DISEASES OF THE VULVA AND VAGINA (NON-MALIGNANT).

Hypertrophy of the External Genitals.

The parts most frequently subject to hypertrophy, whether congenital or acquired, are the *nymphæ* or *labia minora*. In women, with liberal development of subcutaneous fat, the nymphæ are often entirely concealed by the labia majora. Ordinarily, they project far enough for the edges to be seen. Occasionally, however, they project like wings folded over the vestibule or unite over the clitoris to form an apron, or one or both may be divided into one, two, or more folds, forming double, triple, or even quadruple nymphæ; or one labium may be larger than the other; or they may extend down and unite in front of or behind the anus, and cover up the vestibule so completely as to cause great annoyance, and may even require an operation for their removal. Among the Bushmen and Hottentots the labia minora often become enormously developed, and hang like thick aprons down to the knees.

Inflammation may result in cases of hypertrophied nymphæ from the friction of walking, riding, or excessive venery. Sexual irritation undoubtedly causes enlargement and even hypertrophy, but should not be considered as the usual cause.

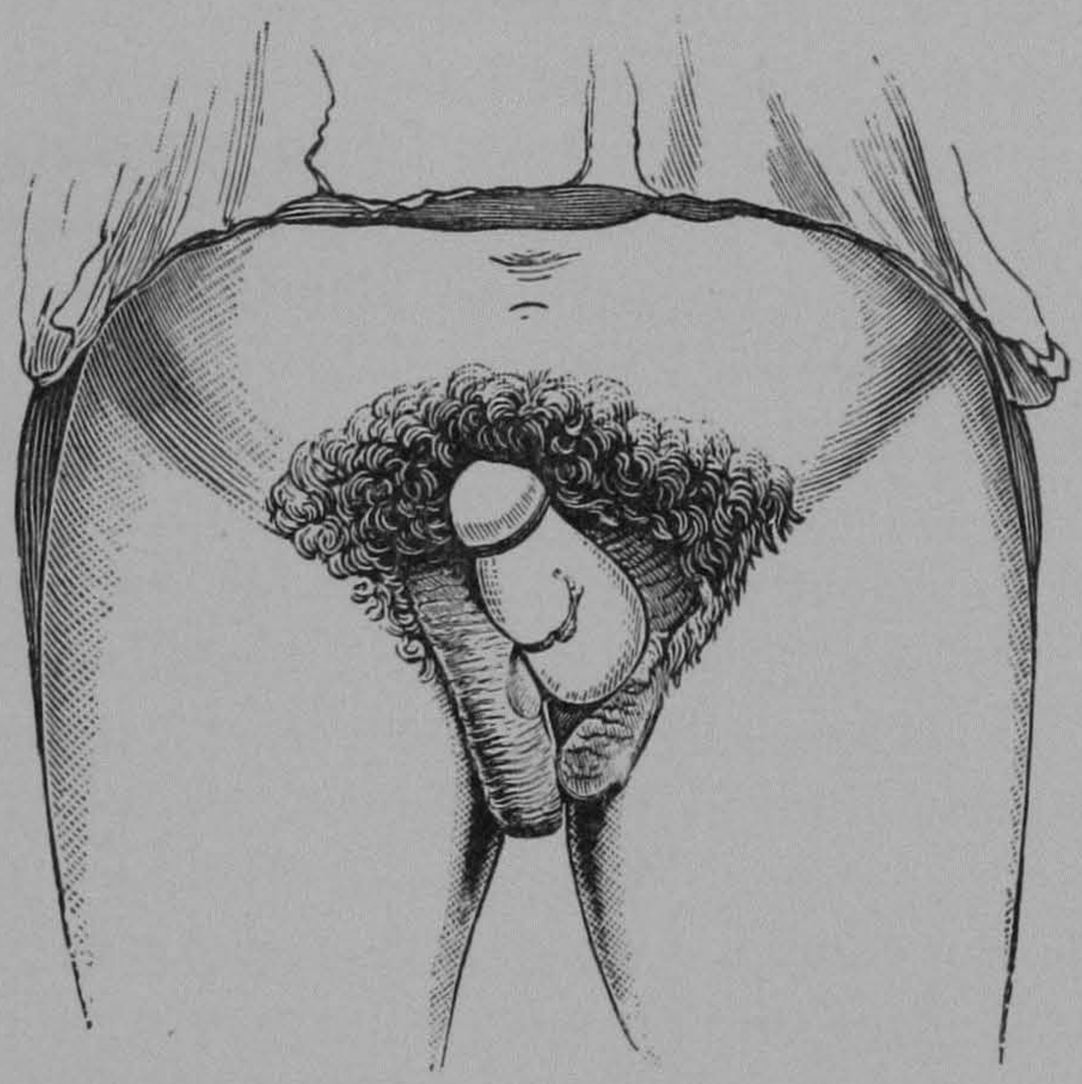
The remedy for these conditions consists in amputation and sewing up of the edges with fine catgut or, preferably, silkworm-gut.

The *labia majora* vary greatly in size in different women, sometimes projecting like cushions tightly pressed together, and sometimes consisting merely of loose folds of skin on either side of the exposed nymphæ. The latter condition is often found in very thin and in old women. Occasionally the labia will extend down so as to form a fold in front of the anus, and have even been known to surround the anus. A superabundance of labial fatty tissue not only conceals the labia minora, but sometimes seems to draw apart the folds that form the latter to such an extent as almost to obliterate them.

The *clitoris* is relatively larger in children than in adults, because

toward puberty the developing labia gradually project over and cover it. True hypertrophy of the clitoris is much less frequent than of the nymphæ. Occasionally, however, the clitoris is found to attain the size of a boy's penis, with powers of erection, and when accompanied by adhesion of the labia may conceal the sex. An amputation may become necessary, on account of the abnormal direction of the stream of urine, friction, excoriations, etc., particularly when occasioning trouble in childhood.

FIG. 49.



Hypertrophy of the Clitoris.

ADHESIONS OF THE LABIA.

Adhesion of the labia usually occurs in infancy and in childhood, and occasionally is found in adult life. It consists merely in an agglutination of the surfaces without loss of epithelium or organic union. Deficient hardening of the epithelium has been given as a cause, and comparison has been made with the adhesion of the prepuce to the glans in the male. Uncleanliness, irritating discharges, and mild forms of inflammation may lead to it.

It usually causes no symptoms, but may give rise to inconvenience by directing the urine upward. Later, menstrual fluid may be retained or may be expelled with difficulty. Coitus is usually interfered with, although not always. A woman in labor in whom the vagina could not be found, although the head was

down upon the perineum, was recently observed. What at first seemed to be the vagina was an enormously dilated urethra, through which the finger easily and painlessly entered the bladder, and through which copulation had taken place. The occluding labial diaphragm was punctured a little below the urethra in the median line, the opening torn large enough to admit two or three fingers, and the advancing head accomplished the rest. The puerperium was normal, and the parts afterward regained their natural relationship.

In young children it is only necessary to separate the labia forcibly, and to keep the parts cleansed and lubricated for a few days to prevent an immediate recurrence. In older people the best way is to introduce a bent sound into the vagina, just under the urethra where a small opening can usually be found, and to tear the labia asunder from within outward by dragging the sound out between them. When such an opening cannot be found, and the parts are not separable by moderate force from without, menstruation may be awaited. The vagina will then become filled and the labia put upon the stretch by the retained fluid. The bladder should be emptied, a sound placed in it, a finger introduced into the rectum, and a bistoury trocar plunged into the fluid mass, in the median line, a little below the urethra. The opening should then be enlarged until the finger can enter the vagina, when the adherent labia are separated. Subsequent care prevents reunion.

Organic union of the labia, due to traumatism or ulcerative inflammation, has been known to take place and requires operative measures similar to the last mentioned. (See "Atresia of the Vagina.")

Vulvitis.

There are three varieties of vulvitis, or inflammation of the vulva—viz.: simple, purulent, and follicular.

Simple Vulvitis is generally caused by local irritation. Acrid vaginal discharges, dirt, accumulated secretions, dribbling urine, parasites, traumatism from scratching, friction, and masturbation are the most common causes.

Increased redness with more or less tumefaction and watery or mucus discharges are characteristic.

Burning pain, particularly upon the passage of urine, and persistent itching are the main symptoms.

The TREATMENT should be directed to the removal of the cause.

Copious hot water, or ½ of 1 per cent. aqueous saline douches, 1 or 2 per cent. carbolated aqueous douches, or acetate of lead, a teaspoonful in one or two quarts of water, or a $\frac{1}{1000}$ or $\frac{1}{2000}$ solution of bichloride of mercury, are useful when acrid or fetid vaginal discharges are present. Lotions of acetate of lead, carbolic acid, or tannin should be used externally, and may be continuously applied on cloths, if the patient can be kept quiet. Or, the oxide-of-zinc ointment, to which 5 per cent. of carbolic acid or 2 per cent. of menthol is added, may be frequently applied, and often gives great comfort and relief. The milder applications should be used in the beginning of the attack; the stronger in the advanced stages.

Purulent Vulvitis results from the same sources as simple vulvitis, and is often an advanced stage of the same. Gonorrheal infection is a frequent cause. Direct infection by septic matter may be the primary cause.

Redness, tumefaction, and a muco-purulent discharge are always present. In aggravated and neglected cases, eroded and ulcerated spots are found on the inner surfaces of the labia, and sometimes excoriations on the inner surfaces of the thighs.

The SYMPTOMS are the same as in simple vulvitis, but intensified. A moderate degree of febrile reaction and restlessness at night are often noticeable in children thus affected.

Although the disease may pass over without treatment, it should not be forgotten that there is danger of progressive infection of the vagina, uterus, and Fallopian tubes.

The TREATMENT must have special reference to the septic nature of the disease. All that would be necessary, in addition to such treatment as has been given for simple vulvitis, is to obtain and maintain perfect cleanliness. This requires more care than is ordinarily understood by that term. If we could wash off the pus by constant irrigation with plain water, or ½ of 1 per cent. solution of chloride of sodium, or wash the parts every half hour or hour with a saturated solution of boracic acid, the pus-microbes would soon be exterminated, and a mild form of simple vulvitis established, or a perfect cure attained.

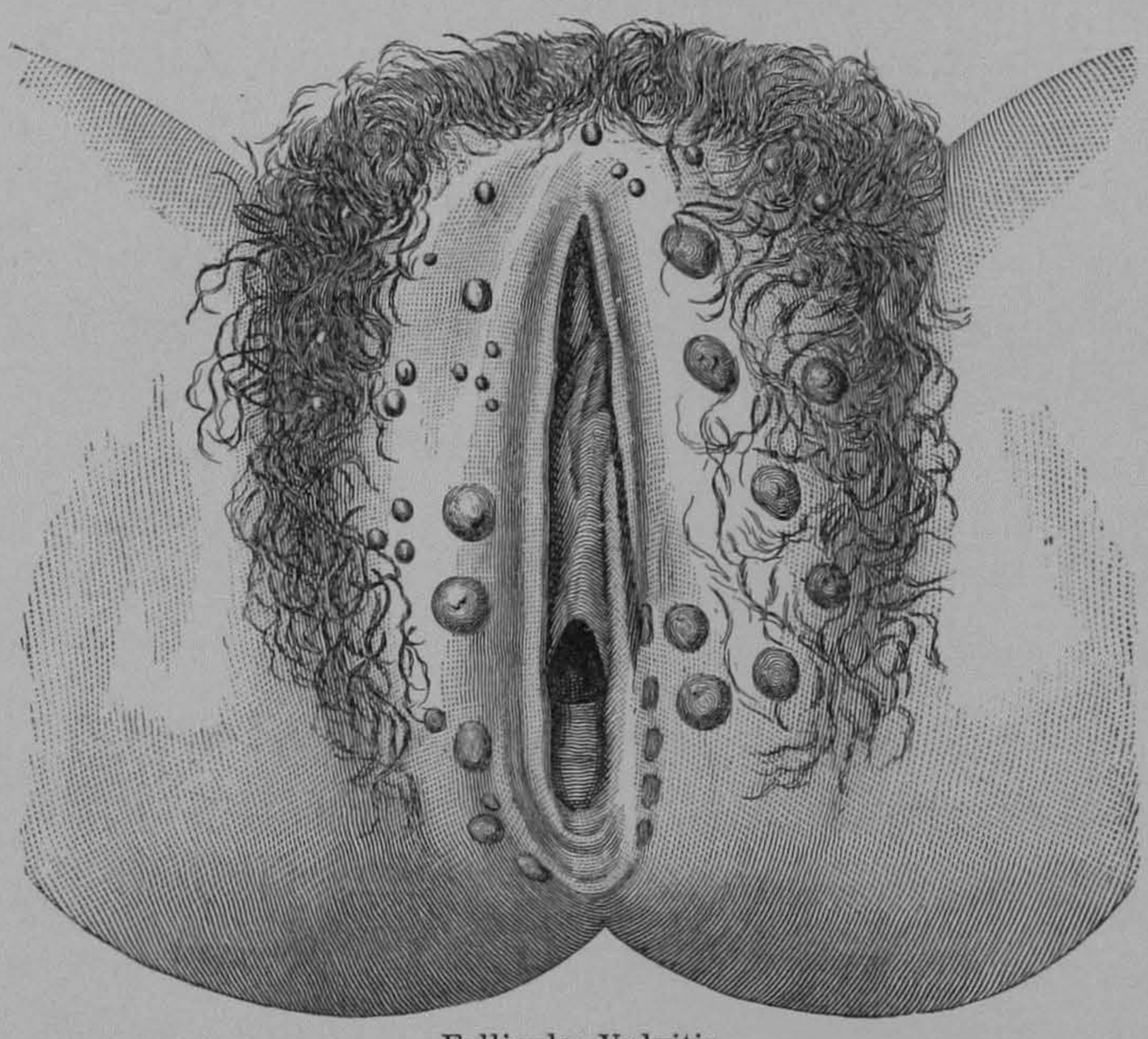
Warm sitz-baths in ½ or 1 per cent. saline solution, three or four times daily, are of great benefit in removing secretions. The parts should be bathed as nearly every hour as possible with the saline or boracic-acid solution until the tenderness has somewhat subsided, and then with a weak acetate-of-lead or tannic-acid solution,

and the case treated the same as in simple vulvitis. Cloths wet in these solutions may be used at night instead of frequent washings. After the discharge is partly checked, dry pieces of absorbent cotton, soaked every hour or two and reapplied, after a mild astringent or antiseptic lotion has been used and the parts thoroughly dried, constitute the very best kind of dressing.

The stronger astringents and antiseptics, such as a 2 per cent. solution of nitrate of silver or a $\frac{1}{2000}$ solution of mercuric bichloride, are required only in neglected cases and those that cannot be frequently dressed. As the parts cannot be cared for as often in the night, the mercuric or silver solution may be advantageously used at bedtime.

Follicular Vulvitis is the name given to the inflammation of the glands of the vulva. Sometimes the sebaceous and piliferous glands are enlarged and project like minute papillary elevations upon the

FIG. 50.



Follicular Vulvitis.

surface of the labia and prepuce. This enlargement of the separate glands is produced by the distension with mucus or muco-pus, which may be seen to exude from them. At other times there are no distinct elevations, and the inner surface of the vulva is covered by an offensive mucus or muco-purulent secretion.

The CAUSES are, want of cleanliness, vaginal discharges, pregnancy, discharge from malignant disease, and a reduced state of vitality.

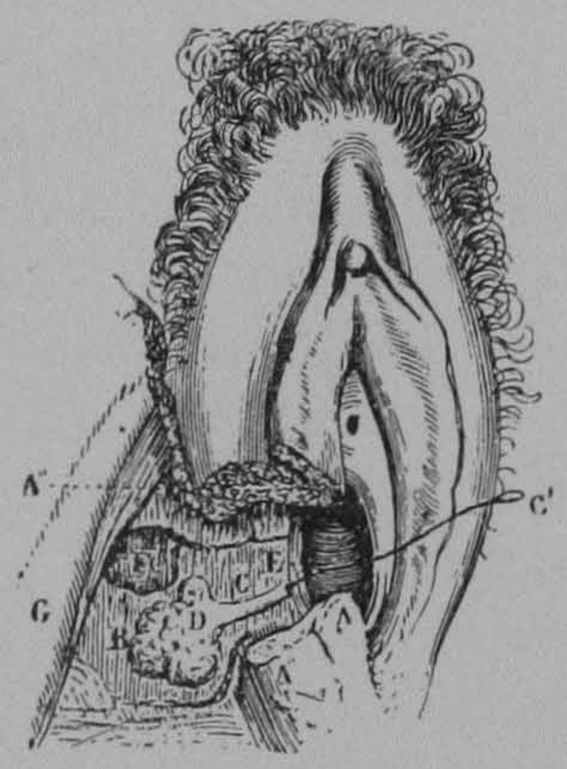
The SYMPTOMS differ but little from those of the other forms of vulvitis described above.

