# TREATMENT OF GONORRHŒA IN THE FEMALE.

By W. B. Small, M.D.,
*Chief Surgeon Gynecological Dispensary, University Hospital.*

The treatment of gonorrhœa in the female has caused almost as much controversy as the relief of the analogous condition in the male—the different drugs and appliances, modes and methods of so-called quick cures, each held by its originator as the destroyer of the gonococcus or healer of the mucous membrane, depending upon the writer's view when the condition may be considered not transmissible or capable of injury to the patient. The forms of treatment advised in this paper depend upon the part infected, each remedy advised having stood the test of many comparative trials, and only to be used in each particular stage of the disease. Many views are held as to the different parts most commonly affected, but the most logical seems to be the following: first, urethra; second, cervix; third, vagina; fourth, vulva; fifth, rectum; sixth, inguinal glands.

## URETHRITIS.

Specific urethritis in the female is not usually treated as a distinct affection. The symptoms for which the patient presents herself—namely, frequent, painful, and burning urination—are so often attributed to "cold in the bladder," that unless a specialist is consulted or the above symptoms are associated with inflammatory conditions of the surrounding structures demanding examination, a diagnosis of the acute stage is seldom made. In the

first stage, often known as the increasing stage, the discharge is small in amount and mucopurulent in character. On microscopical examination it shows an abundance of epithelial cells and few pus cells, which when found are not well defined in character; numerous cocci in the field; the gonococcus few in number, and when seen are confined almost exclusively to the epithelial cells. Under these conditions local treatment is contraindicated. Carbonated and acidulous drinks are positively interdicted. Internally, a powder consisting of potassii bicarb., potassii bromid., salol, āā gr. x, every four hours, given until the dysuria is somewhat relieved. The discharge then assumes a more purulent character. In an examination of a specimen, pus cells will predominate; few epithelial cells—so few, indeed, that they will not be seen unless specially looked for—will be noted, while the gonococcus will be quite plentiful, occurring in the pus cells, and the field will be almost clear of any other kind of cocci. Local treatment should then be instituted, consisting of irrigation of the urethra with protargol, one-half of 1 per cent. solution, increased to 1 per cent. solution in seven to ten days afterward. This is preferably accomplished by Skene's reflux catheter or a soft-rubber catheter. At the same time, internally, a capsule containing olei santili, balsam copaiba, āā ♏v, with one of the vegetable digestants—such as papoid or caroid, āā gr. iij—is given. While following this line of treatment careful note should be made of the urine in relation especially to its frequency, for a condition resembling markedly the well-known posterior urethritis of the male is likely to develop. In the female the urethro-cystitis includes more of the bladder surface, as a cystoscopic examination shows, than its prototype in the opposite sex. This condition is diagnosed by the increased frequency of urination associated with a previous urethral discharge, and in severe cases by terminal hæmaturia. A good treatment in this stage is protargol (1 per cent. solution), applied directly to the bladder wall, while capsules of copaiba and sandal-wood are administered internally. This line of treatment is followed until the symptoms and the urine show the inflammation to be confined entirely to the urethra. When the examination of the discharge shows pus cells small in size, few if any epithelial cells, and the gonococcus, when found, of a not well-nourished variety, then a slightly astringent injection of zinci sulph., pulv. alum, āā grs. xv; hydrastis, f℥j; aqua destillat., f℥iv; or zinci sulph., pulv. alum, āā grs. xv; acid. carbolic., gtt. iv; aqua destillat., ℥iv, will help dry up the discharge. After using this injection for two or three weeks, the discharge will be seen to consist of pus cells, not well defined, and a few epithelial cells; the gonococcus is seldom seen, and when apparent its well-known distinctive features are almost obliterated. A more astringent injection may now be used to advantage, such as zinci acetat., acid. tannic., āā grs. xx; aqua destillat., f℥iv, which will in most cases be followed by an entire cessation of the discharge. If after examination of the urine "clap shreds" persist, the passage of a sound, with slight massage of the urethra per vaginam—to iron out, so to speak, all the mucous membrane—should precede the injection. When all the "Tripper Fadden" are absent from the urine after a discontinuance of treatment for one week, and the patient has been allowed to use her own inclinations as to stimulants, and a menstrual period has passed with no return of the discharge, the condition may be considered cured. A discharge continuing for eight weeks or more must be classed as chronic. This is the form of urethritis most frequently seen by the general practitioner. Chronic urethritis in the female may be divided into three classes, from the stand-point of treatment—anterior, middle, and posterior—the anterior embracing the "urethritis of Guerrin," namely, gonorrhœal infection of the follicles, especially those referred to as Skene's, and four or five other follicles found in the vestibule. Pure ichthyol injected with a hypodermic syringe having a blunt point will quite frequently destroy the infection, obviate the tendency to abscess formation, and in most cases give permanent relief. If the above treatment is not successful, pure nitric acid, or a Paquelin cautery, carefully applied, will entirely destroy the follicle. Middle urethritis—that portion posterior to Skene's follicle and extending to the sphincter—is the seat of chronic granular urethritis. The passage of a full-sized sound, with massage per vaginam, followed by irrigation with argentic nitrate, beginning with a solution of 1 to 4000, increasing in strength to 1 to 1000, or ichthargen, 1 to 2000, will hasten a cure. The above treatment, continued two or three times weekly for two to four weeks, followed by the use of a corrugated sound with Finger's ointment—potass. iodid., ℥jss; iodine, pure, gr. xv; olive oil, ℥jss; lanoline, ℥iij—inserted in the urethra and allowed to remain five to ten minutes, almost always results in a cure. Chronic posterior urethritis is a form of vesico-urethral fissure characterized by frequency of urination, and is marked by pain, with tenesmus at the

