GONORRHEA IN WOMEN.*

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I.—INTRODUCTION.—The number and character of the other papers in this symposium make it necessary for me to consider gonorrhea only as it is peculiar to women. I will simply review the more important points in the subject in order to make the paper brief and in order to open up the entire subject for discussion. Great credit is due Noeggerath for demonstrating the importance of this subject, which he did years before the medical profession were able to realize its significance. Fordyce Barker in opening the discussion on his paper before the American Gynecological Society in 1876 said: "If these views are true, a modification of this paper should be found in every Sabbath school library throughout the land." In the discussion which followed Noeggerath's views were very severely criticised. Only until recently have his teachings been fully appreciated.

II.—FREQUENCY.—The frequency of gonorrhea in women varies as regards location and social position. The frequency varies in these respects as it does in the male, but is not so common in women as in men. Saenger states that 25 per cent of his hospital and private patients have gonorrhea. Lomen found the diplococcus in fully 60 per cent of the cases in Schroeder's clinic. In A. Martin's clinic in Berlin, in 2,078 cases, 279 were due to gonorrhea. According to E. Wertheim, gonorrhea is the most frequent cause of suppuration met with in gynecological practice. Kopytowsky finds that 10 per cent of the prostitutes whom he has examined still have gonorrhea in the vaginal secretions, after they have been discharged from the hospital as cured of gonorrhea; that 7 per cent of prostitutes admitted to the hospital for other diseases have gonorrhea in the vaginal secretions; and concludes that 8 per cent of all otherwise healthy prostitutes have gonorrhea. From my observations I would conclude that the percentage must be larger than this in this class of people, as in the large majority of them careful investigation shows redness and discharge about the urethral glands, the glands of Bartholini and other glands at the vaginal orifice. Dudley says: "The pavement epithelium of the vagina and the presence of the lactic acid bacteria normally found there by Doederlein make the vagina relatively immune."

There can probably be no doubt that a certain degree of immunity to infection does exist, as in all probability all prostitutes are subjected to gonorrheal infection.

III.—LOCATION.—The gonococcus has been found in all the mucosa of the entire female generative organs, and has been found in the musculature of the uterus and in ovarian abscesses. In one case of double ovarian abscess on which I operated, the gonococci were the only microorganisms present. The Fallopian tubes were not diseased. In this case the gonococci probably past from the uterine mucosa through the uterine wall into the ovary. Bacteriological examinations, made in Howard Kelly's clinic at Johns Hopkins Hospital, of pus from ovaries and tubes in forty-three cases showed the presence of gonococci in seven of them. This, however, does not indicate that only seven of them were due to gonorrhea. Saenger and A. von Rosthorn found tubal disease in 33 per cent of women affected with gonorrhea. The statistics of Bumm show that gonorrhea extends into the Fallopian tubes in about 10 per cent of cases affected with the disease. Gonorrhea is found less frequently in the urethra than about the vaginal orifice. A. Martin considers this due to the infrequency of glands about the urethra. Penrose thinks that gonorrhea attacks the different parts in the following order of frequency: the urethra, the cervix uteri, the vulva and the vagina. Pryor says that gonorrheal endocervicitis occurs five times as often as gonorrheal vaginitis. Gonorrhea seldom extends to the bladder, altho it may do so and may even extend into the ureters and to the kidney. It is not uncommon for gonorrhea to extend into the rectum. Baer in the examination of 191 cases of discharge from the bowel in women found gonococci in 76 cases. Saenger thinks the greater number of rectal strictures are gonorrheal in origin. I have observed gonorrheal proctitis in five or six cases. The disease probably extends to the rectum from the vaginal secretions, from rectal examinations and from use of infected rectal syringe points. Dr. A. H. Burr gave the results of an exhaustive study of this subject in a paper which he read before this society in November, 1896.