The TREATMENT in mild cases is similar to that of the simple and purulent forms. It is, however, more often necessary to use the nitrate-of-silver and corrosive-sublimate solutions. The emptying of the follicles is necessary to a cure, and may be promoted by alkaline fomentations, pressure by means of dry absorbent-cotton pads, manual pressure, or better by puncturing with a bistoury or a bayonet-pointed uterine scarificator. When thus evacuated nitrate-of-silver solution or tincture of iodine and glycerin, in equal parts, may be applied.

INFLAMMATION AND ABSCESS OF THE VULVO-VAGINAL GLANDS.

Purulent vulvitis or vaginitis is apt to infect the vulvo-vaginal or Bartholini's glands.

FIG. 51.



Normal Vulvo-vaginal Gland. The labium majus and minus, the sphincter vaginæ muscle, and the bulb have been partly removed on the right side in order to expose the gland: *AA*, section of labium majus and minus; *B*, gland; *C*, excretory duct; *C'*, stylet introduced into the duct; *D*, glandular end of duct; *E*, free end of duct; *F*, section of bulb; *G*, ascending ramus of ischium.

The SYMPTOMS are, swelling of the deeper tissues on the inside of the lower part of one or both labia, usually one at a time, with enlargement, and often a distinct globular tumor that may vary in size at different times, as the gland is filled up or has emptied itself. In most cases there is a small area of redness around the mouth of the gland, just in front of the hymen or its remains, halfway up the side. A muco-purulent secretion may exude or be squeezed out. In old cases the only symptom may be an occasional filling up of one of the glands with a corresponding globular tumor, deeply seated in the labium, which persists and gives rise to local pain for a few

days, and then discharges more or less gradually, giving no more trouble for the time. In such cases there is but little, if any, surrounding induration.

The TREATMENT consists in the ordinary treatment for vulvitis, and in hot fomentations to relax the orifice and thus promote the discharge. If the tenderness be not too great, evacuation by gentle pressure may be attempted. Drainage by means of dilatation with a small probe may be adopted in obstinate cases of recurrent accumulation.

Abscess of the gland may result from retention of pus. In this case the lower outer part of the labium becomes indurated, and presents the ordinary characteristics of labial abscess. The pus may be evacuated into the cellular tissue of the labium and a labial abscess coexist.

Excision of the whole gland and surrounding abscesses, and sewing up of the parts by deep sutures will often effect an immediate cure. In case the parts cannot be excised, the secreting surface should be destroyed by a cautery, the surrounding pus-surfaces curetted, and the cavity packed with iodoform gauze and absorbent cotton until healed. The external incision should be a large one.

Labial Abscess has the same etiology and symptomatology as abscess in the subcutaneous connective tissue elsewhere. The labium becomes enlarged with a well-defined indurated mass, extending up and down the labium under the hairy surface. After a few days the phlegmon gradually undergoes softening at some particular place, and an area of redness appears. The affection is very painful and calls for energetic treatment. Cold, in the beginning, is anodyne as well as sedative. Later, sitz-baths, poultices, or fomentations, frequently changed, are to be used. On account of the tendency to spread, an early evacuation, by incision on the inner surface, is indicated. In chronic cases connected with the suppuration of the vulvo-vaginal gland, all of the pus-secreting surfaces and indurated tissue must sometimes be excised or curetted with a sharp curette, to get rid of deep-seated sinuses and pockets that resist ordinary treatment.

EXANTHEMATA OF THE VULVA.

Herpes, Eczema, and Prurigo of the vulva present similar characistics to the same symptoms in other parts of the body.

Herpes is usually a transient affection, and requires only that the

parts be protected from irritation. It consists in a group or groups of vesicles, without any inflammation of the surrounding skin. The inguinal glands are occasionally tender. A saline laxative, a bland ointment, or a soothing lotion, and a mildly carbolated or a borated vaginal douche, if the vaginal discharges be irritating, will usually be followed in a week or ten days by a cure. A powder of oxide of zinc and chalk, equal parts, may be used after the vesicles break.

Sometimes herpes occurs in the confluent form, covering the vulva, and lasting for ten days or two weeks. It is often connected with gastro-intestinal disturbances, and may return periodically. Uncleanliness is a prolific cause.

Eczema is characterized by an eruption of vesicles and some inflammation of the underlying and surrounding skin. When the vesicles rupture a serous fluid exudes which tends to dry on the surface and form scabs. If the disease continues, the skin remains red, becomes thickened, and may in time assume a more or less cicatricial character. These conditions may spread to the neighboring skin. Itching is a prominent symptom. The itching that accompanies diabetes is apt to be due to eczema.

In the acute stage, saline or mercurial laxatives, a restricted diet, with soothing local applications, such as bismuth powder, a lead lotion, cold cream, 1 per cent. carbolic-acid douches, hip-baths, or the benzoated oxide-of-zinc ointment with 5 or 10 per cent. of carbolic acid added, may be used. In obstinate cases strong solutions of carbolic acid (5 per cent.), or nitrate of silver (2 per cent.), may be required to stimulate the circulation of the parts. The scabs and secretions should be washed off with almond or other unirritating soap before the ointments are applied. Saline and mercurial laxatives, digestives, iron, arsenic, etc. may be required as for eczema elsewhere. Dryness and cleanliness of the parts are essential, and friction is to be as nearly excluded as possible.

Bismuth powder in Lanoline.

Creoline ½-2% in water.

Better wash off the scabs with sweet oil.

Prurigo is a[*] papular eruption causing distressing pruritis, and is difficult of cure. The causes are not well understood, although it often occurs in unclean and unhealthy subjects.

Attention to the general health and hygienic surroundings is imperative. The carbolized zinc ointment above referred to, with the addition perhaps of 2 per cent. of menthol, often affords great relief. From a 5 to a 10 per cent. solution of chloroform in oil of sweet almonds relieves the itching in some cases, and may do some-

[*] Papule = elevation of the skin.

thing toward dissolving out the tenacious masses at the bottom of the papillæ. A mixture of ether and alcohol (1 : 4) may be used for this latter purpose, or chloroform and alcohol (1 : 4) if well borne.

Erysipelas and *Diphtheria* of the vulva should be treated upon the same principles as cases occurring in other parts. They are rare affections, and occur in most instances in puerperal women and new-born children.

Gangrene of the Vulva or Noma.

Gangrene of the vulva occurs in poorly-nourished young children living in unhygienic surroundings, and is exceedingly fatal. It begins with reddening and infiltration of one of the labia, accompanied by a discharge of ichorous serum, followed by vesication and the formation of a grayish-green slough and rapid gangrene. The condition has been likened to noma in the mouth. It is a rare disease, produced by infection, and has been known to be infectious.

If recognized early enough, the parts should be excised, and the resulting wound, if not favorable for obliteration by sutures, should be frequently disinfected with strong antiseptics and kept constantly moistened with a weak antiseptic solution. The vital powers should be sustained with alcohol, strychnia, digitalis, and frequent forced feeding.

Pruritus Vulvæ.

Pruritus Vulvæ is usually a symptom rather than a disease, and stands for an intense or persistent itching of the vulva, more often felt about the clitoris and vestibule, but sometimes extending to the surrounding parts. The itching, depending upon palpable or visible local inflammatory disease, is not referred to in the consideration of this affection. It is often a serious trouble, in that it is apt to lead young people into the habit of masturbation, but should not be confounded either with the irritability attendant upon that habit or with nymphomania.

The CAUSES may be reflex or local. Irritating and indigestible foods or drinks may bring on the attacks in some cases by reflex action or by vitiating the urine. The rubbing of clothes, the friction of walking, and heat of the bed act as exciting causes in those predisposed to it. Local congestion, such as occurs about the menstrual period, or in certain cases of pelvic inflammation, or in early pregnancy, or at the end of pregnancy when the vulval and

vaginal veins are distended by pressure above, or in old people with dilated veins, is an occasional cause. Constipation, sedentary habits, portal congestion, œdema, etc., favor it. Irritating discharges though scanty from follicular cervicitis, carcinoma, uterine sarcoma, diabetes, and incontinence of urine, are sometimes responsible. Parasites may also act in the same way. A chronic follicular inflammation that can only be discovered by a careful examination is present in many cases.

The DIAGNOSIS is based upon the intermittent character of the itching, the absence of local inflammatory or eruptive disease, and the discovery of one of the above-mentioned or other remote causes. Oftentimes no cause whatever can be detected. The local symptoms are a shiny, red, somewhat œdematous appearance of the parts about the vestibule, with perhaps some serous secretion. Later, changes may occur as the effect of scratching, such as excoriations, thickening of the nymphæ, dryness, cicatricial spots, and furuncles.

The TREATMENT should of course depend upon the cause, which must, if possible, be removed. When dependent upon diabetes or incontinence, the parts should be protected from contact with the urine by some powder or ointment kept constantly applied, such as bismuth subnitrate, unguentum resinæ, or a benzoated oxide-of-zinc ointment containing 5 or 10 per cent. of carbolic acid. When from irritating vaginal discharges, the applications may be used with antiseptic vaginal douches and vulval washes, such as 1 : 2000 aqueous solution of mercuric bichloride or 2 per cent. carbolic acid. Skene highly recommends a 1 : 500 solution of the bichloride in emulsion of bitter almonds. When due to venous congestion, astringents act beneficially, such as lead, in washes and in vaginal douches, a 1 or 2 per cent. solution of nitrate of silver in water, or the oxide-of-zinc powder, strong or diluted with an equal quantity of chalk. General debility, gastro-intestinal derangements, uncleanliness, and the like should be attended to faithfully. To relieve the itching many remedies have been used. The benzoated oxide-of-zinc ointment, with the addition of 10 per cent. carbolic acid or 5 per cent. of menthol, is useful. A 10 per cent. emulsion of chloroform in olive oil or a 5 per cent. aqueous solution of cocaine gives temporary relief. Cold-water applications stop the itching when other remedies fail. The treatment is of necessity often empirical. Many patients suffer continuously for years without obtaining relief. Under the most favorable cir-

Ice-bag!

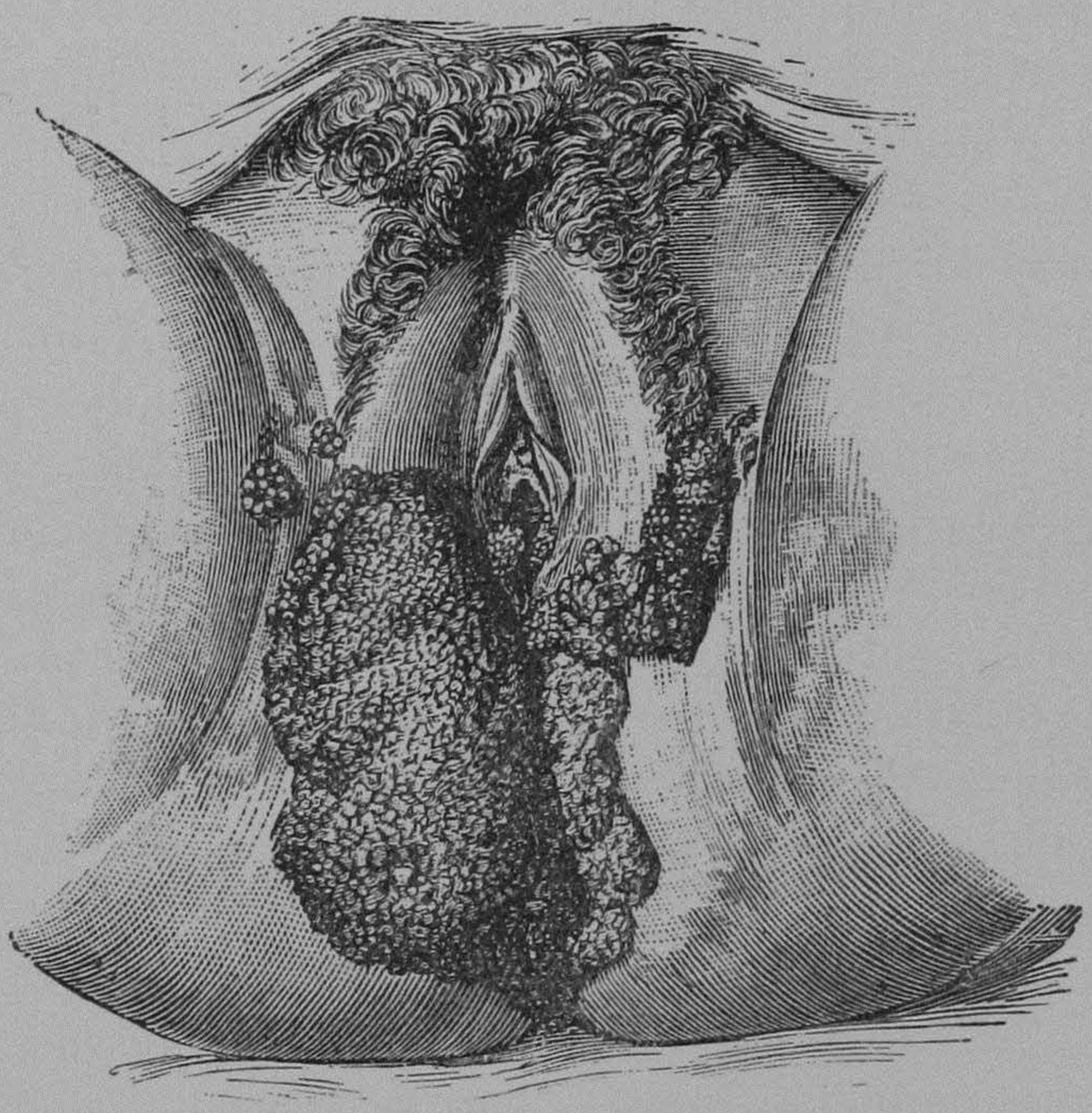
circumstances a cure is difficult and is only obtained by persistent attention to the details of treatment. Cleanliness, dryness, and a minimum amount of friction add materially to the desired result.

Specific Diseases of the Vulva.

Gonorrheal Vulvitis is an inflammation of the vulva caused by the specific germ of gonorrhea, and may be considered as a part of specific or gonorrheal vaginitis.

Syphilitic Affections of the Vulva occur in the form of chancres, mucus-patches, and syphilitic skin eruptions. The chancre has a dark-red surface, is sharply defined, is not excavated, is not tender or itchy, is single, with a hard base, and presents firm resistance

Fig. 52.



Simple Vegetations of the Vulva.

to the fingers grasping it from the sides. Inguinal glands are ordinarily enlarged without much tenderness.

The ulcerations or eruptions following vulvitis are itchy, tender, somewhat excavated, and have not a firm base, except in connection with surrounding infiltration. Mucus-patches, gummata, and the skin eruptions exist in connection with other manifestations of syphilis, and have the same characteristics as those occurring elsewhere. The inguinal glands may be tender, but do not become

greatly enlarged. A chancre may ulcerate at its centre, but preserves its characteristics at the edges.