close of urination. Skene's or Kelly's endoscope, or a similarly constructed instrument, gives the best view of the condition. The infected areas may be hidden in the folds of mucous membrane, and unless these are opened out they may escape detection. The treatment consists of dilatation of the sphincter by the uterine dilator and the administration of urotropin, gr. v, every four hours, to make the urine as bland as possible. In severe cases the establishing of a vesicovaginal fistula may be necessary, in order to give as complete rest as possible to the sphincter.

### CERVICAL GONORRHŒA.

The diagnosis of this form of specific discharge can only be made by the microscope. When a patient is examined and urethritis virulent in character is present, an examination of the cervical discharge is obligatory. No symptoms usually manifest themselves at the beginning. After the condition has been determined the application of a 1 or 2 per cent. solution of protargol should be made to the cervical canal. This will be found perfectly easy in those cases having a patulous cervix or a laceration following childbirth; but in those cases of pinpoint or a very narrow cervical canal, dilatation will be necessary to admit the syringe. The one most useful for the purpose resembles the deep urethral syringe of the male, but having no curve. The syringe should be inserted to the internal os, and the liquid injected very slowly while it is withdrawn; from five to ten minutes should be consumed in the application. The above treatment should be made every other day—when possible, every day—until the pus cells do not show any gonococci and the epithelial cells begin to predominate in the discharge. Ichthyol and glycerin, 20 per cent. solution, should then be used, taking five to ten minutes in making the application, always following the rule to inject only upon withdrawal of the syringe, and to take great care not to make a forcible injection. The above line of treatment is contrary to the views held by Clark, Menge, Dörderlein, and other very prominent and careful observers. The principal objection to this line of treatment seems to be the induction of uterine contraction and forcing the excess of fluid through the Fallopian tubes. If the above rules are followed in making the application the possibility of causing uterine colic is slight. Since this paper has been written, Dr. Thomas von Marschalk (*Berliner klin. Wochenschrift*, 1902, No. 15, page 330) reports 108 cases in which intra-uterine injections were used, and only exceptionally at the beginning a slight uterine colic occurred. After the discharge is entirely free from the possibility of infection, treatment should be stopped and an examination made at the close of the next menstruation. If after repeated trials no gonococci are found, it may be considered cured. If a return is apparent, a solution of argentic nitrate, 5 to 10 per cent., should be used. Ichthargen in some cases seems to act well. If after trial of the above remedies the virulence of the infection still persists, pure carbolic acid and curetting must be resorted to. When the gonorrhœal infection has extended to the body of the uterus, in most cases the diagnostic ability of the person in charge will be greatly taxed. The sooner a thorough curettement is instituted the better, especially in those cases where malposition of the uterus precludes the possibility of free drainage. The percentage of tubular disease is markedly diminished. In curetting cases of infection by the diplococcus of Neisser, special care should be taken to sterilize the lower cervical canal and vagina before inserting the curette. While gonorrhœal endometritis is serious, so far as the health of the patient is concerned, mixed infection has fatal results to its credit. Following the curettage, the entire uterine cavity should be swabbed