denuded surface left to granulate. The packing was removed daily, and the vagina washed with lysol (1-100) and re-packed.

Since the operation the patient states that the tenderness in the lower abdomen, which she has had for years, has disappeared.

The literature of this subject, with one exception, is confined to the reports of single cases; and it is rare that any one man has had an opportunity to see more than two such cases. Therefore it may be of interest to give a partial *résumé* of some of the cases already reported, in addition to the above-mentioned five cases.

Amédée Maurin, in 1875, reported a septum with three openings more than half-way up the vagina. This patient had menstruated regularly, but had had no children. The septum was removed, and there was no further history. This case is interesting, as the reporter thinks that the septum was due to an inflammatory process which was the result of small-pox which the patient had contracted at the age of twelve, though there was no direct history to be obtained to point to such a conclusion.

More recently Dr. Osmont, of Caen, has reported a case where a woman of thirty was confined, and after a long labor was delivered by forceps. Later she presented herself at the hospital with a recto-vaginal fistula, and with a transverse septum in the vagina still intact. The head had descended until it had reached the septum, and after several days had torn through the posterior wall of the vagina and so, *via* the rectum, had passed round the obstruction and into the vagina again, whence the instrumental delivery took place. The septum in this case had a small opening, and menstruation had been regular since the age of fourteen. This septum was situated three and a half centimetres above the hymen.

Ostermann states that he has found for the most part that the septa occur in the upper third of the vagina, though he found that there had been but little work done upon the subject in France and still less in Germany. In the discussion of this paper Oderbrecht reported a case occurring in the upper third of the vagina where the woman was sterile. The septum

was cut, and a favorable result was obtained. Here the opening would simply admit of a probe, and the menstruation was painful. Grimm, at the same time, reported a case which he has under observation at the present time. The patient was a Japanese girl of eighteen; and though there was only a pin-hole opening through the membrane, there were no unpleasant symptoms at the menstrual period.

In three successive years cases were reported to the Obstetrical Society in London. In Smith's case the catamenia had been regular, though scanty and accompanied with some pain. The patient had been married for a number of years, and coitus had probably taken place through the urethra, which was dilated so that it admitted two fingers with ease. One and one-half to two inches above the vaginal opening there was a membrane, which at time of delivery and at previous outpatient examination presented no opening. In one part there were some apparent granulations which may have covered an opening previously present, otherwise there must have been some communication *via* the bladder. The patient came to the hospital while in labor. The septum was divided and dilated, and a safe delivery effected.

Boulton's case was evidently one where the remains of a longitudinal septum played an important part. The patient came to the clinic saying that she was not like other women, for after the regular menstrual flow, which lasted for three days, she had a discharge of "green waters" for several days. A septum was found, one and one-half inches in depth, in which no opening could be detected with the examining finger. When, however, the vagina was dilated with a speculum, two small openings were found on either side of the vagina; and on further examination it was found that a triangular shaped septum extended from the transverse septum nearly to the os. This case should rather be classed as a rudimentary double vagina than as a transverse septum.

Gervis found in a patient, presenting herself because of a urethral caruncle, that the vagina ended in a double cul-de-sac, and in the left side there was a small opening leading into the upper portion of the vagina. Menstruation had begun at fifteen years of age, and had continued ever since without trouble. There had been a slight leucorrhœa, which promptly disappeared when the septum was removed. Carter also reported a thick septum through which the menstrual blood escaped by a very small opening, the process taking a very long time. This was operated upon with relief.

Doléris's case was that of a patient who came to the hospital in the course of a miscarriage at the sixth month. She had had regular catamenia since her seventeenth year. Examination under chloroform showed a very short vagina ending in a cul-de-sac which communicated with the upper part of the vagina by an opening which would admit of only the passage of a filiform sound. The patient returned to her home, but came back in a few days with the membrane bulging through the vaginal opening and the opening enlarged to one-half to three-quarters of an inch in diameter under the softening and dilating influences of the labor. The membrane was torn, and the fetus delivered in a few minutes.