IV.—ETIOLOGY.—Bumm states that the development of gonorrhea is never primary in the vagina, but that invasion is by way of the cervix, or more rarely the urethra, where the epithelium is less resistent. This is especially true of the cervix, where the epithelium is cylindrical. According to Steinschneider and Fabay, however, the urethra is the more frequently attackt. Schultz's recent investigations show that the urethra and cervix are primarily involved in about the same proportion of cases. Bumm has stated that pregnancy will provoke an excessive development of gonorrhea even in cases in which the date of infection has been very remote. J. Veit believes that the first attack of gonorrhea usually disappears spontaneously and that the Fallopian tubes become involved in the first attack only in rare cases of infection, shortly before or after labor. Bumm has kept gonorrheal pus in contact with the vaginal wall for twelve hours without producing any inflammatory reaction. Menstruation favors but does not insure the revival of gonorrhea in latent cases. This is due to discharge from the glands and also because blood serum is an excellent culture medium for the growth of the gonococcus. This is the reason why gonorrhea is frequently contracted during or near the menstrual period. This indicates the advisability of the frequent use of antiseptic douches during menstruation. One patient under my care had repeated attacks of vulvo-vaginal gonorrhea following menstruation, as the result of infection from the endometrium. By the use of douches during menstruation these attacks were prevented. The tendency for gonorrhea to extend during menstruation accounts for the fact that attacks of metritis, salpingitis and peritonitis so frequently date from a menstrual period, or from an interrupted menstruation. Bumm denies that gonococci lose their virulence and holds that infection from an old case, if planted on healthy mucosa, produces an acute attack. Bumm believes that gonorrhea is a pure mucous membrane parasite. Schulz after extensive microscopical investigation concludes that gonococci are much more numerous in the urethra than in the cervix, and consequently that infection most frequently takes place from the urethra.

V.—PATHOLOGY.—It was formerly believed that gonorrhea has not a pus producing micro-organism; that when suppuration

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occurred the infection was a next one. This has been disproven by finding in large collections of pus gonococci as the only microorganism present. In gonorrheal inflammation, however, the amount of exudate is greater than in most of the other inflammations. Gonorrheal inflammation usually extends by continuity of tissue. It may, however, extend through the lymphatics and the blood vessels. An illustration of extension through the lymphatics is seen in inflammation of the inguinal glands and in the broad ligaments, during the acute stage of the disease. That it may extend through the blood vessels is proven by the gonococcus having been found in the blood and in the tissues far distant from the primary seat of the disease.

VI.—SYMPTOMATOLOGY.—The disease may be acute or sub-acute from the first. In the acute cases the symptoms may be similar to any acute vulvo-vaginitis and urethritis. The uterus and adnexa are seldom primarily involved, altho in rare cases there may be present symptoms of acute metritis and pelvic peritonitis, probably never general peritonitis. The fact that the gynecologist is called upon relatively seldom to treat the disease in the acute form causes me to believe that the sub-acute is the more common mode of invasion of the disease. In the latter variety, a leucorrheal discharge is primarily the principal, and may be the only symptom. If the disease extends to the Fallopian tubes, the symptoms will then be those of salpingitis, with probable suppuration. In some cases the disease is excessively acute, as the result of either diminisht resistance to, or great virulency of, the infection.

VII.—DIAGNOSIS.—The only positive diagnosis is made by detecting the presence of the gonococcus. This can usually, if not always, be accomplisht during the acute stage of the disease. In the acute variety, however, there is usually no difficulty in making a relatively certain diagnosis, without the use of the microscope. In the sub-acute and chronic stages of the disease, the gonococcus is detected with much more difficulty. When it is not found, the technic may be faulty or the investigation not sufficiently thorough. Absence of the gonococcus, however, does not prove that the disease present is not primarily due to gonorrhea. Redness about the openings into the Bartholinian glands and into the urethral glands, usually, if not always, means that the patient has had gonorrhea. How long the gonococcus can be found in the tissues after the date of infection cannot be stated. Bumm states that the gonococci may persist and remain virulent in the genital tract for five or ten years. Saenger in discussing residual gonorrhea in women states that after the disappearance of gonococci in the secretions, certain manifestations of the disease may remain, such as redness about and discharge from the glands at the vaginal orifice, the urethra and the cervix.

VIII.—PROGNOSIS.—The statement frequently made that gonorrhea may remain in a latent form an indefinite time is probably true. A number of cases are on record where gonorrhea has been contracted a number of years after the disease was acquired. It is not improbable, however, that the subjects may not have subsequently been exposed to sub-acute infections. Spontaneous cures probably result in the male and female. The claim made that spontaneous cures are more frequent in men than in women, if true, may be due to the increast number of glands and cylindrical epithelium in the female generative organs. The investigations of Doederlein, Kroenig and others, relative to the destructive nature of the bacteria of the normal vaginal secretions to pathogenic microorganisms, would indicate that the contrary would be true. Steinschneider has demonstrated that gonococci are often present in the cervix and body of the uterus long after they have disappeared from the urethra and vagina. Immunity after recovery from the disease does not seem to take place, as Klein has found that in chronic gonorrhea the individual may become accustomed to the presence of the gonococcus and that the microorganism from such a case may cause the virulent disease in another person, and then cause reinfection in the original person. Gonorrheal inflammation of the Fallopian tubes, probably nearly always results in thickening of the tubal walls, in occlusion of the abdominal ostium, in adhesions, or in suppuration. Complete spontaneous cures, however, of the tubes probably do occur. I recently saw in consultation a patient with acute gonorrhea, involving the pelvic peritoneum; the uterus was large, excessively sensitive, and there was swelling in the region of both broad ligaments, more markt on the left side. The husband had had gonorrhea and gonococci were found in the discharge from the patient. About six months after recovery from the acute attack, I made a vaginal fixation of the uterus for retroposition. The Fallopian tubes were perfectly normal and the only adhesions found were slight ones about the left ovary. It cannot be said, however, that the tubal mucosa was involved at all. The infection probably past through the Fallopian tubes, but it is possible that its lymphatics or blood vessels was the avenue of infection. The patient now seems to be perfectly well. The literature is meagre relative to spontaneous recovery of gonorrheal salpingitis.

