

wound. Absolute rest, opium by mouth, or morphia-injections are the best means of meeting it.

*Incontinence of urine may persist* after the healing of fistula. This may be due to paralysis of the sphincter urethræ, or to injury of the structure of the urethra. As a palliative, an urethral pad may be used. Lacerations, or loss of tissue by sloughing, may be treated by plastic operations. *Retention of urine* may occur either as the immediate effect of the operation, so as to compel resort to the catheter; or later as the result of cicatricial atresia at the seat of the operation, especially when this is at the junction of bladder and urethra. In such a case gradual dilatation must be effected by bougies, or by wearing a catheter. In rare cases, *calculi* have formed in the bladder after operation.

When the cervix uteri is involved in the loss of substance it becomes a question whether the opening can be closed without also closing the os uteri. Sometimes it is necessary to pare the posterior surface of the os uteri, making this one side of the wound which is to be united to the neck of the bladder. In many cases the anterior lip of the os uteri may be pared and made to form one side of the wound. This, united with the neck of the bladder, leaves the os uteri open behind it.

When the fistula is vesico-uterine, it may be impossible to get at the fistula itself. In such a case Jobert closed the os uteri. J. R. Lane, having operated in this manner, found that the uterus enlarged afterwards. This was at first thought to be due to retention of menstrual fluid, and a puncture was made through the place of union. This resulted in an abortion of four months' gestation. It is conjectured that the semen got access along the track of one of the sutures. The patient was cured by repeating the operation.

In those still more severe cases in which the urethra, neck, and floor of the bladder have been destroyed, various attempts more or less successful have been made. The proceedings for relieving these cases of extreme deficiency consist in 1. Closing the lower part of the vagina (Jobert) so that the upper part forms a common receptacle for the secretions of the uterus and the urine; 2. Including the vaginal-portion in the wound so that the os uteri opens into the bladder or urethra; 3. Simon has shown that when there is much deficiency of bladder and urethra, the vaginal-portion may be brought downwards so as to be united in a curved line with the lower margin of the fistula, thus shortening the vagina.

Emmet succeeded in cases where there was too great loss of vaginal tissue in utilizing the mucous membrane of the bladder to supply part of the flap.

In some cases of total loss of the urethra a new urethra has been made by plastic operations. Emmet relates successful cases. I have seen a good restoration made by Chambers at the Chelsea Hospital for Women. Emmet and Simon may be consulted for practical details concerning cases of this nature.

At one time small fistulæ were treated by the actual cautery, in the hope that the resulting slough would be followed by cicatricial contraction and closure. This method cannot be depended upon. The more certain and scientific procedure by suture ought to be adopted at once. But in

the recent state whilst the slough is being cast, the opportunity should be taken to promote healthy granulation.

Dr. Goodell relates (*Amer. Journ. of Obst.*, 1874) a case in which he treated a large slough of the vagina which opened the bladder by fuming nitric acid. The opening gradually closed completely, cure being effected.

Vesico-vaginal fistulæ once fairly healed are not very liable to relapse. But Dr. Bourdon (*Arch. Gén. de Méd.*, 1872) reports four cases of relapse from Verneuil's *clinique*, all in women who became pregnant.

*Recto-vaginal fistulæ* are far less frequent than vesico-vaginal. The hinder wall of the vagina is much less exposed to injury than is the anterior wall. Violence is far more likely to rend through the perineum than to cause a fistula. Moreover, the distress arising from rectal fistulæ is less urgent. It may be only when the stools are liquid that any fecal matter comes through the fistulæ into the vagina. The recto-vaginal septum differs from the vesico-vaginal septum in being much more movable and yielding, so that less strain comes upon the opening. Some recto-vaginal fistulæ heal spontaneously or under the action of cautery, so that longer time may be given for observation than is justifiable in the case of bladder fistulæ.

Emmet finds that a large proportion of recto-vaginal fistulæ are complicated with vesico-vaginal fistulæ. The vesical lesion, he says, should be treated first. And owing to the greater amount of cicatricial tissue found in the rectal fistulæ, longer preparatory treatment is generally necessary.

The operation for closing these fistulæ from the vaginal aspect is essentially the same as for vesico-vaginal fistulæ. Simon observes that since the contraction of the cicatrix is very strong in the longitudinal direction, the fistula must be pared in the transverse direction whenever possible, so that the drag of the scar may favor the healing. It is only when the longitudinal diameter of the opening much exceeds the transverse diameter that the paring should be made in the longitudinal direction.