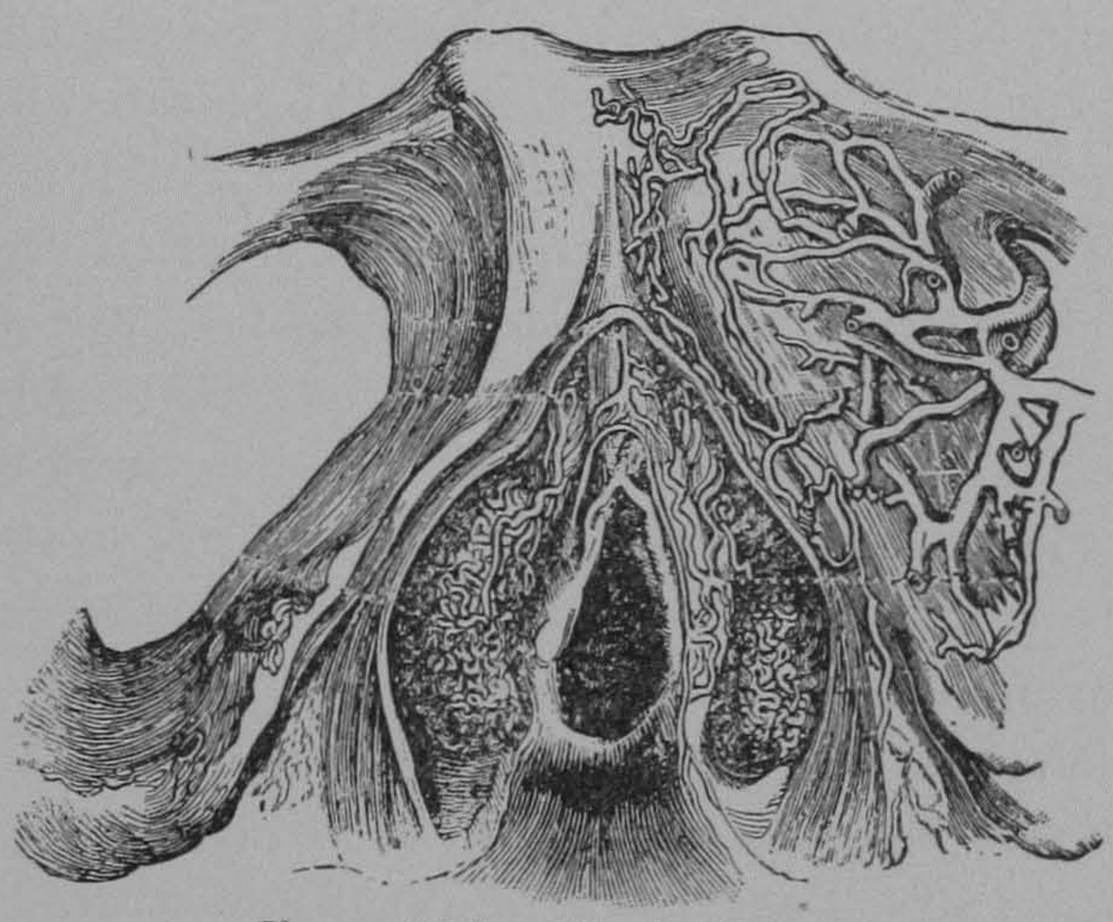
The *Chancroid* is multiple, has sharply-defined edges, suppurates freely, has a soft yellowish or greenish fissured base, and is usually accompanied by a large, tender inguinal gland, with tendency to suppuration. The sharp edges and yellowish or greenish base distinguish it from other ulcerations or eruptions. It should be treated by cauterization, iodoform, and frequent antiseptic lotions.

Venereal Warts are the result of venereal or unclean genital discharges. They consist in irregular masses of papillomata about the anus or vulva. Vaginal douches of 1 : 2000 bichloride of mercury, frequent washings with the same, the constant application of the oxide-of-zinc ointment with 10 per cent. carbolic acid, or of resin cerate, will occasionally result in a cure. Cauterization with nitro-muriatic acid is usually effective. When much elevated above the surface of the skin (condylomata), they should be cut off and the base cauterized.

Injuries of the Vulva.

Injuries to the external genitals in women and children from blows, falls from elevated places upon the end of stakes, pitchforks, backs of chairs, fences, etc. sometimes prove serious from the hemorrhage that is liable to follow injury of the corpora cavernosa.

Fig. 53.



Plexus of Veins of the Vestibule.

The first marital embraces, and even brutal kicks by intoxicated husbands, have produced extensive contusions and lacerations.

Contusions should be treated as those occurring elsewhere in the cutaneous tissue. Lacerations should be sutured with deep stitches, so as to close up all deep veins, and thus prevent extravasations of blood and subsequent abscess.

Hematoma of the Vulva.

Hematoma of the vulva occurs in the puerperal state as the result of the pressure of the head during labor, or in the non-puerperal state, from blows or fine punctures, producing a lesion of a vein in the corpus cavernosus. It is usually unilateral.

When found after labor it may be as large as the fist or larger, but is seldom half as large under other circumstances. It is felt as an elastic globular tumor in the labium, without much heat or tenderness, and unaffected by coughing or increased intra-abdominal pressure made by the patient. Often the first sign is a feeling of discomfort in the part, and the accidental discovery by the patient of the enlargement. In other cases a sudden burning pain is felt, followed by a feeling of tension and a desire to urinate or defecate.

The hematoma is either gradually absorbed, remains for a long time encysted, or undergoes the suppurative process.

An hematoma larger than a walnut, detected as soon as, or before the bleeding has stopped, is best treated by an incision between the labium majus and minus, a clearing out and disinfection of the cavity, and suturing so as to include the vessels and close the wound completely. A small effusion may be treated by the application of an ice-bag in the hope of preventing an increase. After the hematoma has formed and shows no sign of growing larger, it may be let alone with the expectation that it will be absorbed. When it has become encysted the patient may choose between having the cyst excised or waiting for a tedious length of time for slow absorption. To incise, evacuate, and pack the cyst with gauze, usually means a slowly-contracting cavity or an abscess; hence it is always well to enucleate or dissect out the cyst-wall and close the wound completely with deep sutures. After suppuration has commenced the abscess should be opened without delay, and, if possible, the abscess-wall excised and the wound sutured with antiseptic precautions. When the facilities for such treatment are wanting, incision, disinfection, and packing with gauze is the next best procedure.

Varicose Veins of the Vulva may be caused by pressure upon the pelvic veins by the pregnant uterus, intra-pelvic tumors or accumulations, or, in those predisposed to it, particularly in hot climates, by constipation, straining at stool, or occupations requiring constant standing with the exertion of intra-abdominal pressure.

During pregnancy they may form a swelling as large as the fist, and may rupture during labor, causing a large hematoma.

In the non-puerperal state they cause a slight swelling of one or of both labia, or can be seen on their inner surfaces, often extending into the pelvis.

They either give rise to no trouble or produce a feeling of burning, an itching or fulness, with perhaps a slight desire to urinate.

Astringent washes, vulval pads under a T-bandage, rest in the recumbent position for a few hours each day, and the avoidance of standing, leaning over and lifting, are helpful. The bowels should be well regulated, and the general nutrition and vigor of the patient promoted by tonics, massage, moderate exercise, fatty foods, etc.

When a varicose vein ruptures compression will usually control the hemorrhage temporarily, but, as it is pretty sure to return after the pressure is removed, the ligature should be resorted to.

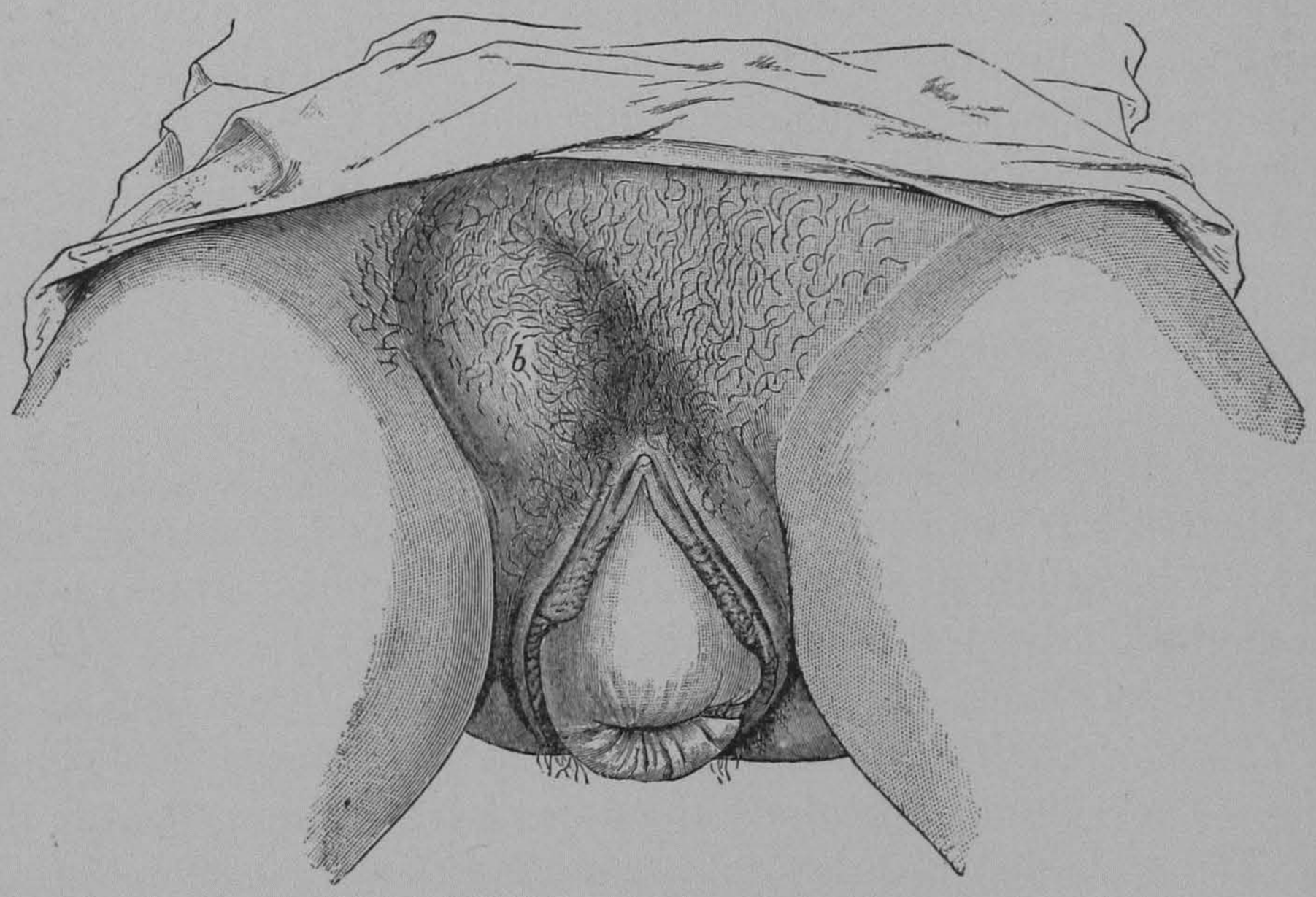
Hydrocele of the Labium Majus.

Hydrocele in the female is a rare affection, and usually consists in a prolongation of the peritoneal pouch (canal of Nuck) along the round ligament, through the inguinal canal, to the mons Veneris and into the tissues of the labium majus. Usually the sac closes by adhesion of the peritoneal surfaces at the internal abdominal ring. The labium, particularly the upper part, is enlarged, as in the case of hernia, but with less fulness at the external abdominal ring. If the communication with the abdominal cavity be not obliterated, the swelling disappears when pressed, and may be felt to vary in size with increase or decrease of abdominal pressure (coughing, etc.). Usually, however, the tumor is elastic, translucent, and yields clear serum upon aspiration. It is *not* tender to moderate pressure. When the tumor is reducible a truss may be worn. When not reducible it may be aspirated. If it fills again, it should be evacuated, and obliterated by an injection of tincture of iodine. If this does not cure it, the entire sac should be dissected out and the parts sutured with silkworm gut.

Pudendal Hernia.

Pudendal Hernia (hernia labialis inguinalis) corresponds to scrotal hernia in the male. The canal of Nuck and the inguinal canal become dilated, and the intestine and peritoneum are forced along the round ligament to the external ring and into the labium majus. A rounded tumor is felt in the upper part of the labium, prolonged into the inguinal ring, soft, insensitive to pressure, compressible, sometimes resonant upon percussion, and usually disappearing entirely, with a gurgling sound, if the patient be placed in the knee-chest position. It is very seldom strangulated. The omentum, and, very rarely, the ovary may be found in the sac.

Fig. 54.



Hernia Labialis Inguinalis and Uterine Prolapse.

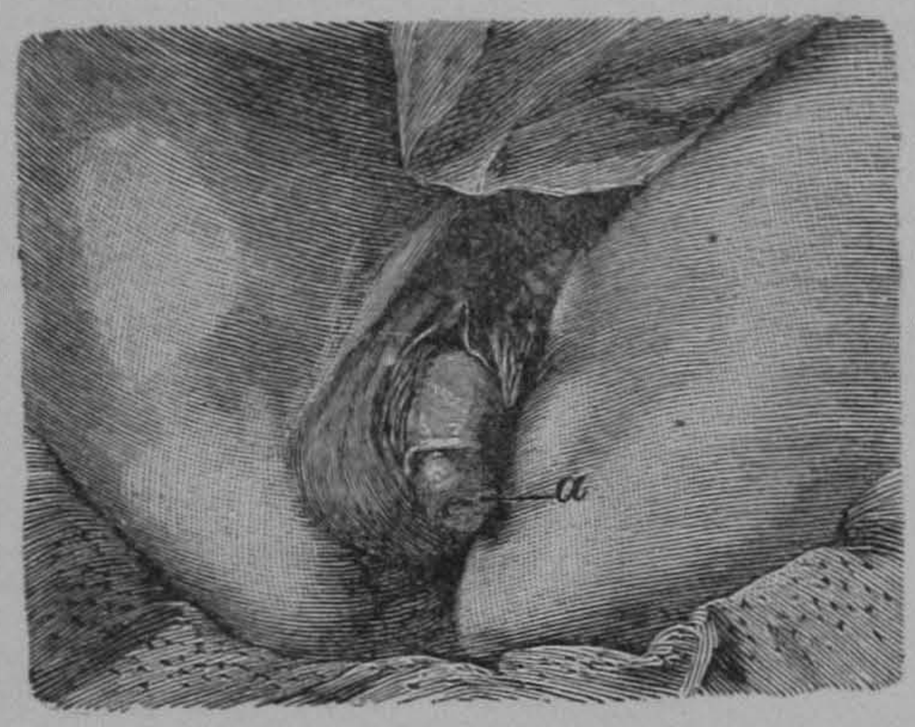
It is differentiated from a distended vulvo-vaginal gland, in that the latter is well down in the labium, is tense, tender, irreducible, and cannot be traced upward. Vulval abscesses are tender and surrounded by indurated tissue.

The TREATMENT consists in a replacement and the adjustment of a truss with a perineal strap to pass over the labium. A description of the operations for strangulated hernia and permanent closure of the inguinal canal belongs to works on general surgery.

Posterior Pudendal Hernia (hernia vaginalis labialis) has been observed a few times. It appears in the posterior portion of the

labium majus, and consists in a defect in the pelvic fascia anterior to the broad ligament, with descent of the contents of the abdominal fascia along the vagina into the labial tissues.