In 1889 Cullingworth reported two cases in the *Lancet*. In the first, a widow, age thirty, presented herself for an offensive vaginal discharge. Catamenia

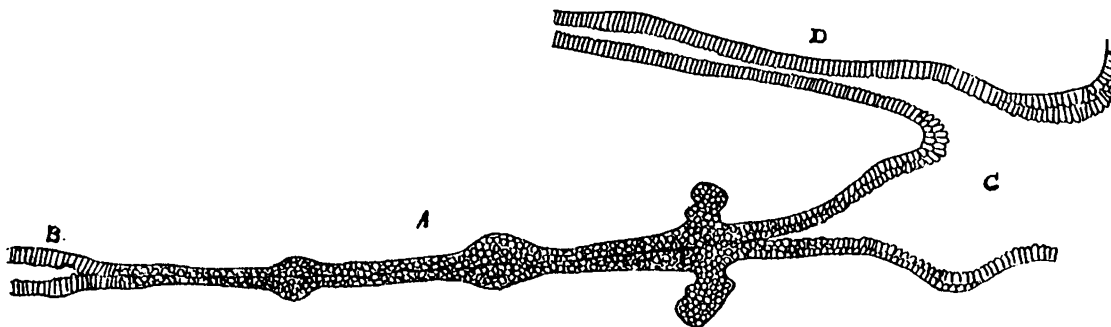


FIG. 1.

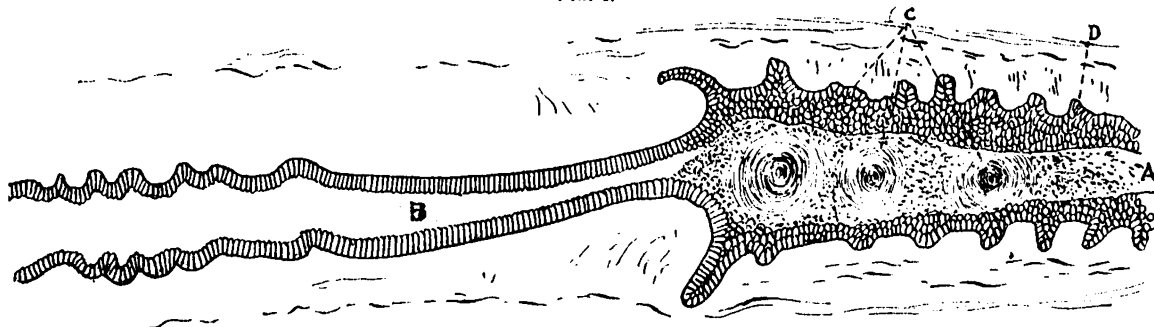


FIG. 2.

had come on at fourteen, and had been regular though preceded by pain. In the intervals there had been an occasional brown discharge, which at last became constant and offensive. The vagina was one and three-quarters inches in depth; and in the anterior part, a little to the right of the median line, was an aperture large enough to admit of the passage of a uterine sound. The opening was stretched and then torn to the vaginal wall, and after a few days' packing with gauze and wearing a glass speculum, the patient was discharged. Two months later there was no erosion, and except for a little ridge to mark the spot, the vaginal walls were smooth and normal. The second case was a woman, age twenty-three, who was admitted in labor because no os could be made out. Catamenia had appeared at twelve years of age, and had been regular until after marriage. There was habitually a slight discharge between the periods, but without ill odor. A membrane was found about midway in the vagina, and a little posteriorly to the centre was a nodule, and at the side of the nodule an opening which with difficulty admitted the tip of the forefinger. The opening was dilated and the septum torn, and the labor was finished without any further incidents. When discharged there was only a slight ridge to be felt along the anterior wall.

Heyder gives a very full report of a case seen by him. The patient was six months pregnant, and came to the hospital because of hemorrhage following a fall. There was found, one-half to three-quarters of an inch above the hymen, a septum through which there was only a pin-hole opening, situated near the symphysis and about one-twelfth of an inch in diameter. Menstruation had begun at fifteen, and continued quite normally and regularly. The membrane was split in the middle line and removed close to the vaginal wall with scissors. The vaginal mucous membrane was then united with fine stitches. The septum at its base was about one-twelfth of an inch in thickness. The

membrane showed no sign of scar-tissue on most careful examination. When full term was reached, the woman was delivered in a perfectly normal manner.