Where the fistula is large and close to the os uteri, it may be necessary to direct the os uteri into the rectum, so that the menstrual flow may take this route. Another mode of proceeding, one especially adapted to fistulæ seated just above the sphincter ani, and to those cases where an opening is left after the operation of perineal restoration, is to slit up the remains of the perineum through the bridge of tissue below the fistula, and then paring the edges and bringing them together, as in the operation for perineorrhaphy, where the sphincter ani has been torn through. Simon has practised yet a third proceeding. In cases where the fistula is seated in the uppermost part of the septum, and the vagina is very constricted, neither of the two preceding operations will succeed. In these Simon operated through the rectum. The sphincter being divided in two places, dilatation of the anus and access to the fistula, although high up, were surprisingly easy. In this way he succeeded, after several failures by the vagina. But in similar cases Emmet succeeded by operating by the vagina, relying mainly upon the sense of touch, when the parts could not be brought into sight.

*Lacerations of the Perineum.*—These are of varying extent and kind. Some slight rent of the anterior edge or *fourchette* is common in first labors. It entails no distress. Those lacerations which demand surgical treatment may be divided into three classes: 1st. Those in which the rent does not involve the sphincter ani. 2d. Those in which the whole perineal body is divided, so that the sphincteric control of the anus is lost. 3d. Those in which the perineum is perforated by the child, a central hole, resulting in a fistula, being made, the fourchette in front and the anus behind remaining intact.

In a considerable proportion of cases of the second order spontaneous healing sufficiently complete takes place; and this healing may be greatly promoted by keeping a strip of lint soaked in solution of chloride of lime between the wounded surfaces. Granulation takes place from the fork behind forwards. In other cases where the sphincter is involved, immediate union should be attempted by applying sutures within a few hours after the injury. If the hindmost suture is well applied so as to bring the rent surfaces of the sphincter together, union is generally accomplished. In France immediate union is practised by the use of "*serres-fines*," or spring-clips, which bind the torn surfaces together. Mann, in a good practical memoir on this subject (*Amer. Journ. of Obstetrics*, 1874-75) adduces satisfactory evidence in support of this practice. Even where nothing is done, a surprising degree of restoration is not seldom accomplished. Granulations meeting from opposite surfaces may unite and consolidate into firm tissue. This is unmistakably seen in those cases of incarceration of pessaries, where rings of strong tissue are formed encircling the pessary.

But when the rent does not heal, serious distress is often felt, even in those cases of minor injury in which the sphincter is intact. The loss of the perineal floor is attended by other inconveniences besides the increased liability to prolapsus. Indeed, prolapsus uteri does not always follow on laceration of the perineum. I have known sterility persist until the perineum was restored. Probably the loss of the retentive capacity of the vagina was the cause. The subject feels "open." She is conscious of being unsound. There is no support for a Hodge-pessary.

The nature of the injury will be understood on referring to Fig. 178, modified from Thomas, and to Figs. 1 and 10 in this work. Fig. 1 represents the "perineal body" in its integrity. It forms a thick musculo-membranous cushion which supports the posterior and the anterior walls of the vagina. If the forepart of this cushion be divided, as shown by the dotted line in Fig. 178, the support of the anterior vaginal wall is impaired, but the sphincter being uninjured, control of the anal aperture is preserved. But if the rent extends quite through into the rectum, not only is the natural support of the vagina lost, but the control of the anus is also lost.

In restoring the perineum it must be borne in mind that this body or structure is of a triangular shape, the base below at the skin, the apex at the summit; and that anything less than the restoration of this triangle will be ineffective. For example, a superficial union as indicated by the dark shadowing in Fig. 178 will fail to give adequate support to the vaginal walls, and will in all probability give way at the next labor.

*The Operations for Restoring the Perineum: Preparatory Steps.*—All morbid complications should be as far as possible removed. A healthy condition of the parts should be obtained by cleanliness, and the cure of any complicating uterine disease. The bowels should be cleared by aperients and enemata. The time chosen is within a week after menstruation.

*The operation* differs in the two cases of partial and complete rupture. In the first case the operation is very simple, and should rarely fail. In the second case, the difficulty is often serious, and success has sometimes to be pursued in two or more trials.