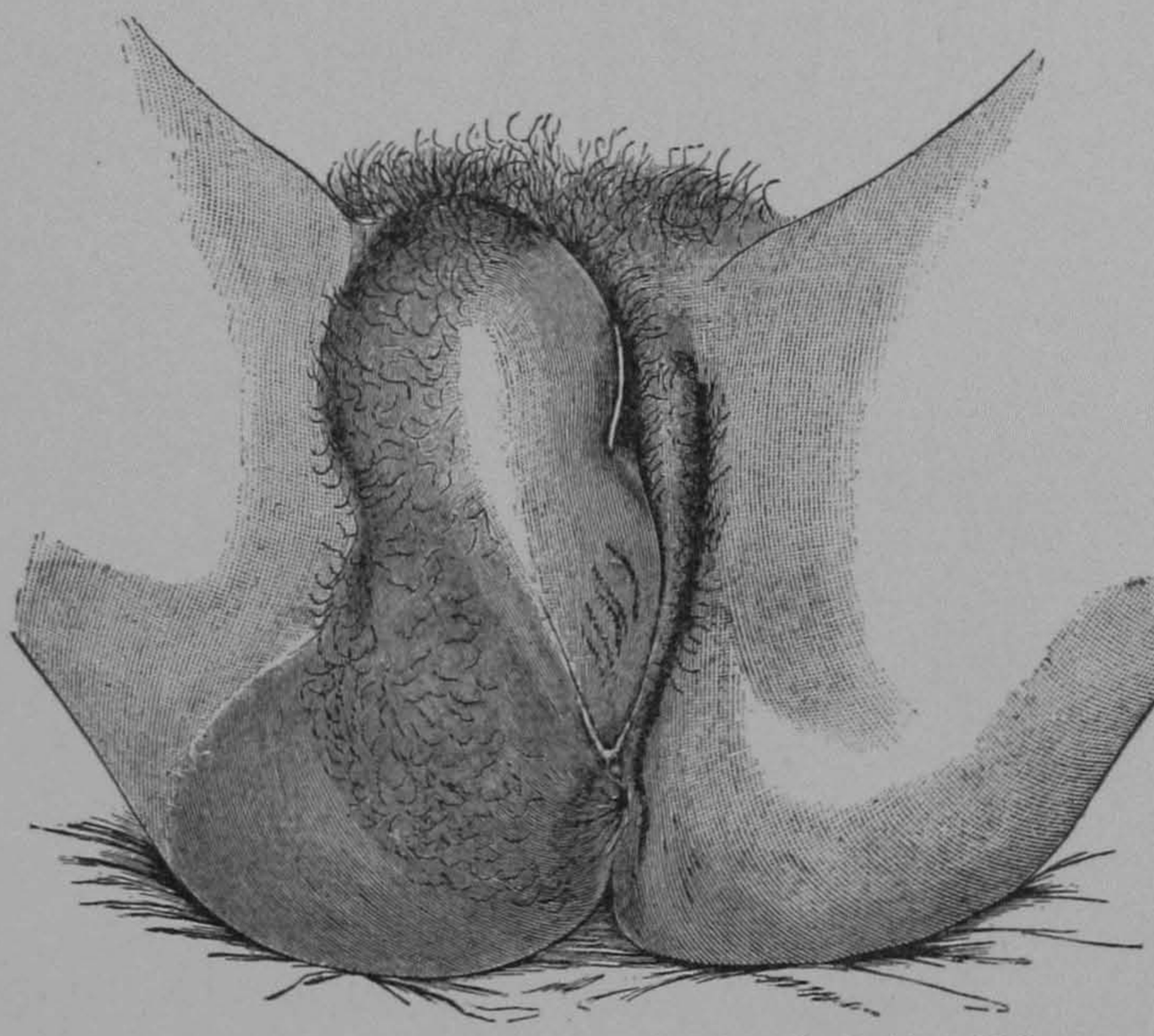
FIG. 55.



Hernia Vaginalis Labialis.

The DIAGNOSIS is made in the same way as for the ordinary pudendal hernia, excepting that the contents extend under the

FIG. 56.



Hernia Vaginalis Labialis, extending into the Labium Major.

pubic ramus. Stoltz was able to feel the defect in the fascia and levator ani through which the protrusion occurred. According to

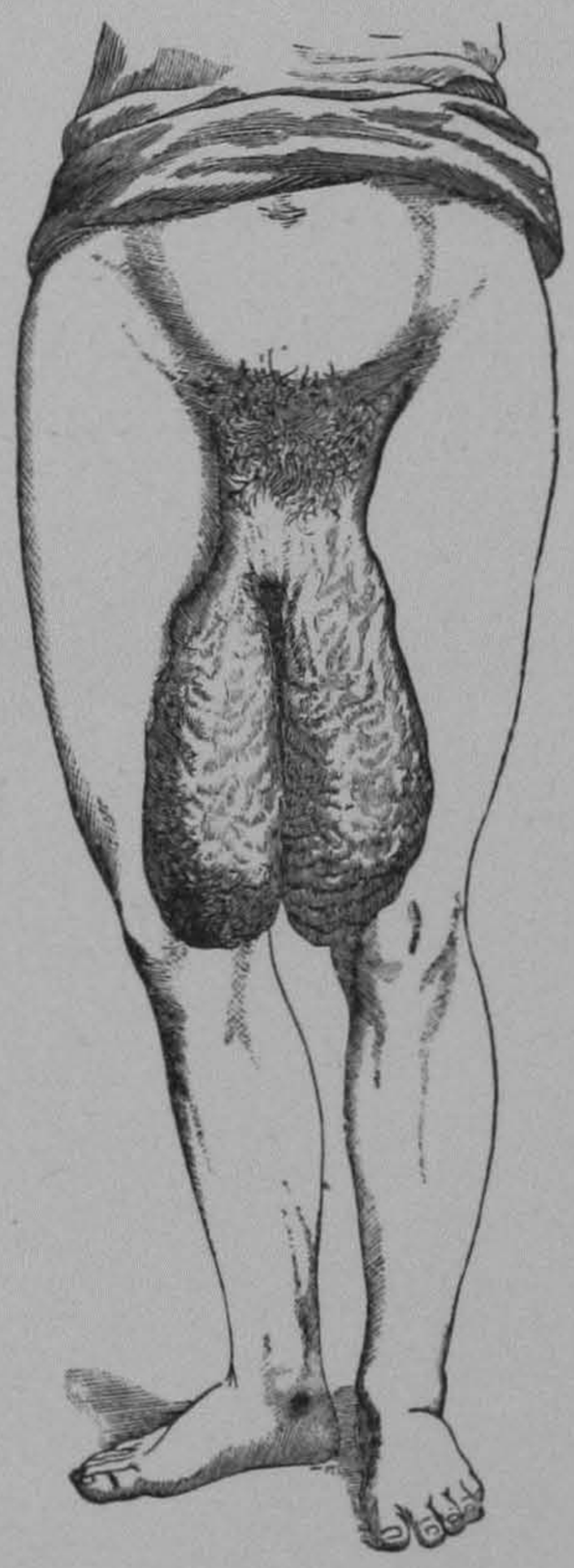
experience, pessaries and operations are useless. A belt with a pad attached to a stem may be adjusted.

Tumors of the Vulva.

Elephantiasis.—Elephantiasis occasionally affects the external genitals of the female, and exhibits the same characteristics as that occurring in the skin elsewhere. It usually affects the entire vulva, and in tropical countries has been known to form a large tumor hanging between the thighs.

The DIAGNOSIS is made by the fact that the swelling affects the skin itself and cannot be separated from it, as in fibroma, lipoma, and

Fig. 57.



Elephantiasis of the Labia.

cystoma. Venereal warts are implanted upon soft natural skin, while the papillary excrescences of elephantiasis grow upon thickened, indurated skin.

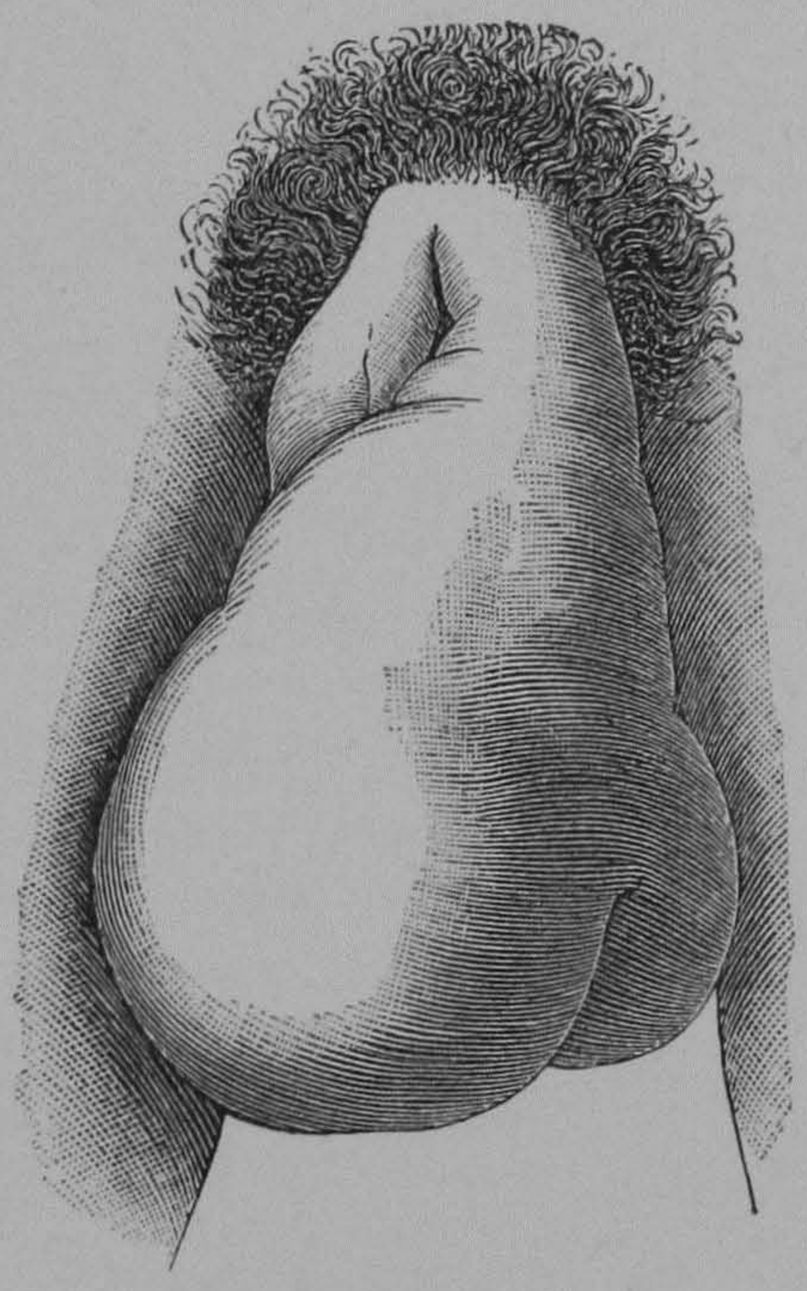
Malignant tumors are accompanied by deep-seated induration, and more ulceration in proportion to the enlargement; they run a

malignant course, while elephantiasis never kills. Lupus has more discoloration, deeper-seated induration, and ulcerates more extensively.

The TREATMENT consists in removal of the mass and suturing the wound.

Fibroids of the Vulva occur most frequently in the labia majora, but have been observed in the labia minora and perineum. They are hard, well defined, insensitive, and movable under the skin, unless developed in the cutaneous connective tissue, when they project and even become pendulous. They may undergo cystic degeneration. Sometimes they become quite large and the skin over them ulcerates. They should be removed by the knife as soon as discovered.

FIG. 58.

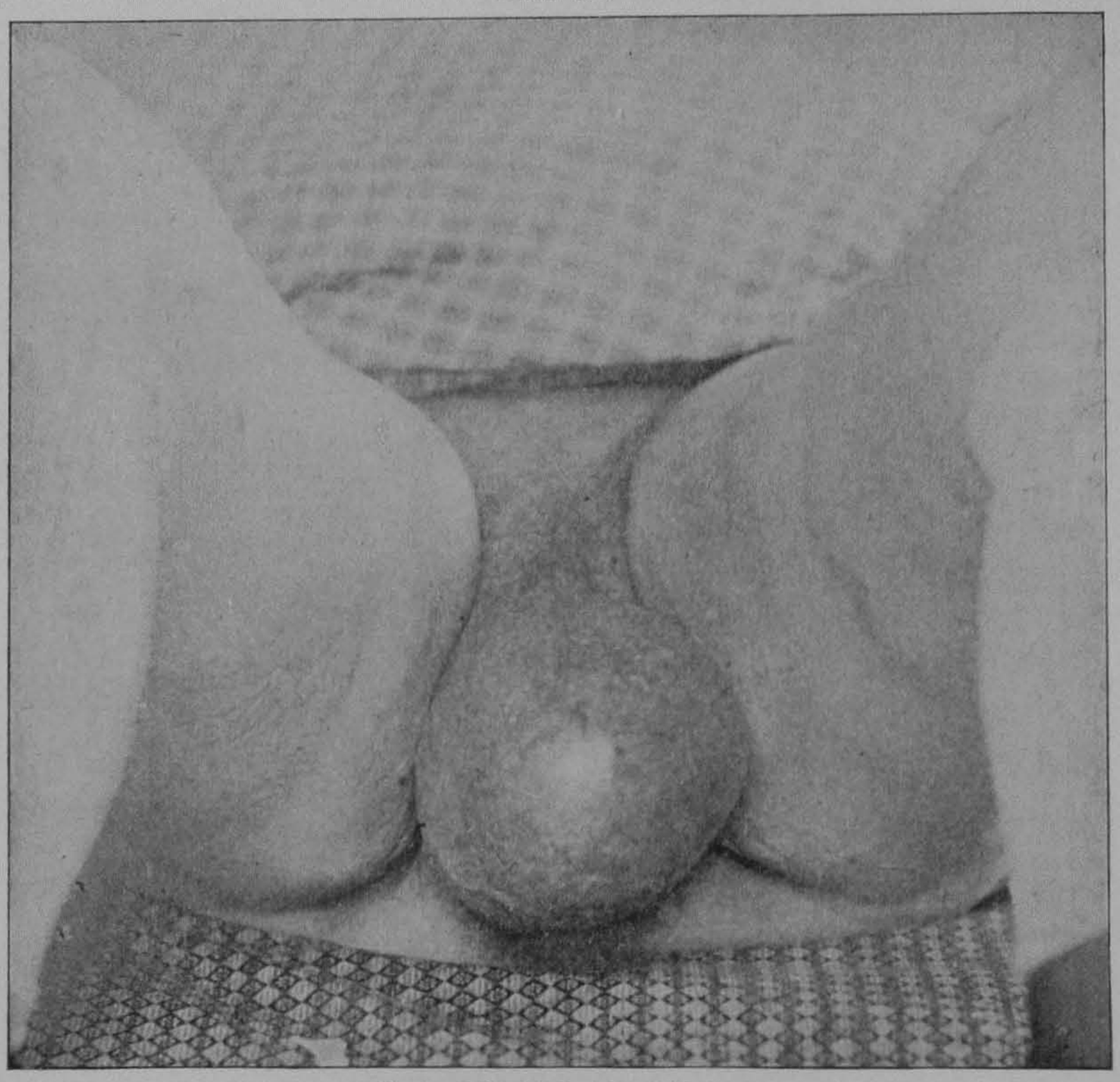


Fibroid of the Left Labium Majus.

Vulval Cysts are usually distended glands found in the labia majora, and may be single or multiple, deep-seated or superficial, varying from the size of a pea to that of a walnut or an egg, and occasionally larger. They are easily recognized as elastic bodies that yield a serous fluid upon aspiration. Usually they enlarge in a downward direction.

The best TREATMENT consists in the removal of the entire sac by dissecting it from its connective-tissue surroundings, and closure of the wound by deep sutures.

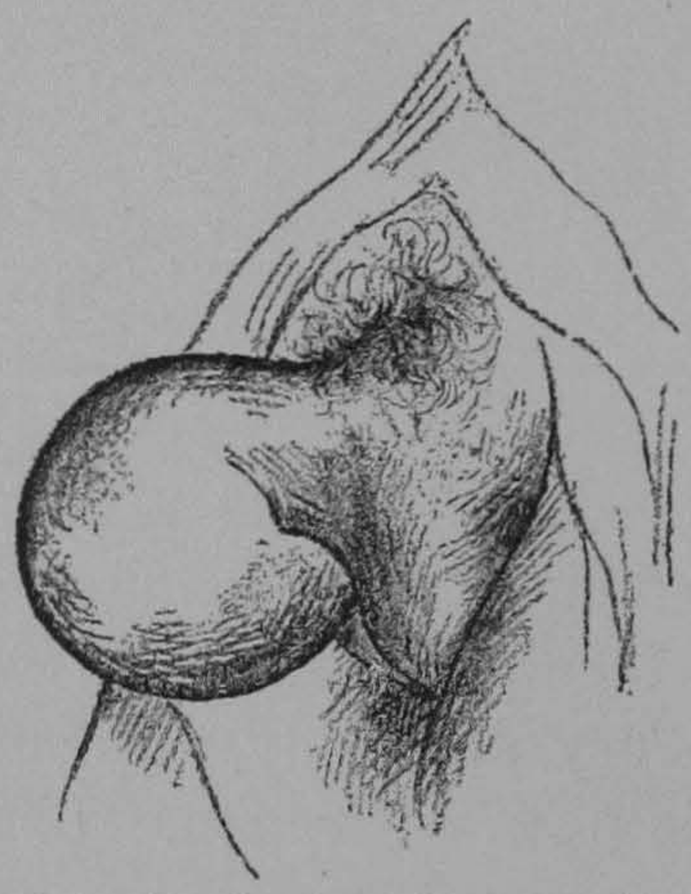
FIG. 59.