out with protargol, 5 to 10 per cent. solution, in order, as far as possible, to reach any points of infection not removed by the operation and to kill any of the organisms which are situated deeper in the tissue. The after-treatment consists in the frequent application of protargol in different strengths, depending upon the condition of the case, preferably by inserting gauze saturated with the application. The Columbian solution has given very good results; other solutions containing ichthyol and protargol, as well as absolute alcohol, act well in some cases. Formalin is advised by Menge in chronic cases, and is often followed by marked improvement. The strength of the solution and amount used in making application are governed to a marked extent by the condition of the tubes and ovaries.

### SPECIFIC VAGINITIS.

Specific vaginitis is a much-disputed disease, many doubting its existence and an equal number being sure of its presence. Numerous experiments have been made with the diplococcus of Neisser in the vagina. If placed in a perfectly healthy vagina of a married woman infection seldom occurs. In the infant subjected to infection by dirty towels, or

those infected by rubbing the gonorrhœal penis over the genitalia of a female child—a bestial habit resorted to by a certain superstitious class in the belief of curing the condition—vaginitis in its most virulent form occurs. In full-developed women the susceptibility to inoculation is slight, but there is a certain class of females in which a chronic discharge is present from the beginning of menstruation, quite frequently accompanying some form of poor development of the reproductive organs—most commonly congenital split of the cervix, with marked ectropium, thus keeping the vagina bathed in a constant discharge. The vitality of the mucous membrane much reduced in gonorrhœa is sometimes seen. Vaginitis in the infant is especially difficult to treat, particularly when the vaginal opening is very minute. Careful dilatation is necessary, for unless free drainage is present any hope of cure is out of the question. The especial susceptibility of the almost embryonic mucous membrane and its poor recuperative power make it quite prone to a chronic condition. Weak solutions of boric acid, followed by protargol, 1 per cent. solution, and keeping the urine as non-irritating as possible, should be instituted in the acute stages. This treatment, if followed carefully for two to four weeks, will reduce the amount and purulent character of the discharge; then a mildly astringent irrigation of zinc and alum will diminish the discharge so that it is almost imperceptible, but if discontinued for a few days it will be followed by a prompt return. Small suppositories of ichthyol, inserted after touching up all ulcerated points with argentic nitrate, 1 to 2 per cent., depending on their size, usually heal the infected areas. Gonorrhœa of the vagina in older persons will permit of frequent douching with potassium permanganate, 1 to 2000, followed by protargol, 1 per cent. solution, until the acute stage has somewhat subsided. The careful exposure of the vagina, in the knee-chest posture, with an especially constructed wire speculum, followed by swabbing the entire surface with protargol, 5 per cent. solution, and placing a tampon containing a weak ichthyol ointment so that the vaginal walls will be separated, is essential. This should not be retained longer than twelve hours, followed by a cleansing douche of at least three gallons of hot water, then another quart of mildly astringent douche. If the vagina should become ulcerated, especially in the posterior vaginal vault—a condition fostered by an irritating discharge from the cervix—strong solutions of argentic nitrate, pure ichthyol, and the removal of the accentuating feature will almost always give permanent relief.