Dr. J. R. Chadwick has reported a case operated on by him, in which he gives a diagram of the pelvis, showing the condition.

In the course of the history of the above-mentioned cases, there is only one in which there has been any report of the histological structure of the tissue of the septum, and in this there was no inflammatory scar-tissue found. In almost all of the cases there has been no history of instrumentation or inflammation and we must conclude that it is most probable that this rare condition is usually congenital. No attempt has been made so far as I know, to explain this phenomenon which presents many difficulties, and the theory which seems to me most probable, may not be supported by subsequent investigations.

The Wolffian ducts which form the genital tract fuse together during the third month of fetal life. The process begins about two-thirds of the way down the genital tract, and extends both upwards and downwards. It may be that the septum is the result of the fusion beginning in two places, and thus a band is left separating the upper and the lower portion of the vagina. Boulton's case is probably an example of such an incomplete fusion of the Wolffian ducts; but the majority of cases probably are due to the persistence of conditions belonging to a later stage of fetal development.

The fusion of the Wolffian ducts is completed by the end of the third month; and, in the course of the fourth month, the genital tract which has been already by a sharp bend differentiated into an upper (or uterine) and a lower (or vaginal) portion, becomes flattened, and the epithelial surfaces meet and grow together, forming an epithelial lamina (Fig. 1) which, near the opening into the uro-genital sinus, is thickened, presenting on section a T-shaped appearance,

The next step in the development is that the epithelial lamina rapidly proliferates and the vaginal tract becomes much thickened. The floor and roof are thrown into folds which persist as the rugæ of the vagina; the external thickened portion dilates even more in proportion than the rest of the vaginal tract, forming the ampulla of the vagina and leaving a thin membrane, the hymen, between this dilatation and the outer sinus. At the upper portion of the vaginal tract the proliferation of the epithelium makes a cup-shaped outgrowth which embraces the lower end of the uterus. During the sixth month the lumen of the vagina begins to appear by the degeneration of the central portion of the thick mass of epithelial cells of which the vaginal tract is composed. From Tournoux's section there appears to be several distinct foci of degeneration (Fig. 2), and it seems possible that at some point in the vaginal tract between these foci there might be a group of cells which could retain their vitality and not be involved in the degenerative process and thus a transverse septum of the vagina result. That this condition is different from that known as an imperforate hymen may be seen from the fact that the hymen does not arise from a growth of one of the papillæ, as has been affirmed by some, but is the result of the resistance of the end warts of the original tubes to the proliferation of the epithelium which takes place freely inside the vagina. Should for any reason the vaginal opening which at the fifth to sixth month is a mere fistulous tract with a diameter of only one-tenth to fifteen-hundredths of a millimetre (0.1 to 0.157 mm.) remain closed or fail to connect with the sinus, the condition of imperforate hymen results.

The fact that such a condition as transverse septum may exist and not be discovered until the woman is in labor, makes this anomaly of practical value to the obstetrician, for although the septum seems to offer a decided hindrance to labor, yet when it is recognized, simple division of the membrane is sufficient in most cases to allow a speedy delivery and effect a permanent cure.