Cyst of Right Labium Majus.

Cystic tumors of the clitoris have been met with a few times. They usually contain a bloody fluid. Sometimes they gradually

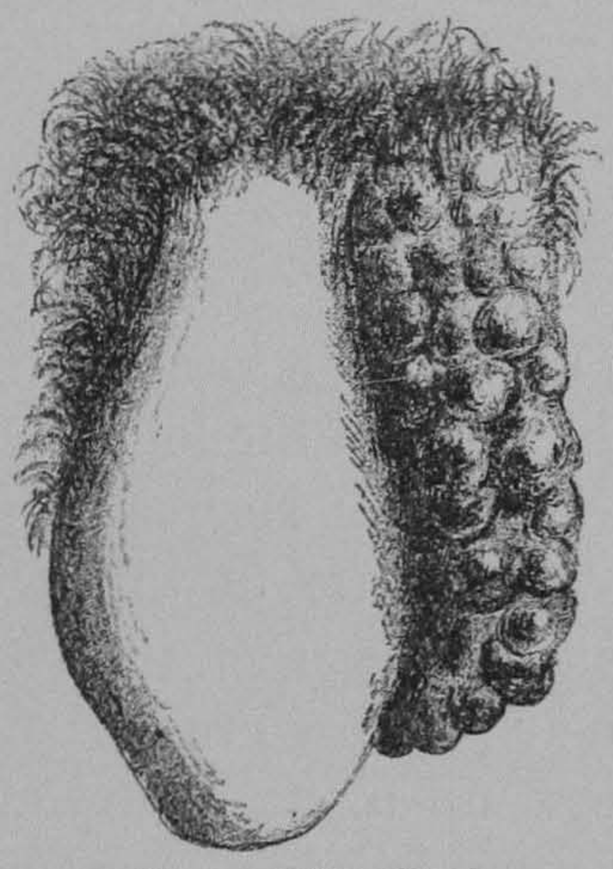
FIG. 60.



Cystic Tumor of the Clitoris, containing twenty-two ounces of fluid.

shrivel up, after having their contents evacuated, and at other times they require amputation. Sometimes they attain a moderate size, and then stop growing, and the patient may prefer to have nothing done.

FIG. 61.

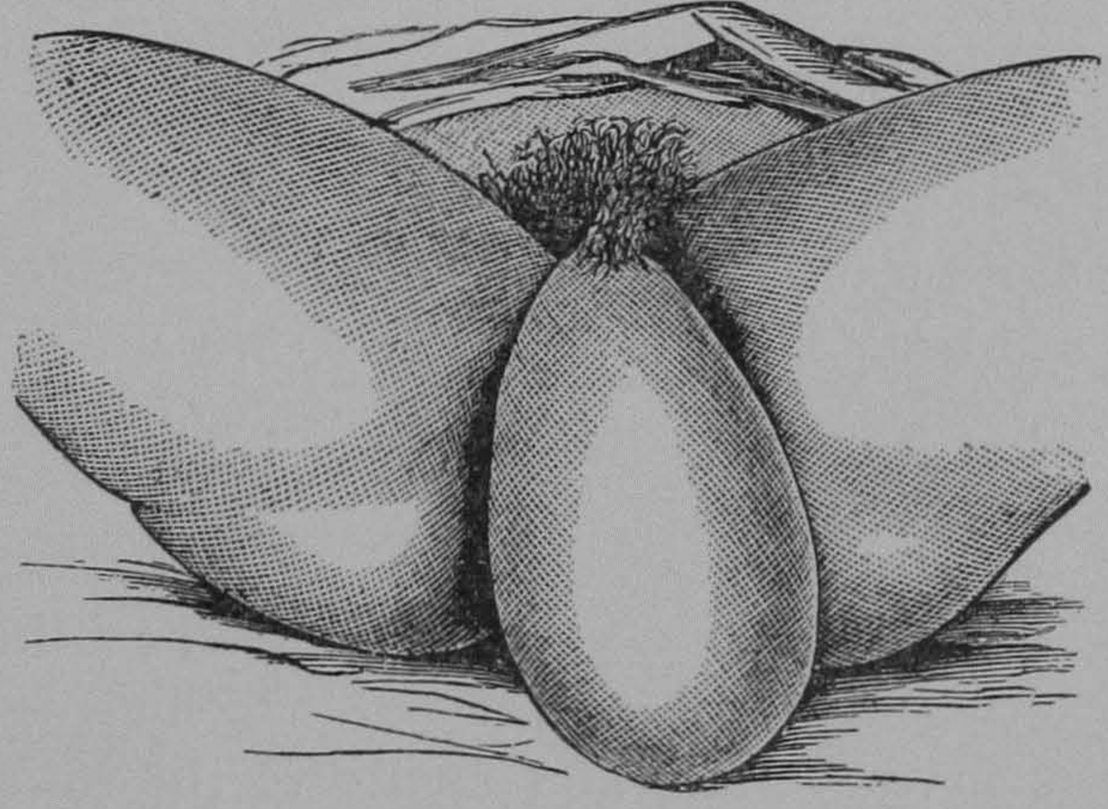


Tumor of the Clitoris.

LIPOMA OF THE VULVA.

Fatty tumors may occur in the vulval, as well as in other fatty tissue. Usually they are somewhat soft, and when a large size is attained, give a sense of fluctuation to the percussing finger. They are a little softer than fibroids, but the skin is somewhat hypertrophied, and is apt to be contracted in spots, corresponding to depressions between the lobules of the tumor. They may resemble elephantiasis, but fluctuate more distinctly.

FIG. 62.



Adipose Tumor of the Left Labium.

The TREATMENT consists in removal by the knife.

Occasional cases of Neuroma, Enchondroma, Melanoma, and Angioma of the Vulva have been observed, but their occurrence is so rare that a description is here superfluous. They should be removed the same as if found elsewhere in the body.

COCCYGODYNIA.

Coccygodynia is the name given to pain in the coccyx, induced by motion of the part, whether from external pressure or contraction of the muscles attached to it.

The disease consists usually of a local arthritis. Not infrequently there is a rigidity or ankylosis of the joints, with dislocation or fracture, forming an artificial joint. Necrosis sometimes results.

Parturition in old primiparæ in whom the articulations have become rigid, and falls or blows upon the coccyx, are the ordinary causes. Rheumatism may possibly produce it. The principal symptom is pain in the coccyx upon sitting down, getting up or changing position. Any posture in which the coccyx is pressed up, or which calls into play its attached muscles, is intolerable. Sexual intercourse and straining at stool are apt to be painful. The disease is diagnosed by taking the coccyx between the finger, introduced into the rectum, and the thumb placed between the nates, and moving the bone, thus bringing on the pain.

Under certain circumstances the PROGNOSIS is favorable, although several months, or even years may elapse before all sensitiveness will subside.

The TREATMENT must be conducted upon the same principles as in a traumatic arthritis elsewhere. First, the avoidance of all motion of the joints or pressure upon the bone. Rest on the side, air-cushions to sit upon, with great care in sitting down, getting up, leaning over, or twisting the trunk, so as to avoid producing the pain, are items of prime importance. Leeching and cold applications in the acute stage, counter-irritation and alterative applications in the subacute and chronic stages, are beneficial.

In neglected cases, subcutaneous tenotomy or extirpation must occasionally be resorted to.

Tenotomy is performed by introducing a tenotome under the skin at the end of the coccyx, pushing it along the side of the bone, and severing the entire muscular attachment, first on one side and then on the other, and finally at the lower end. The

relief afforded is great, but often only temporary, on account of the reunion of the severed parts.

Extirpation is accomplished by a longitudinal incision down to the bone, amputation through the second joint, and severance of the attachments; or the attachments may be severed first, the coccyx dislocated backward, and the entire bone removed.

Vulvo-vaginal Hyperesthesia and Vaginismus.

Vulvo-vaginal Hyperesthesia consists in an extreme sensitiveness of a part, or of all parts, of the vulvo-vaginal entrance, except the labia majora.

In some cases there is a congested appearance of the parts, or even inflammation and erosion; in others there is nothing abnormal to be seen. The pathological conditions sometimes consist in inflammation of the inner genital organs, with or without irritating discharges, or in a disordered state of nutrition and enervation. Inflammation about the hymen or cicatricial contractions about the carunculæ cause the most severe forms.

The most noticeable symptom is sudden flinching or a manifestation of pain upon the least touch of the parts, although if the finger can be placed quietly on the hymen or in the vagina and left there, the complaints soon cease until some motion is made, when they begin again. Coitus may be excessively painful or not tolerated at all. Anything that alarms the patient, or even calls her attention to the condition, increases the difficulty.

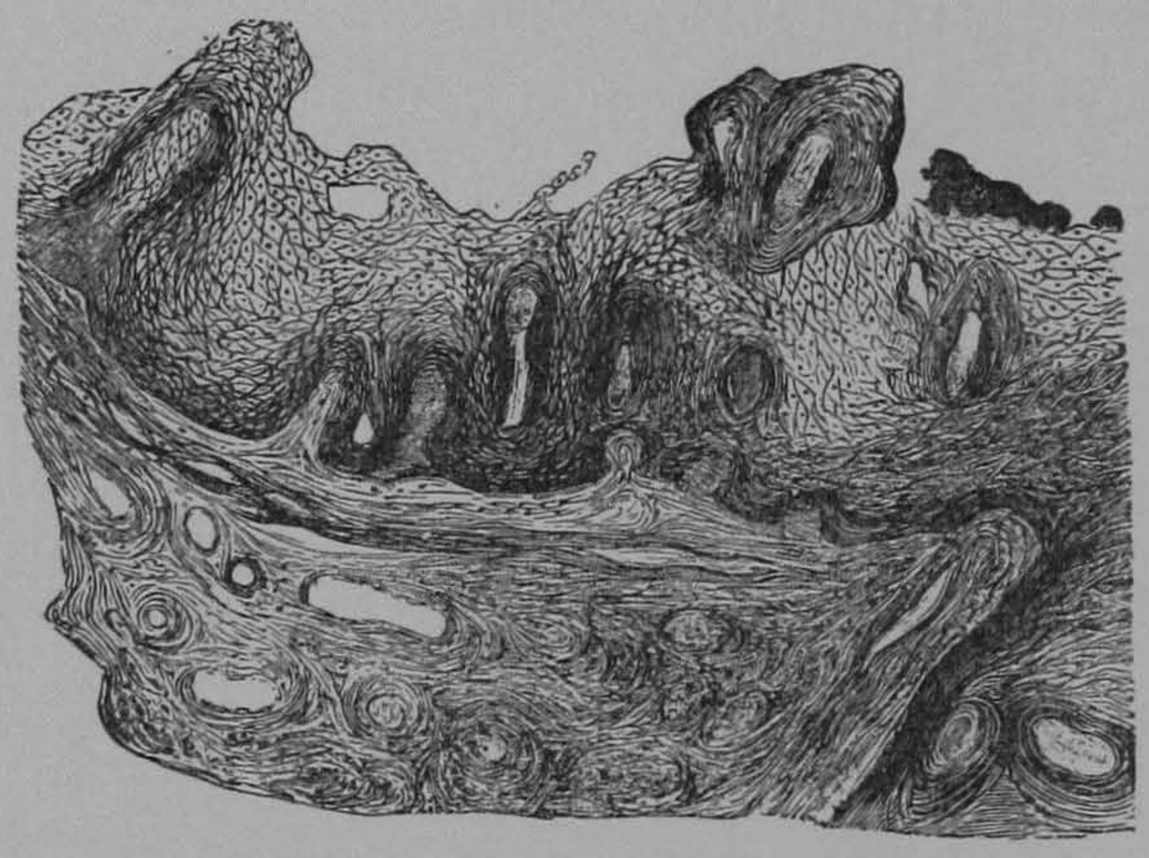
The TREATMENT consists in removing all inflammatory conditions, if such exist, by the means recommended elsewhere. Soothing or anesthetic washes or ointments, such as a 5 or 10 per cent. solution of cocaine, or half that strength of menthol in cerate, or oxide-of-zinc ointment, may be used previous to all manipulations and at other times when discomfort is felt. Sometimes a 5 per cent. solution of nitrate of silver or strong carbolic acid applied once a week is useful to cure erosions or ulcerations.

A valuable means of diminishing, and sometimes of curing the trouble in mild cases consists in introducing a bivalve speculum two or three times weekly, and slowly, almost insensibly, stretching the vagina and vaginal entrance until decided discomfort, but not severe pain, is felt, and then in placing a pledget of wool in the upper part of the vagina and leaving it for twenty-four or thirty-six hours. The pledget should be small at first, but gradually increased in size until

the vagina is well tamponed. It is preferable to place a small cotton pledget saturated in a 50 per cent. solution of boro-glyceride against the cervix, and the dry wool below it, but not low enough to press at the vaginal entrance. An uncomfortably tight vaginal packing or rough or painful treatment or manipulation in the beginning might antagonize the patient and make her worse. Mildly stimulating and antiseptic vaginal douches, such as 2 per cent. carbolic acid or 1 : 200 to 1 : 500 solutions of permagnate of potassium, often help to render the vulvo-vaginal nerves tolerant. A general tonic treatment is of great benefit in many cases.

Vaginismus is a vulvo-vaginal hyperesthesia of an aggravated character, with peculiar painful spasmodic contractions of the perineal and levator ani muscles. The causes of both affections are similar, but small spots of erosion about the vaginal entrance or a diseased condition of the hymen or its remains are more frequently found in vaginismus. Frequently no cause whatsoever can be discovered.

FIG. 63.



Fibro-papillary Hypertrophy of the Hymen in a case of Vaginismus.

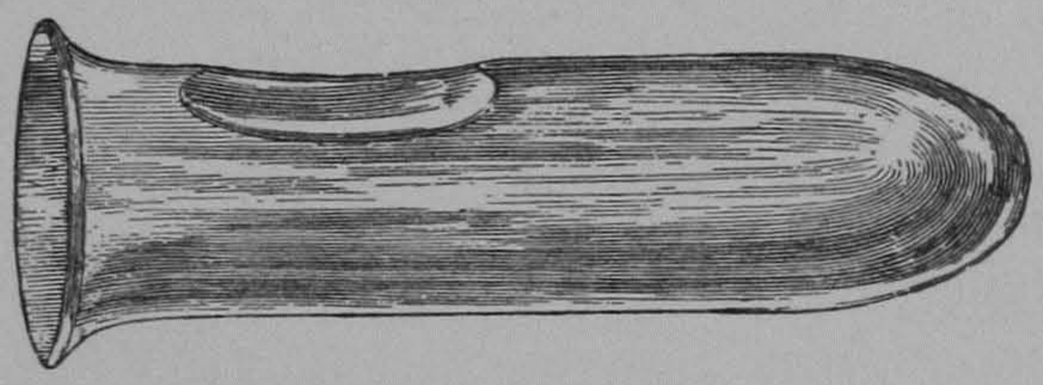
Coitus is seldom tolerated, and the attempt causes a firm closure of the vagina by the contraction of the constrictores cunni et vaginæ. A vaginal examination is often impossible until the patient is anesthetized, when the orifice becomes relaxed.

In mild cases the TREATMENT given above for vulvo-vaginal hyperesthesia may be tried, especially the vaginal packing. Sometimes a thorough stretching under anesthetics, with the subsequent daily introduction of a glass plug dilator, will effect a cure. The stretching can be accomplished by introducing a large bivalve speculum, separating its blades widely, and withdrawing it quite rapidly.

The glass plug, which has the shape of a widened test-tube, about 2½ inches in diameter, should be worn four or five hours a day for a few days, then two or three hours a day for several weeks.

In a few cases it may become necessary to practise J. Marion Sims's plan of excising the hymen and cutting deeply into the constrictor cunni and edge of the levator ani on either side, so as to completely relax the vaginal entrance.

FIG. 64.



Vaginal Plug.

The plug should then be worn almost constantly for a few days, then two or three hours daily for ten days or two weeks. Intercourse should not be allowed until the wounds have been for some time entirely healed.