*The Operation for Partial Rupture.*—The patient is placed in lithotomy-posture. It is convenient to keep the knees fixed steadily apart by a transverse bar having a semicircular rest for the knees at each end.

FIG. 178.

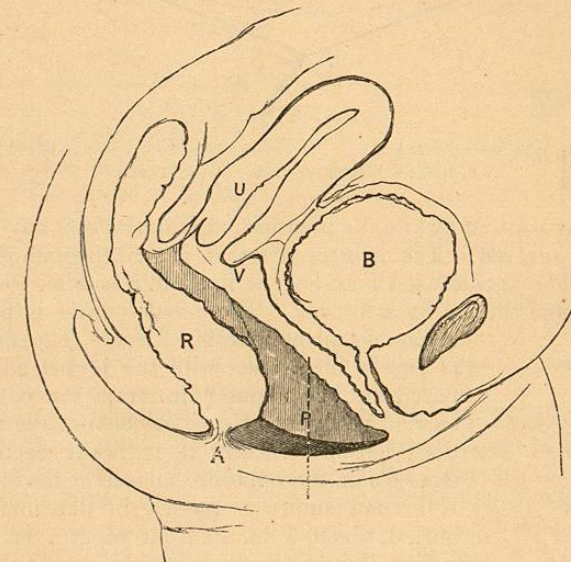


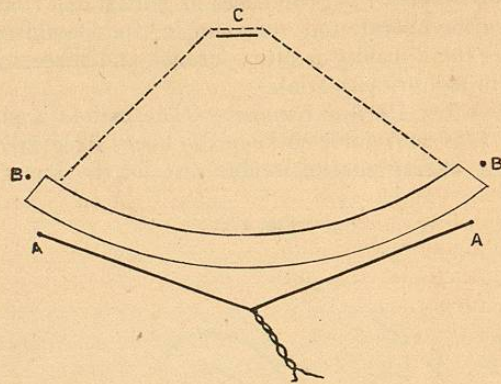
Diagram representing the "Perineal Body" modified after Thomas (R. B.).

A, anus; B, bladder; R, rectum; U, uterus; V, vagina; P, perineal body; the upper part more lightly shaded represents the recto-vaginal septum, the darkly-shaded lower triangle is the perineum proper. The broken vertical line shows the limit of simple lacerations not involving the anal sphincter.

The lips of the vulva are held apart by assistants by fingers or retractors. The operator marks out the outline of the surface to be pared. This is triangular, the deepest part extending from the skin-surface as high as the apex of the normal perineal body (see Fig. 178). From this apex the wound extends forward on either side to the edge of the labia minora narrowing to meet the skin. The paring should not extend forward beyond the natural extent of the perineum. The paring may be effected by carrying a sharp straight bistoury from behind forwards through the central line of the vagino-rectal septum, taking up only the

mucous membrane. The knife is then carried outwards, so as to raise the mucous membrane in a thin flap on either side. The wound is then examined, and any projecting bit of mucous membrane or skin lying in the way of the parts to be brought into apposition is cut off. Bleeding

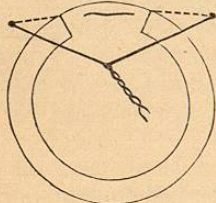
FIG. 179.



B B, represents the split Sphincter Ani, A A ; c, the course of the Suture necessary to bring the ends, B B, of the Sphincter together. (After Thomas.)

is arrested by waiting awhile, by pressure, and by twisting any arterioles that may be severed. The sutures are then passed, beginning with the hindmost. The needle used may be one fixed in a handle, well curved, or a free needle carried by a forceps. The handle-needle is preferable.

FIG. 180.



Showing the Ring of the Sphincter Ani nearly restored by drawing up the Suture passed as in Fig. 179. (After Thomas.)

of the muscular ring constituting this structure must be brought into accurate apposition. Fig. 179 represents the sphincter torn open, and the way of reuniting the ends to reform the ring. The needle passed in at A, is buried along the course of the dotted line, passes under c, the anterior boundary of the anus, and comes out at A to the left. Drawing the suture up, the ring of the sphincter is reformed, as seen in Fig. 180, in which the two ends of the sphincter are brought nearly together. A little further tightening will complete the ring. To fix the sutures some

prefer the quills, some various modes of twisting. Charles Brooke used broad flat beads, and contended, I think, with reason, that each suture could by this means be so set as to effect the most accurate contact of the wound. It is obvious that the pressure must be different in the case of the suture which is applied to the thickest part of the perineal triangle from that which is enough to draw together the thinner part of the wound in front. The beads adapt themselves perfectly to this varying condition. The drawback is that they are apt to bury themselves in the skin, causing sores. To obviate this the sutures should not be drawn too tight, and the beads should be large.