### GONORRHŒAL VULVITIS.

This form of specific infection, commonly known as vulvitis, reaches its most pronounced types in the young. The different modes of infection and the age of the patient have a marked influence on the method of treatment to be instituted. In the infant, when the infection is due to dirty towels or direct infection, as in the vaginal cases from a degenerate idea of the curative property in an innocent infant, boric acid solution and liquor plumbi subacetatis diluted, equal parts, should be frequently used to cleanse the parts. A few layers of gauze saturated with the above solution should be kept between the labia. Rest should be instituted whenever possible, to avoid the tendency to bubo formation. After the acute stage has somewhat subsided careful painting of the inflamed surface with argentic nitrate, 2 per cent. solution, should be tried, followed by a dusting powder of pulverized boric acid and pulverized acetanilid, equal parts. In older patients the most important part of the treatment consists in complete rest and the induction of free drainage by the insertion of gauze saturated with protargol, 2 per cent. solution, between the labia majora, followed, after the acute symptoms have somewhat diminished, by painting the surface with argentic nitrate and dusting powder. Inflammation of the vulvovaginal duct usually accompanies this condition. The injection of pure ichthyol acts in two ways: by keeping the duct patulous, thus eliminating the predisposing tendency to abscess formation, and at the same time has a distinct germicidal influence. If the gland itself becomes infected, complete extirpation is the only procedure to be considered, as the source of numerous transmissions of the disease can be traced directly to this point.

### GONORRHŒA OF THE RECTUM.

Rectal gonorrhœa, which is more frequently caused by the backward flow of the infectious vaginal discharge than through unnatural practices, manifests itself usually by pain and tenesmus. In the early stages a 1 per cent. solution of protargol combined with deodorized tincture of opium can be used to advantage. Not more than one ounce of this solution should be injected at any one time. The patient should be kept in a recumbent posture, in order that the application be retained as long as

possible. After the acute stage has subsided an astringent injection of zinci sulph., pulv. alum, āā gr. xv; bismuth subcarb., ʒiij; aqua destil., fʒ iv, is useful. If after this treatment the discharge persists, the examination of the rectum with an illuminated speculum will usually show granulating areas. To these argentic nitrate should be carefully applied, followed by an injection of alum and tannic acid.

### GONORRHŒAL BUBO.

Gonorrhœal bubo in the female does not seem to be as frequent as in the male. The frequency of balanoposthitis, with bubo, in the male sex has, no doubt, an etiological influence on this painful complication. At the first evidence of any swelling of any one of the glands in the groin the part should be, as far as possible, made immovable. An ointment composed of ung. hydrarg., ung. belladonna, ichthyol (pure), and lanolin, equal parts, should be applied.

This combination is spread on lint at least half an inch in thickness, is covered by wax paper, and over this a well-fitting pad of cotton is placed, and this is held in place by a moderately tight bandage. On top of the first bandage another should be placed, increasing with each turn the amount of pressure until three bandages have been used, each three inches in width and eight yards in length. This dressing should be removed every other day, examining the gland every time to see what progress the inflammation is making. If the above treatment has been followed for one week without any distinct improvement in the condition, the possibility of aborting or stopping suppuration is slight. This form of treatment in the author's hands has resulted in 70 per cent. of cures in simple gonorrhœal bubo. In tubercular infection of the glands removal is the only form of treatment to be applied. When the glands fail to react to the above line of treatment, hot applications, frequently applied, will at times cause absorption, even when fluctuation can almost be elicited. Failing in this, a clean dissection of the gland must be made, and the incision may then be closed as a clean wound. If the gland is necrotic and breaks down during the attempt at dissection it must be lightly curetted and swabbed with pure carbolic acid.