KRAUROSIS.

Kraurosis represents the last stage of vulvitis. Small red spots and streaks appear on the labia minora, in which dilated capillaries can be seen. These spread in curves, and often disappear in the places first observed. Later the mucous membrane becomes pale, and shrinks progressively until in time the nymphæ disappear and the vulva is almost closed.

At first there is round-celled infiltration and dilation of the capillaries, and hypertrophy of the epithelial covering, which is followed by a thinning of the rete mucosum, a shrinking of the papillæ, and disappearance of the sebaceous and sudoriferous glands.

The SYMPTOMS are not always characteristic until the disease is well advanced. Pruritus, local pain, and a tendency to crack and bleed upon coitus or slight traumatism are the most noticeable. The surface is usually dry, although a slight yellowish discharge may be present in the beginning. The progress is slow, but steady.

The only satisfactory TREATMENT is excision of the parts. Applications of strong carbolic acid have been used with temporary benefit.

The disease has been considered as essentially the same as trachoma of the eye. Good results are reported from the use of a spray of peroxide of hydrogen to cleanse the parts, followed by the

application of an ointment containing from 1 to 3 per cent. of the yellow oxide of mercury twice weekly by means of a speculum, the patient to apply the ointment twice daily externally.

Imperforate Hymen.

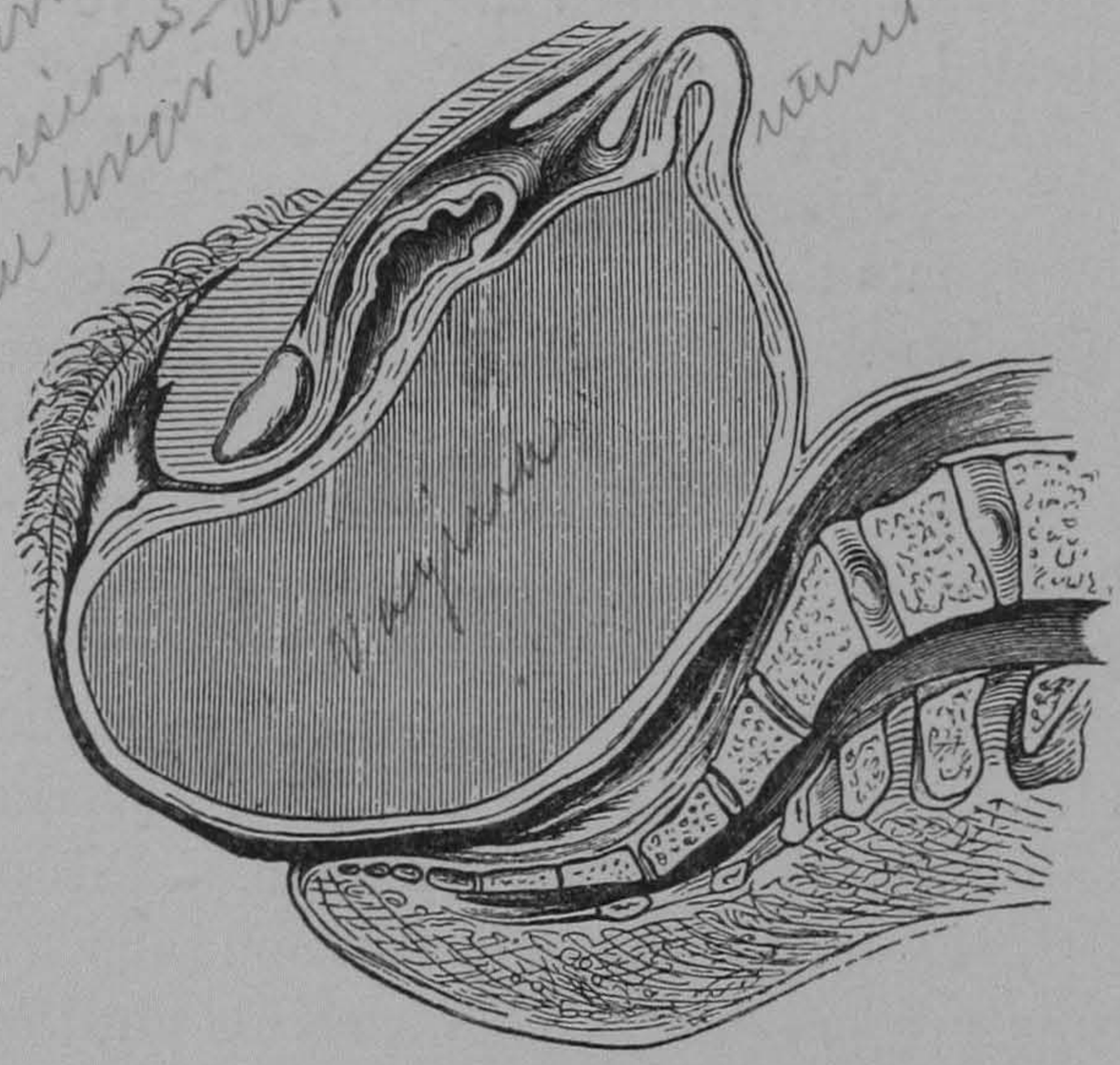
As the symptoms of imperforate hymen are the same as in many cases of atresia of the vagina, it will be appropriate to consider both of the affections under the latter heading.

Atresia of the Vagina.

Atresia of the vagina may be congenital or acquired, and may involve any part or all of the vagina from the hymen to the cervix.

Causes.—The congenital variety arises from inflammation that has existed before birth, causing adhesion of the mucous surfaces of the hymen or vagina. After birth it may be caused by septic or gangrenous vulvitis, or inflammation connected with diphtheria,

Fig. 65.

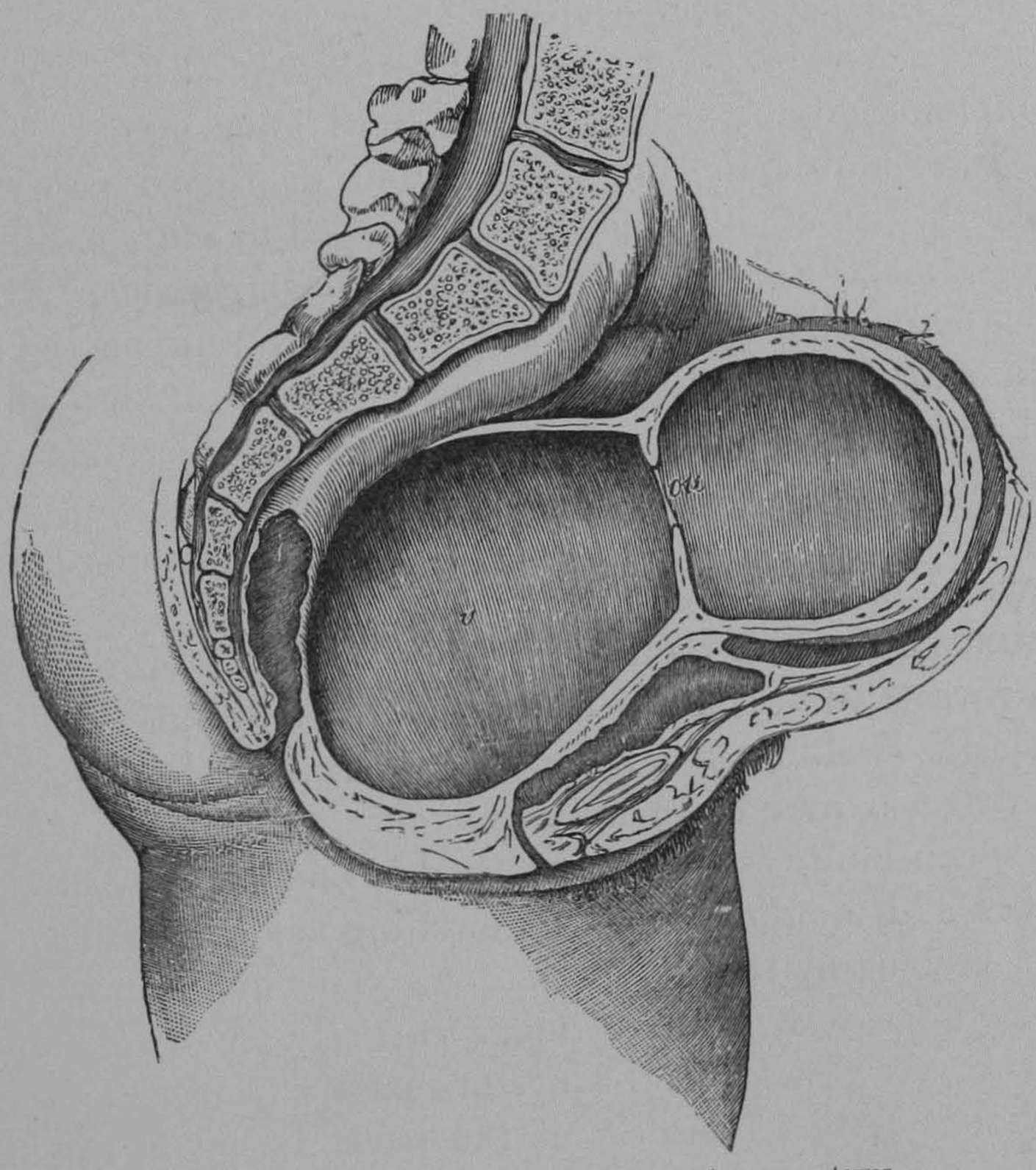


Atresia of the Hymen.

typhoid fever, scarlatina, or measles, or by destruction of the vaginal epithelium or walls, following the introduction of chemical or mechanical agents. In such cases either adhesion of the walls or cicatricial contraction in the ulcerated or sloughing parts occurs. Sloughing after labor, resulting in circumscribed or complete loss of the vaginal walls, is accountable for quite a large proportion of cases. Non-puerperal traumatisms also enter as a causative factor.

VARIETIES.—The places of obstruction may be low down, consisting either of an imperforate or impervious hymen, or of the occlusion of the lower end of the vagina. The obstruction may be in the middle or upper portion or in different portions of the viscus, or it may involve the whole canal. Another variety consists in a double vagina and uterus, one side of which ends in a blind sac above the hymen. In many cases the condition is one of stenosis instead of complete obstruction.

FIG. 66.



Complete Occlusion of the Vagina: *v*, vagina; *ou*, uterus.

Complete or extensive congenital obstruction of the vagina is generally found in connection with deficient development of the uterus and ovaries.

COURSE.—Obstruction at or near the hymen may be accompanied by a retention of mucus in early life, and of the menstrual fluid in later life, particularly if the development of the uterus and ovaries has not been interfered with. The vagina becomes dilated and hypertrophied, and sometimes also the cervix, uterus, and Fallo-

pian tubes. These latter are more often dilated when the atresia involves the upper portion of the vagina, and in such cases pelvic peritonitis often ensues with adhesions, and occasionally rupture of the tubes.

When there is occlusion of the lower end of one side of a double vagina and uterus, the occluded side is most liable to burst into the other side, particularly through the cervical septum. The tissues then become infected, and develop into a pyokolpos or pyometra. The dilated Fallopian tube has also been observed to burst into the peritoneal cavity.

Symptoms.—The deformity may be discovered in early life, but the symptoms do not usually appear until after puberty. Amenorrhea is, as a rule, the first. Recurrent menstrual pains are felt each month, but attention may not be called to the condition until the patient marries and finds copulation to be impossible. After considerable accumulation has taken place, pressure upon the bladder or rectum may cause pain in these organs and interfere with their normal action. Later, the symptoms of pelvic peritonitis, pelvic hematocele, or septicemia may be added, in connection with the development of hematosalpinx, and rupture of the uterus or tube, or of pyometra and pyosalpinx.

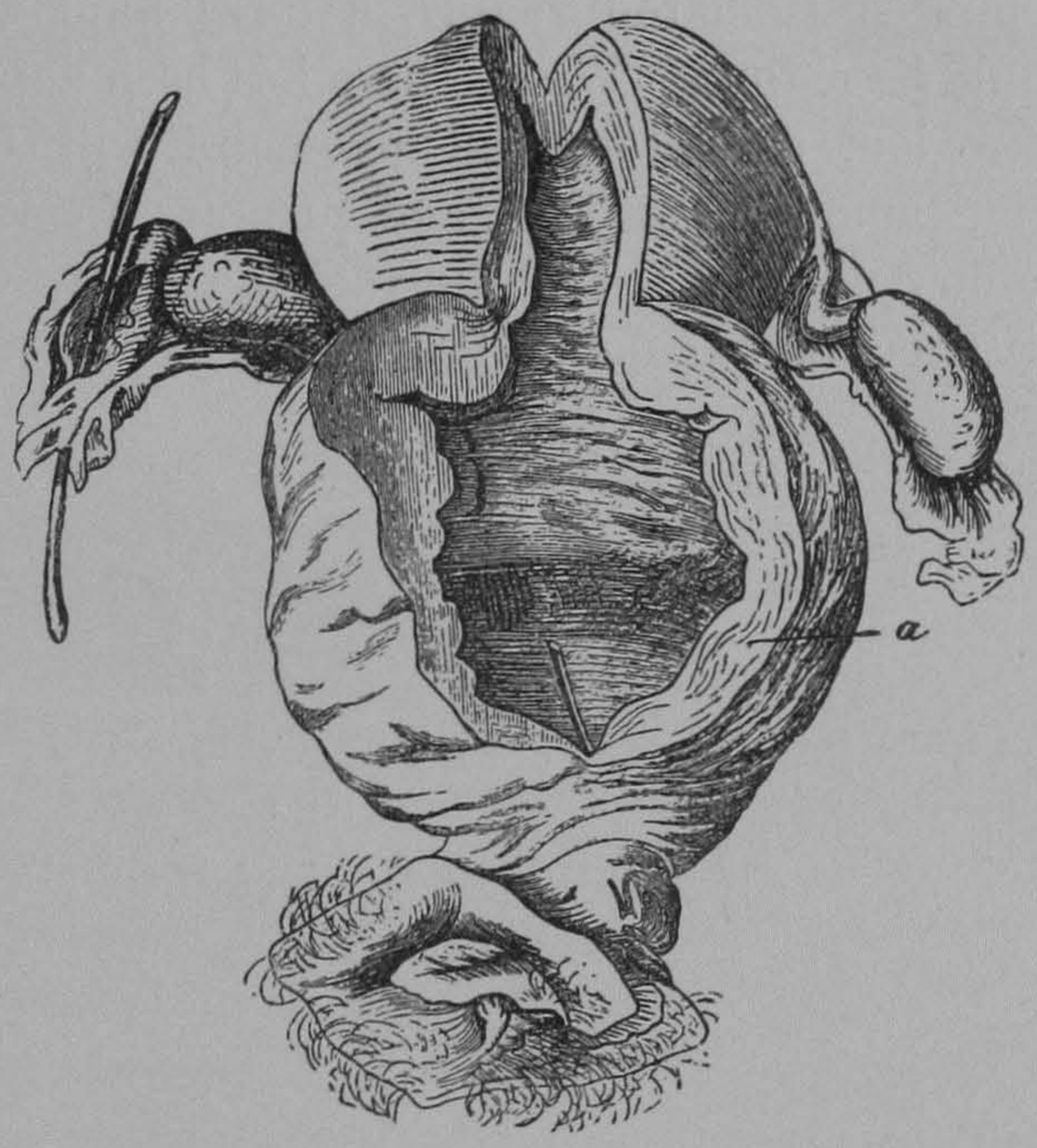
Diagnosis in Case of Imperforate Hymen.—Physical examination reveals an absence of the vaginal entrance and the presence of an elastic swelling under the pubic arch, which sooner or later can be detected over the pubes. Obscure fluctuation or a feeling of elastic continuity is then recognized if one hand be placed over the pubes and another upon the swelling below, whether from its vulval aspect or by rectal indigitation. The finger in the rectum recognizes an elastic globular tumor partially or completely filling the pelvis. A catheter in the urethra passes in front of the mass. There is but little tenderness of the parts except at the time of the menstrual pains.

Stenosis, or incomplete obstruction, is known by the fact that an occasional escape of the menstrual fluid occurs. A careful examination, particularly under an anesthetic, will usually lead to the discovery of a small opening. The opening is sometimes found just under the urethra, pointing upward, and is most easily located by means of a fine bent probe.