The quills effect much the same end as the beads. But being continuous rods they can hardly exert pressure adapted to the degrees of thickness of the wound as the beads do. And they also are apt to bury themselves in the skin. The best form of quill is the rounded ivory bar of James Lane, perforated in three or four places for the wires.

But many operators now discard quills, simply twisting the ends of the sutures.

If it be determined not to use quills or beads, the best plan is to bring the ends of the sutures together by Aveling's coil-clamps and shot. This, like Brooke's beads, admits of regulating the tightness of each suture, according to the situation. I think the best plan is to pass the suture ends through a large Brooke's bead, and then to secure them by the coil-clamp and shot. A broader surface is thus insured next the skin.

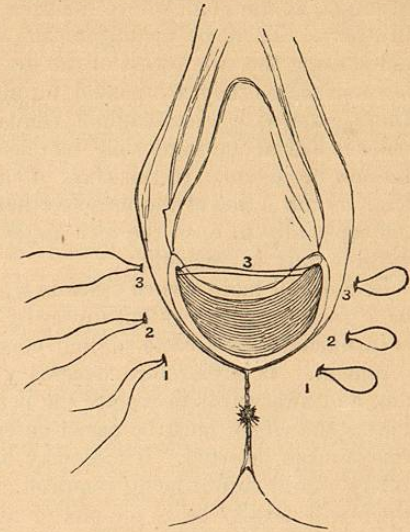
It is not necessary to divide the sphincter ani, to relax the tension on the wound, as Baker Brown did.

The sutures may be removed at the end of six or seven days.

The bowels need not be restrained by opium for seven or eight days. A winged catheter should be kept in the bladder, or the urine should be drawn off every eight hours. The deep sutures should be cut and removed, together with the ivory clamps, at the end of three or four days. Some oedematous swelling generally takes place, but soon subsides when the pressure of the sutures is removed. If left longer than this, irritation and suppuration are apt to be set up, and no compensating advantage is obtained. The superficial sutures need not be removed till the sixth or seventh day. The bowels may now be opened by a mild aperient, followed by an enema.

In the cases where the perineum has been torn through into the anus,

FIG. 181.



Showing Wound and application of Sutures in restoration of the Perineum. 1, 2, 3 represent the course of the Sutures and the order in which they are introduced. (After Thomas.)

somewhat greater care is necessary to secure accurate contact, and especially to prevent any aperture being left between the rectum and newly-made perineum. The latter untoward result may be best avoided by splitting the recto-vaginal septum for a short distance in the horizontal direction, at the point where it forms a sort of *éperon* at the centre of the torn part. Then, by turning up the vaginal portion of the split septum, and causing the two lowest of the deep sutures to take a hold of it on its new surface as they are passed through, it will effectually cover the spot where otherwise recto-vaginal communication might probably be left, while it will at the same time increase the thickness of the lower part of the new perineum. In this class of cases division of the sphincter is beneficial, as the action of the muscle otherwise tends to separate the surfaces, and especially to open the torn angle of the wound. But an incision on one side only is sufficient.

In the still more severe cases in which the recto-vaginal septum is torn for a greater or less extent upwards, the operation above described will be insufficient, as a recto-vaginal communication would be almost certain to remain. It is therefore necessary first to unite the recto-vaginal septum, and afterwards to restore the perineum. To unite the recto-vaginal septum the edges must be pared on each side, and a sufficient number of wire sutures inserted. These may be secured by simply twisting their ends, no quill suture being required. When union is complete and firm, which will usually be at the end of about three weeks, the second operation for the restoration of the perineum above described may be undertaken.

To secure fine adaptation of the rectal and vaginal mucous and of the cutaneous structures, the operation as described by Mr. Hulke is effective: Two triangular flaps of vaginal mucous membrane are first dissected up; then the cleft in the rectum is sewn with three fine silk sutures, the ends of which are left in the bowel. Several sutures of the same material are then adapted to the vaginal mucous membrane that had been previously dissected up. Next, the raw surfaces made by thus raising the flaps of mucous membrane are brought together with quilled sutures passed deeply, making a long and thick perineum; and lastly, the tegumentary edges of this are joined with fine silk sutures.