#### LITERATURE.

- Orth. *Pathological Anatomy*, vol. ii, p. 377.  
 Breisky. *Handbuch der Frauen Krankheiten*, vol. iii, p. 594.  
 Heyder. *Archiv. für Gynäkologie*, 1889, p. 502.  
 [DeLaunay. *Étude sur le Choisonnement Transversal du Vagin Complet et Incomplet, d'Origine Congénital*, Paris, 1877.]  
 Osmont (Caen). *Archiv. de Tocologie et de Gynécologie*, February, 1894.  
 Ostermann. *Centralblatt für Gynäkologie*, 1894, p. 123.  
 Smith and Boulton. *Transactions Obstetrical Society, London*, vol. xxiii, p. 117.  
 Gervis. *Obstetrical Society, London*, vol. xxiv, p. 210.  
 Barnes. *Obstetrical Society, London*, vol. xxv, p. 99.  
 Cullingworth. *Lancet*, 1889, vol. i, p. 726.  
 Maurin. *Gazette Hebdomadaire*, 2d Ser., xii, 1875.  
 Taylor. *Transactions American Gynecological Society*, 1879, vol. iv, p. 404.  
 Doléris. *Archiv. de Tocologie*, 1886, p. 135.  
 Chadwick. *Boston Medical and Surgical Journal*, June 3, 1886.  
 Minot. *Embryology*.  
 Tournoux et Wertheimer. *Soc. de Biologie*, 1882.  
 Pozzi. *Soc. de Biologie*, 1884.  
 Amann. *Archiv. f. Gynäkol.*, vol. xlii, p. 1.

**TEXAS STATE MEDICAL SOCIETY.**—At the annual meeting of this Society, held at Dallas on April 23d to 27th, Dr. P. C. Coleman, of Colorado, was elected President, Drs. Wagley, Kennedy and Bass, Vice-Presidents, and Dr. H. A. West, of Galveston, Secretary. The next meeting will be held at Fort Worth on the fourth Tuesday in April, 1896.

## SURGICAL TREATMENT OF HEMORRHOIDS.<sup>1</sup>

BY E. H. TROWBRIDGE, A.B., M.D.,

*Surgeon to the Out-Patient Department, Worcester City Hospital.*

This subject of hemorrhoids should be of equal interest to the general practitioner and to the surgeon.

I presume hardly a day goes by but that some one of you are consulted in regard to this troublesome affection; and very often by reason of the fact that the doctor does not manifest sufficient personal interest in the case, or from the fact that the patients become tired of further dabbling with palliative measures, they are allured by those who promise a speedy cure, without the use of the knife, or detention from business. Possibly the profession has been remiss in this particular affection, for certainly we are bound to give our patients the benefit of every improvement, whether it be in surgery or in medicine.

The existence of the hemorrhoidal state is favored by the structure of the parts and the arrangement of the arteries, and of the veins, which are valveless and tortuous; in this locality more than in any other in the body, the vessels are constantly liable to contraction and relaxation, on account of the function of the part, and the intricate arrangement of the muscles.

The natural classification of hemorrhoids is into those external to the anus, and those internal; while a third variety may be formed by a fusion of the external and internal masses.

The external pile may consist of a tag of skin which, when irritated, becomes inflamed and hypertrophied, or it may be a bloody tumor caused by the rupture of a vessel; the clot becoming organized and undergoing a fibrous change, and the submucous and the subcutaneous tissue becoming hypertrophied, there results a large mass at the anal orifice.

The internal pile consists of tortuous and dilated veins and arteries, attended with more or less exudate in the submucous and subcutaneous tissue. These masses are soft and spongy; may be large or small; may be easily irritated, inflamed and ulcerated. The large pile generally protrudes at stool while the small pile is not so likely to prolapse. The blood-vessels being easily distended and the mucous membrane being thin, rupture readily takes place and hemorrhage results. It is this hemorrhage which constitutes the dangerous element of the internal pile; at each stool the patient may lose a large amount of blood, which in time renders him anemic and debilitated.

The special feature of the external pile is pain, which is aggravated after stool and when the pile is inflamed; the pain is intensified, by the patient sitting, standing or walking; the recumbent posture is the only one which offers relief.

The diagnosis of the hemorrhoidal condition can be readily made by ocular inspection; but in every case, never fail to examine digitally and that by the little finger; this is long enough to reach to the highest point where the piles are liable to exist, and by reason of its small size it gives the patient less pain than when any of the other digits are used in the examination.

Finding this affection existing in our patient, what method of treatment shall we adopt in order to effect a speedy cure, and that, too, agreeably to the patient and without pain?

<sup>1</sup> Read at the meeting of the Worcester District Society, January 9, 1895.