Congenital atresia is nearly always discovered at or near puberty, if not earlier. The acquired forms often show some irregular con-

tractions or cicatrices due to past inflammation. Cicatrices are made more noticable by hooking a finger in the anus and putting the perineum on the stretch.

FIG. 67.



Hypertrophied Vaginal Walls above an Atresia of the Vagina.

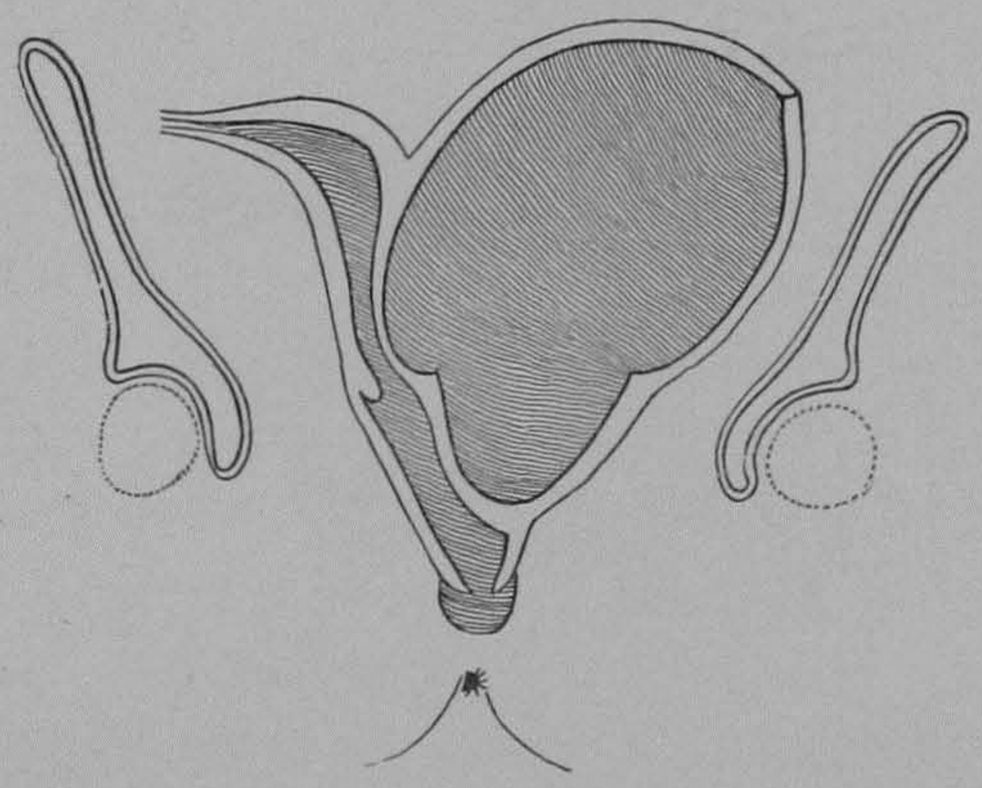
Occlusion of the lower end of the vagina gives rise to the suprapubic tumor, but is not accompanied by the elastic vulval swelling. The finger in the rectum and the sound in the bladder enable us to feel just how far down toward the vulva the retention tumor reaches. When the whole vagina is occluded the bimanual rectal examination discovers the enlargement to be uterine and the vagina to be collapsed or in the form of a fibrous cord. When the occlusion is in the upper part of the vagina, its upper end is discovered by the same bimanual examination, and the lower end by the finger, or sound in the vagina introduced while the finger is still in the rectum.

On account of the uterine enlargement it is difficult to recognize the dilated tubes, although an anesthetic will sometimes enable us to do so.

Occlusion of one side of a double vagina is not accompanied by amenorrhea. The other symptoms, as well as the signs obtained by rectal and abdominal examination, are much the same as in

cases of single vagina. The finger in the vagina, however, discovers a rounded tumor projecting into it from one side, and so flattening the cervix as to render the os somewhat crescentic in shape, with the concavity toward the affected side. If the tumor be aspirated from the vagina, a tarry fluid will be withdrawn, proving its nature. When there has been a perforation in the cervical region, pyokolpos and pyometra will usually have resulted. The tumor is less firm, and pressure upon it generally causes pus to flow into and out of the vagina. There will be septic symptoms, with occasional discharges of pus *per vaginam*, giving

FIG. 68.



Septate Uterus and Double Vagina, with Retention of Menstrual Fluid on the Left Side.

temporary relief. If rupture of the septum does not occur, the mass may finally project through the vulva and give the appearance of a prolapse of the vagina or a cyst of the vaginal wall.

PROGNOSIS.—Without interference the prognosis is, as a rule, bad. Dilatation of the uterus and Fallopian tubes, with pelvic peritonitis and adhesions, and occasionally rupture of the Fallopian tubes, pelvic hematocele, and even death, follow. Distortion of the organs concerned, with permanent destruction of their functions, is the rule when interference is delayed. Bursting externally, excepting in the cases of double vagina, seldom occurs, and even then only after irremediable damage is done to the organs of procreation.

TREATMENT.—The only rational treatment consists in evacuation of the fluid, and this should be done as early as possible after its discovery. The danger connected with the operation is threefold—viz. (1) danger of intraperitoneal rupture of a dilated and adherent Fallopian tube, as the vagina contracts; (2) of sepsis due to infec-

tion of the contents through the opening made; and (3) of injury of the bladder and rectum during the operation.

In cases of occlusion at or near the hymen, in which the accumulation is only recent, the second danger—viz. sepsis—is the only one to be feared. When the accumulation is of long standing and forms a large suprapubic tumor, the first danger—viz. rupture of a Fallopian tube—is to be guarded against. The best way is to make a small opening into the mass and allow the contents to flow away gradually, taking from one to two or three hours; then to enlarge the opening by a crucial incision and wash out the sac with a great quantity of sterilized saline solution (½ of 1 per cent.), and pack the vagina loosely with iodoform gauze. In no instance should a long time elapse between opening and cleaning out, for fear of serious or fatal septicemia. Aseptic and antiseptic precautions must be observed throughout.

The gauze should be removed in twenty-four hours, and the cavity thoroughly washed out with a mild antiseptic solution, such as a 1 per cent. carbolic-acid solution, twice daily. The tendency to contraction of the opening may be combated by having the patient wear a glass plug part of the time.

When the atresia is higher up in the vagina, all three of the dangers above mentioned are to be guarded against. It is necessary to dissect with the scalpel and finger, using the latter as much as possible between the bladder and rectum toward the tumor. A finger should be kept in the rectum as much of the time as possible for a guide, and the bladder held out of the way by a catheter or sound. As soon as the tumor is felt through the new opening, a trocar should be pushed into it, and the contents allowed to ooze out very slowly, the opening being then enlarged by small cuts with a probe-pointed bistoury and moderate stretching with the finger.

Puncture through the rectum or bladder may be resorted to when it is impossible to operate safely by way of the vagina, but these are makeshift methods attended with danger from sepsis, and should be resorted to only in case of absolute necessity. They are, however, preferable to a let-alone policy.

Retention in one side of a double vagina should be treated on the same principles as the varieties already mentioned. The evacuation should be provided for through the vaginal septum. Excision of a portion or all of the septum is the surest way of effecting a complete cure.

Vaginitis.

The vaginal membrane partakes more of the character of skin than of mucous membrane. On account of its protected situation the horny layer is not well developed, except in some cases in which the membrane protrudes continuously through the vulva. At the upper end, however, it partakes a little more of the character of mucous membrane, in that it here contains a few muciparous glands. This dermoid character enables it, in its normal state, to resist infection by the various pathogenic bacteria that enter it.

Etiology.—Any influence, however, which injures the vaginal epithelium, such as the long-continued friction of foreign bodies or chemically irritating secretions or injecta, diminishes or annihilates this resisting power. If accompanied by a lack of drainage and consequent accumulation of secretions, the microbes multiply, infection follows, and vaginitis finally results.

Irritation, instead of exciting inflammation, merely leads to an increase in the density of the epithelium, with increased resisting power, as is the case with cutaneous irritation. Even a local loss of epithelium is not accompanied by an extension of the inflammation, provided the secretions find a ready outlet or are kept washed out.

Disordered states of the general system, such as anemia, chlorosis, indigestion, constipation, and conditions which tend to produce unhealthy conditions of the skin, predispose to vaginitis. Pregnancy, abdominal tumors, and any condition that produces pelvic congestion, whether venous or arterial, may also be considered as predisposing causes, and are to be taken into account in the treatment. Pregnancy acts both by producing venous congestion and œdema and by increasing the activity of the secretions. Secretions retained by a tight hymen may become infected and overcome the resistance of the pavement epithelium. Pin-worms, masturbation, and other causes of uncleanliness may have a similar effect. Pathogenic secretions from the uterus, urethra, vulva, or introduced from without are frequent causes. Gonorrheal pus is undoubtedly the most common cause in adults. That the vagina of the adult may become infected it is necessary that the epithelium have suffered injury or that stagnant secretions remain in contact a long time. In children and old people infection takes place more easily. Inflammatory action and infection may also be spread by contiguity of surface from the cervix or vulva.

The exanthemata are held accountable for a small share of the cases.

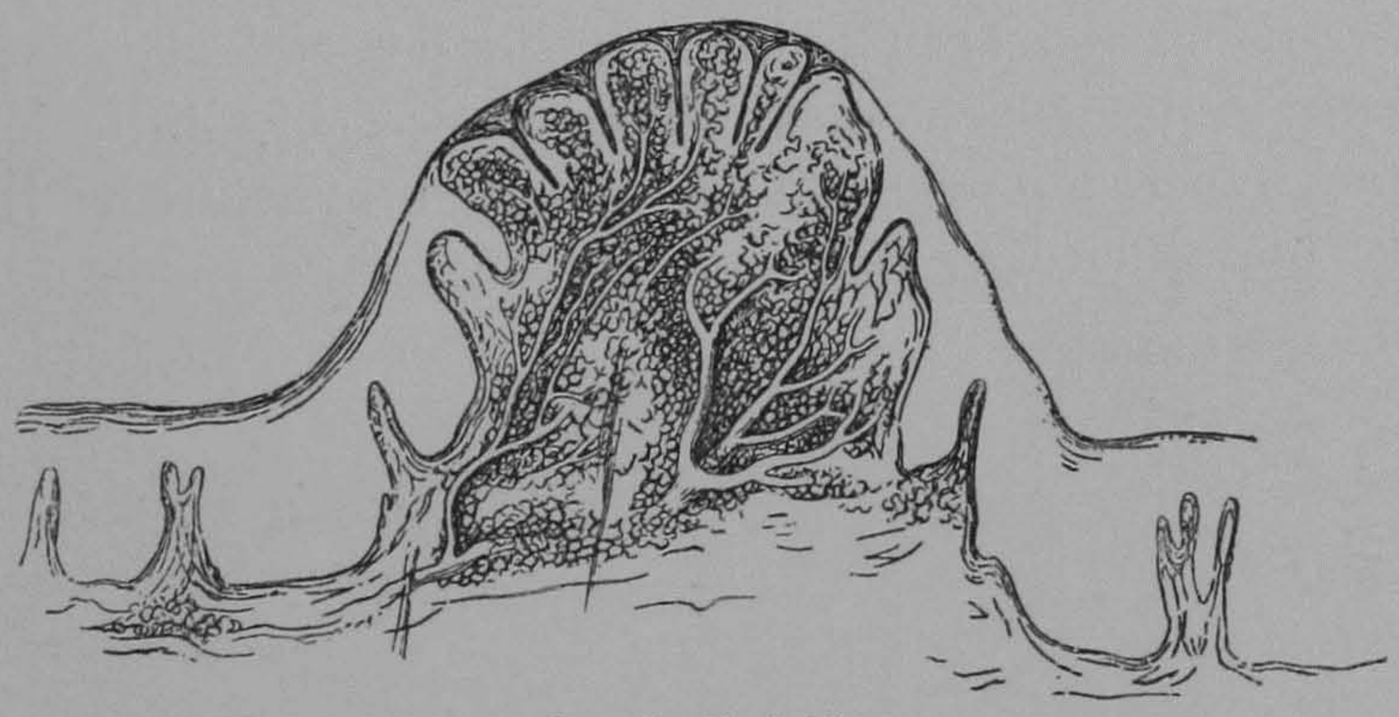
VARIETIES.—Vaginitis may conveniently be considered under the following heads: 1 Simple, 2 Gonorrheal, 3 Granular, 4 Adhesive, 5 Emphysematous, 6 Vesicular, and 7 Cystic.

FIG. 69.

Simple Vaginitis.

PATHOLOGY.—*Simple* and *Gonorrheal Vaginitis* in the *acute* form present the following changes: hyperemia, with redness, dryness, and swelling of the papillæ; serous secretion, rapidly becoming purulent; small-celled infiltration of the epithelial structure; and some shedding of epithelial cells. If the disease lasts for some time, the deeper layers may become infiltrated, with loss of epithelium in places. In the beginning the changes may be confined to isolated spots. When caused by chemical irritants, such as

FIG. 70.



Granular Vaginitis.

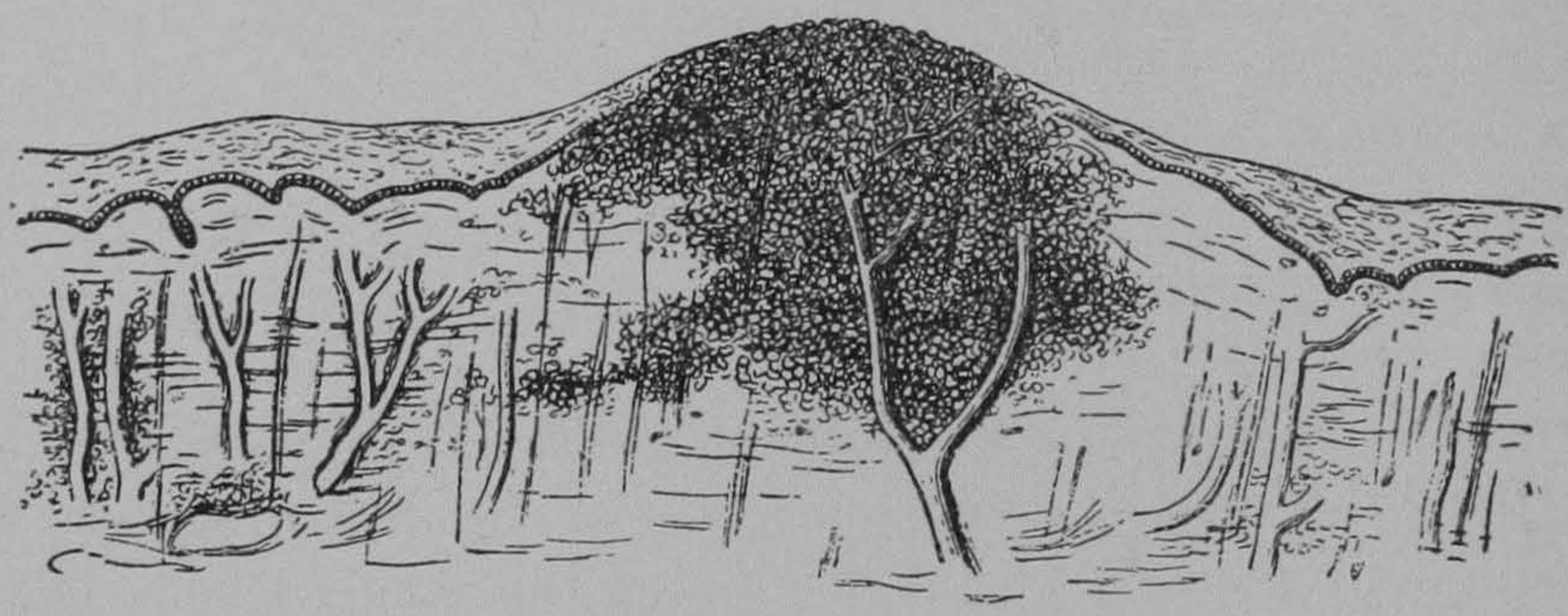
strong solutions of iodine, a sort of vesication may occur, with exfoliation of large layers of epithelial tissue looking like false membrane. As the vaginal epithelium has the power of resisting the invasion of the gonococcus, gonorrheal vaginitis is a comparatively rare affection in adults.