The *new formations* in the vagina are not numerous or frequent. They consist almost exclusively in fibrous tumors, cystic tumors, sarcomata, the papillary excrescence, and cancer.

*Fibrous tumors* and *sarcomata* are developed in the fibrous or muscular coat of the vagina, and often but not invariably are associated with similar formations in the uterus. The fibroid tumors project into the vagina, and sometimes assume a considerable bulk. Tumors also form in the connective tissue, between the rectum and vagina, and are developed equally towards either canal, or bulge out more into one or the other.

The sarcomata proceed mostly from the uterus, and from the cervix.

Mr. Curling (*Pathol. Trans.* vol. i.) describes a firm solid tumor growing from the upper part of the vagina, to which it was attached by a broad peduncle, which commenced just behind the meatus of the urethra. The tumor consisted of a mass of dense fibrous tissue partly arranged in large globules, and developed in the submucous areolar tissue of the vagina.

It had been forming for many years, and lately had projected outside the vulva. Free bleeding occurred from one or two large vessels at the posterior part of the peduncle.

Papillary outgrowths are not so common in the vagina as on the cervix uteri, but they sometimes assume a cauliflower shape, with a more or less defined stalk. At the entrance of the vagina they take the form of condylomata.

*Cystic tumors* are occasionally found in the walls of the vagina. They are certainly of rare occurrence. Thus Scanzoni says (1856) that he had only met with one case, and West's experience furnishes only two. Several clear examples have come under my observation. McClintock gives the histories of two cases. The origin and nature of these cysts are not clearly determined. In some cases possibly they resemble fibrocystic tumors of the uterus, the cystic element being specially developed. In others, according to Huguier, they originate in obstructed mucous follicles. Scanzoni says, in autopsies one meets with cysts the size of a pea or of a cherry; but accurate information always proves that these neoplasms were not developed in the walls of the organ, but in the perivaginal cellular tissue. Rokitansky also says the primitive seat of these cysts is outside the vagina, with which they have only a secondary relation. This, I think, I have verified in some cases. Strictly vaginal cysts must be distinguished from vulvar cysts, which are not uncommon. There are two specimens of cysts removed from the vagina in Guy's Museum, Nos. 2281<sup>80</sup> and 2281<sup>82</sup>. I have removed two by wire-écraseur. In one case it appeared to me that the origin of the cyst was a blood-tumor or hæmatoma. I have seen several hæmatomas of the walls of the vagina not always traceable to labor. The absorption of the blood would leave a cyst which would subsequently be filled with serum or muco-purulent fluid.

The treatment consists in removing the tumors altogether, if this can be done without involving too extensive a wound. Otherwise they may be laid freely open by bistoury, and the cavity plugged with tincture of iodine on lint.

They sometimes burst and continue to pour forth an offensive discharge. In a case under my care in St. Thomas's a cyst burst into the urethra. It gave rise to extreme dysuria. It caused a considerable fluctuating swelling in the vagina. It was cured by free cauterization with nitrate of silver of the cavity of the cyst through the urethra.

Dr. Gibb described (*Path. Trans.*, vol. v.) a specimen in which small calculi (phlebolithes) were taken from between the coats of the vagina in a colored woman.

Nitric acid or the actual cautery may arrest the disease, or produce for a time a healthier surface. Bleeding may be controlled by plugging with pledgets of lint soaked in solution of perchloride of iron, or in tincture of iodine, or with the styptic cotton-wool.

Primary cancer of the vagina is rare. McClintock says no well-marked and undoubted instance has fallen under his notice. In all cases of vaginal cancer, the disease he found had spread from the uterus or the vulva. Dr. West believes that the rarity of primitive vaginal cancer has been exaggerated. And I have seen several cases where epithelioma began

at the meatus urinarius. I have now and then met with a peculiar contraction of the vagina in old women, attended with ulceration and offensive discharges, which I believe to be of cancerous nature, and in which I concluded that the uterus was not involved. In one case which came under my care at the London Hospital, that of a woman aged seventy, there had been for ten months a sanguineous discharge of "dirty white" color, pain down inside thighs and lower belly, chiefly at stool. She was obliged to lie down; she felt as if sitting on a sharp instrument. About one inch up the vagina, an annular constriction was felt just admitting the finger; through this was a pouch, at the back of which was the enlarged and hardened os and cervix uteri. The sensation was much as if the finger passed through a fistula into the rectum. But passing one finger into the rectum and one into the vagina, the septum was felt perfect, and her "stools passed the right way." Blood flowed on examination. Atresia of the canal is not uncommon when the vagina is the seat of cancer. Rare as is vaginal cancer, there may occasionally be seen here and there scattered over the vaginal surface independent roundish, or flat medullary watery projections, discoid or honeycomb elevations of the cauliflower excrescence.