In the severer cases, and particularly acute attacks engrafted

upon chronic inflammation, in the hyperemia dependent upon pregnancy, or other disturbing influences, the papillæ undergo the same changes, but to a greater degree. The epithelium is exfoliated, and the enlarged papillæ resemble a mass of granulations, giving rise to the name *Granular Vaginitis.*

In children and in old people, in whom the papillæ are smaller and the epithelial layer thinner, the inflammation is usually found more in patches, the secretion scanty, the surface smoother, and often ecchymotic in spots. The epithelium is shed in places and the surfaces may be glued together. We then have *Adhesive Vaginitis.*

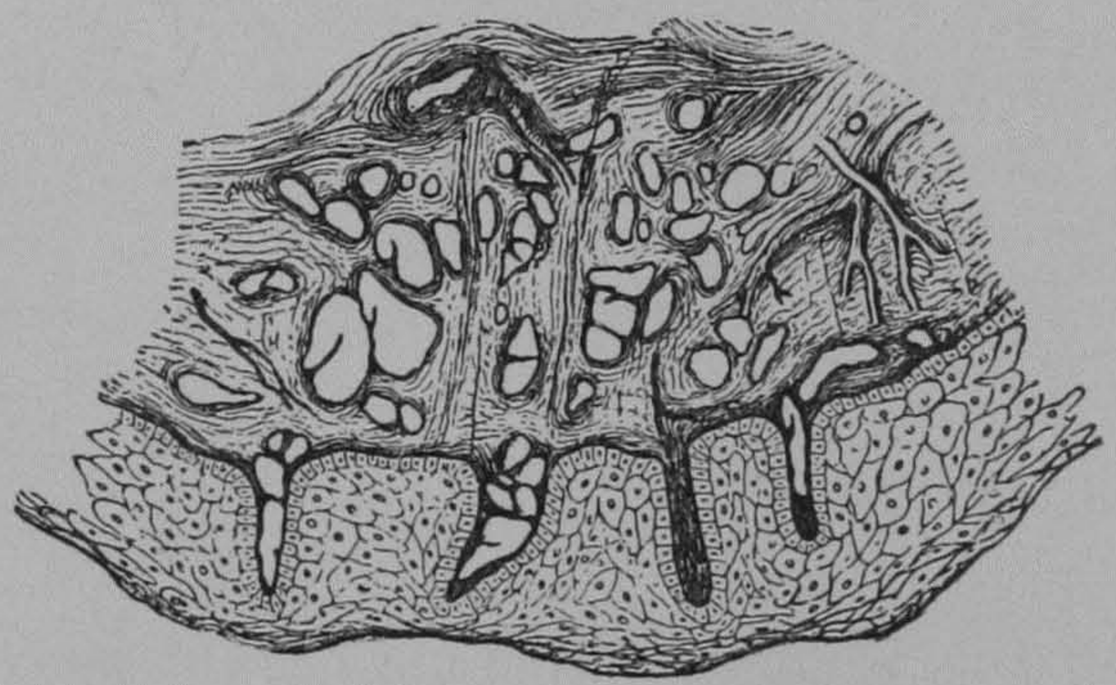
FIG. 71.



Adhesive Vaginitis.

Emphysematous Vaginitis is an inflammation of the vagina attended with development of gas in small spaces and canals of the connective tissue and lymphatics at the upper end of the vagina, and usually in pregnant women. They project like little bladders on a raised hyperemic base, and collapse when punctured. Desquamation or ulceration may result.

FIG. 72.



Emphysematous Vaginitis.

In *Vesicular Vaginitis* round vesicles form over the inflamed areas, and after bursting leave sharply-defined raw surfaces about the size of a split pea.

Follicular Vaginitis, consisting in enlarged inflamed follicles about the vaginal fornices, where the membranes may be supposed to possess more the character of a mucous membrane than lower down, is said to occur occasionally during pregnancy and in middle and advanced age. Whether the little nodules observed are really enlarged follicles or not is still a matter of controversy.

The older authors describe vaginitis as an inflammation of a mucous membrane, but the tendency now is to look upon it as more of the nature of a dermatitis, and thus some confusion as to nomenclature still exists.

SYMPTOMS.—In acute vaginitis the patient complains of a burning pain in the vagina, usually a frequent desire to urinate, with dysuria, and more or less itching and burning pain about the vaginal entrance. There is also a feeling of heaviness about the pelvis, backache, and a very slight rise of temperature. A general feeling of malaise, a loss of appetite, and perhaps nausea, are sometimes noticed; sometimes irritability and indications of hysteria, and sometimes no general symptoms whatever.

In the beginning there is a dryness of the parts, followed in a few hours by a sero-purulent discharge which tends to produce irritation externally.

In chronic cases the symptoms are similar, although less pronounced, and may be absent altogether.

DIAGNOSIS.—Upon inspection the vagina is found to be swollen and deeply reddened, either throughout or in spots, and presents the characteristics described in the paragraph upon the pathology. The discharge is white, pale green, or yellowish, and abundant, and may be thick and slimy in character from admixture with cervical mucus.

PROGNOSIS.—When promptly treated, the prognosis is decidedly favorable. When neglected, the consequences, particularly in the septic forms, are often serious. It may become chronic, result in ulceration, adhesion, cicatricial contraction, or spread to the uterus, Fallopian tubes, ovaries, and peritoneum.

TREATMENT.—The indications in the treatment of acute vaginitis are to avoid and to relieve irritation, and to secure cleanliness. The patient should be kept quiet (not necessarily in bed), somewhat restricted as to diet, and the stools kept soluble. Walking, sexual intercourse, and scratching the genitalia must be interdicted.

The great source of irritation is found in the infective matter and

the character of the discharges. These must be removed as completely as possible from contact with the vaginal membrane. Constant irrigation of the vagina would accomplish this, and, but for the trouble and irritation attending its use, would be recommended with the expectation of curing the case (if treated in the beginning) in from two to six days. A copious vaginal douche, continued for fifteen minutes, of a hot (½ of 1 per cent.) saline solution or saturated solution of boracic acid, used in the recumbent position every two hours by day and every four hours by night, answers equally well, except that it may take longer to accomplish the desired result. It should be kept up in this way for a week, and used four times a day and once at night for another week or until a cure is obtained. If the disease has lasted several days, as is often the case, before the treatment is commenced, a mild antiseptic or astringent douche may be required during the second and third week, such as 1 : 3000 solution of mercuric bichloride, a ½ of 1 per cent. solution of acetate of lead, sulphate of zinc, or carbolic acid. If the disease shows a tendency to become chronic, the strength of the solution may be doubled. In no instance should an astringent vaginal injection be used during the first few days of acute vaginitis.

In cases in which so much douching is not well tolerated or is not available, the disease can rapidly be cured by the dry pack, used as follows: The vagina is first thoroughly douched out with the saline solution. Then the patient is put on the left side, a Sims speculum is introduced, and the cervix and vagina thoroughly swabbed out with a 1 : 2000 solution of mercuric bichloride and thoroughly dried with absorbent cotton. If the vagina be excessively tender, the bichloride solution need not be used, for it is necessary to avoid irritation. After drying out the parts the vagina should loosely be packed with sterilized plain or borated absorbent cotton, packing first the fornices and then the lower parts of the canal as the speculum is withdrawn. A dry absorbent dressing should be worn over the vulva and changed by the patient every two hours. The douching, disinfection, and packing should be repeated morning, noon, and night for the first two or three days, and after that twice a day for a week. As a precaution against return, a 1 per cent. carbolic-acid douche, or, if not well borne, the saline or boracic-acid solution, should be used every eight hours for a week or two longer. Attention should be given

to septic urethral or cervical discharges, or the vagina may constantly become reinfected.

Rectal suppositories or medication should carefully be avoided, as there is danger of infecting the bowel. In case such infection occurs, the rectum should be washed out thoroughly every three or four hours with the saline solution by means of a return tube. Forcible dilatation of the sphincter ani adds to the efficiency of the treatment. The bowels should be moved once or twice daily by salines.

Morphia with atropia, or chloral may be required in nervous patients to secure quiet and sleep at night.

In *chronic* cases attention should be given to general conditions that might favor the local irritation, to external sources of irritation, and especially to conditions that favor pelvic congestion, whether they lie within the body or in the habits and external surroundings.

Large antiseptic douches, such as 1 : 2000 bichloride of mercury, should be used two or three times daily. Every four to six days the vaginal fornices may be swabbed out with a 2 per cent. solution of nitrate of silver or the undiluted tincture of iron, and a loose vaginal tampon covered with vaseline left for twenty-four hours. Treatment by dry powders, such as equal parts of subnitrate of bismuth and prepared chalk, or of tannin and iodoform, kept in place by a cotton tampon, is used by some gynecologists. The powder should be renewed every day, having the tampon removed and the old powder thoroughly douched out just before the treatment.

In the senile and vesicular forms mild antiseptic douches are indicated, supplemented by strips of lint soaked in 5 per cent. carbolized oil or glycerin or smeared with 5 per cent. carbolized oxide-of-zinc ointment, or, in sensitive cases, of cold cream or almond oil kept in the vagina.

In giving douches for vaginitis it should be remembered that there are many folds and irregularities that hide and retain the secretions; hence it is well to have the patient lie on the back with the hips elevated on the bed-pan, so that the vagina will be well filled. The bag of the fountain syringe should be considerably higher than the patient and the nozzle introduced well up toward the fornices. Tampons are best placed with the patient in the knee-chest position.

Cystic vaginitis is best treated by puncture of the small cysts

about the cervix, and the application, after their evacuation, of the tincture of iodine. A vaginal douche of a 1 : 2000 solution of mercuric bichloride should be used twice daily.

In hospital practice, where there is always some one in attendance to give the douche, a bulb is preferable to a fountain syringe because the water can be pumped into the vagina with more force, and thus dislodges the secretions better.

Neoplasms of the Vagina.

Vaginal Cysts.—Vaginal cysts, excluding cystic vaginitis, are sacs of fluid contained in or just beneath the vaginal wall, varying from the size of a marble to an egg, although if not interfered with they may attain a much larger size. The fluid is usually thin and transparent, but occasionally slightly viscid and turbid. The cyst-wall is intimately connected with the surrounding tissues and usually lined with cylindrical epithelium. Pavement epithelium has been found in a few cases. The cysts may be situated in any part of the vagina and occasionally assume a polypoid character.

Recent investigators attribute them to an embryonal origin. Accumulations of fluid in the partly-obliterated canals of Gaertner or ducts of Müller, particularly the former, are supposed to produce them.

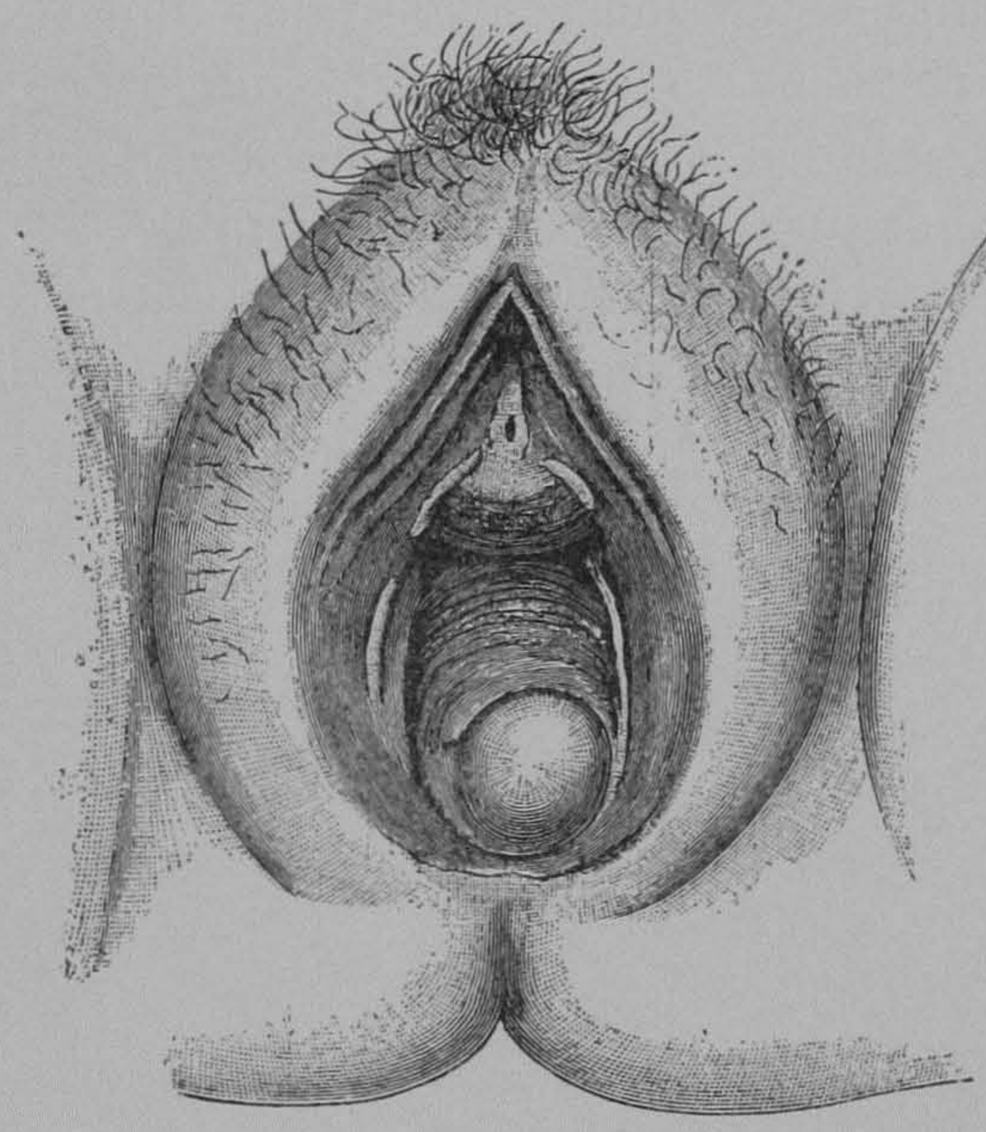
They give rise to but few symptoms until they have attained sufficient size to press upon the vaginal entrance and cause a sense of discomfort and pressure, and perhaps some leucorrhea. They may then assume the appearance of a prolapse of the vaginal wall. Where a prolapse is in process of formation, a vaginal cyst may go far toward determining the result.

The DIAGNOSIS is easy. When on the lateral vaginal walls, they are felt as hard elastic bodies that yield a thin transparent fluid upon aspiration. When situated upon the anterior wall, they may be recognized by putting a sound in the bladder and a finger in the vagina; or when on the posterior vaginal wall, by the forefinger in the rectum and the thumb in the vagina.

The TREATMENT consists in excising a part or the whole of the cyst-wall. When situated low down, they can easily be dissected out of their bed and the wound sewed up with buried catgut sutures. When situated higher up and complete excision is impossible, a portion of the cyst-wall should be excised, the remains painted with tincture of iodine, and packed with iodoform gauze.

Fibroid Tumors of the Vagina.—Fibrous and myomatous tumors seldom grow from the vaginal walls. True fibro-myomas, however, are not infrequently met with. They may be situated in the vaginal walls the same as vaginal cysts and of the same size, or they may become pediculated. They present the same symptoms and feel much the same as the cysts, except that they are not as elastic, and they do not yield fluid to the aspirating needle. As they grow larger the surface may ulcerate, or as a polypoid fibroid is extruded from the vulva the capsule may undergo necrosis. Sometimes they are quite œdematous and soft.

FIG. 73.



Cyst of the Posterior Vaginal Wall.

The polypoid growths may simply be cut off and the pedicle ligatured if necessary. The intramural tumors should be enucleated and the bed sewed up, as after excision of a vaginal cyst.

PAPILLARY EXCRESCENCES.

Small papillary growths of non-malignant character are sometimes found on the inflamed vaginal mucous membrane. They consist of a proliferation of connective tissue and epithelium. They are insensitive, but give rise to an irritating and somewhat offensive discharge. Sometimes they bleed quite profusely.

They should be obliterated by a strong astringent or caustic application and the vaginitis treated by the ordinary remedies.