The vagina affords, like the peritoneum, clear opportunities of observing how cancer can propagate itself by contact. Thus it is not uncommon to find a patch of cancerous growth on the opposing surface of the primary seat of the disease. Dr. Cayley describes (*Pathol. Trans.*, xvii.) a case of epithelioma propagated by contact from the posterior to the anterior wall of the vagina.

The *diagnosis*, presuming that a digital examination is made, is easy. The rough, hardened, contracted walls of the vagina communicate a sensation different from that of the healthy, or of any other diseased state of the vagina. The speculum will expose the disease. The examination, howsoever gently made, is moreover pretty sure to cause a little bleeding; and the offensive discharge supplies further evidence.

The *course and terminations* of vaginal cancer resemble those of uterine cancer. Indeed, in almost every case vaginal cancer is but an ulterior stage of uterine cancer. The disease extending deeper invades the rectum and bladder, leading probably to perforation. Death occurs through exhaustion, blood-infection and degradation, mechanical impediment to the functions of the bladder, kidneys, and intestines.

In *treatment* unhappily little can be done. There is no room for attempt at ablation. We can but seek to arrest progress by powerful caustics, and failing this, fall back on palliative measures.

The palliative treatment differs in no respect from that described as applicable to cancer of the uterus.

## CHAPTER XXIX.

## THE DISEASES OF THE VULVA.

INFLAMMATION: GENERAL OR PARTIAL; OF THE VULVO-VAGINAL GLANDS; ABSCESSSES; ULCERATIONS; SLOUGHS; HEMATOMA; VARICOSITY; PRURITUS; ECZEMA; FOLLICULITIS; HYPERTROPHY OF LABIA AND CLITORIS; "ENDERMOPTOSIS;" NEUROMATA; CYSTS; SYPHILITIC WARTY EXCRESCENCES; LUPUS; CANCER; MELANOSIS; VASCULAR EXCRESCENCE AND OTHER GROWTHS OF THE MEATUS URINARIUS AND URETHRA; FISSURE OF THE VULVA. COCCYGODYNIA.

SOME of the diseases of the vulva are marked by exquisite pain. The free distribution of sentient nerves, the richness and complexity of the vascular apparatus, and the multiplicity of the delicate organs accumulated in this region, account for this feature. Another condition to be noted is the active reflex association with the nervous centres, cerebral and spinal. This is remarkably manifested when we induce anaesthesia to facilitate examination or operations. The vulva seems almost the last part in which the reflex irritability is suspended. The reactions upon the general nervous system are often complicated and distressing, and are not seldom overlooked. In addition to these conditions, which always exist, there is often found a morbid neurotic element inherited or acquired, or a blood dyscrasia or diathesis, as gout.

*Inflammation of the vulva—vulvitis*—may be partial, that is, limited to a part of the structures of the vulva, as to one vulvo-vaginal gland and one labium: or it may be *general*, that is, involving all the structures of the vulva on both sides. It may be limited to the vulva, which is not uncommon, or it may be complicated with colpitis.

The vulva is liable to various forms of inflammation: Erythema, phlegmonous inflammation of the labia, acute or chronic, furuncle, erysipelas, herpes, eczema, prurigo, and the follicular inflammation of Huguier. Œdema is a frequent complication of these affections. They often leave a degree of thickening, hypertrophy, or sclerosis of the tissues of the nymphæ, clitoris, or vulva.

*Inflammation of Bartholini's glands* is frequently caused by unclean sexual intercourse, especially of a gonorrhœal character. I have seen a chronic inflammation, which had lasted ten months, disappear quickly under no other treatment than iodide of potassium. I had suspected syphilitic disease. It may be the result also of want of cleanliness, and the irritation produced by the retention and partial drying of leucorrhœal discharges.

Inflammation having attacked the substance of the gland, causes extreme pain from the distension of the gland within its capsule and the surrounding connective tissue. The inflammation may be limited to the