The prognosis as regards sterility has received a great deal of attention since Noeggerath demonstrated the importance of the subject. Graefe and Kleinwachter have investigated the causes of sterility and conclude that gonorrhea is not as prominent an etiological factor as generally supposed. In 648 cases of sterility Kleinwachter found but 80 in which the sterility could be ascribed with certainty to gonorrhea; in 12 of these the husband was known to have had the disease.

IX.—TREATMENT.—In the acute stage I believe in the free local use of nitrate of silver, ten to thirty grains to the ounce of water, to be followed by antiseptic gauze tampons or the free use of antiseptic douches. Vaginal douches should be given frequently during menstruation when gonorrheal vulvo-vaginitis exists, to diminish the tendency of the disease to extend into the uterus. The disease is most liable to extend to the uterus at this time, for the reasons already given. The douche should be at the body temperature and only sufficient in quantity for cleanliness, so as not to interfere with menstruation. Acute inflammation of the uterus and adnexa should be treated entirely by palliative measures, unless large pelvic abscesses result, which would require vaginal incision and drainage.

In chronic inflammation about the glands at the vaginal orifice and urethra, the treatment is limited to palliative measures, unless they cause sufficient trouble to indicate excision. Suppurative disease in the Bartholinian glands and Skene's tubules demand excision. Skene's glands are excised by removing the portion of the urethro-vaginal septum which includes them and in suturing the mucous membrane of the urethra to the vaginal mucous membrane.

Chronic endometritis is treated by curettage, mild caustic applications and by establishing drainage, if necessary. It may be necessary to repeat the curettage and to continue the treatment for a long space of time in order to effect a cure.

The treatment of chronic gonorrheal salpingitis will vary largely with the symptoms which result and with the amount of disease present. The adhesions which result from inflammation may in selected cases be relieved by massage, topical applications, etc. The presence of an enlargement in the region of the tubes or ovaries does not necessarily require any treatment. To illustrate, I will briefly mention two cases that came under my observation seven years ago. They both had had gonorrhea and had had slight attacks of pelvic peritonitis. When I saw them they had slight backward displacements of the uterus with enlargement of both uterine appendages. I observed these cases for four years and during this time they experienced comparatively very good health—much better physically and mentally, I am certain, than if they had been subjected to operative treatment. Such cases should not be operated, unless symptoms develop which indicate interference, as the pus in these cases frequently becomes sterile. When suppuration occurs, indicating operative interference, it is nearly always necessary to excise the affected tube or tubes, as the abscesses are usually multiple, not sufficiently circumscribed, and as the exudate is too abundant to make an attempt at incision and drainage justifiable.

Some conservative surgery has been done upon the tubes affected with gonorrhea with good success in a limited number of cases. The results, however, are not sufficiently numerous as yet to enable one to form any conclusions. It may probably be said, without exciting contradiction, that tubes with gonorrhea calling for operation, should be excised, as the danger of recurrence of the disease is markt and as sterility, in all events, is almost certain.

In nearly all cases of gonorrheal inflammation the ovaries or some ovarian tissue remain healthy. When operating on these cases, especially if the subject be young, an effort should always be made to preserve menstruation, by leaving the ovaries, an ovary, or some ovarian tissue, and a part of the corresponding tube. It is my opinion that this can be accomplisht in from 90 to 95 per cent of all cases of gonorrheal inflammation of the uterine adnexa, where the disease is such as to indicate operative treatment.

When the endometrium is affected, both ovaries and tubes the seat of suppuration, and the uterus large and adherent, vaginal cystero-salpingo-oophorrectomy is decidedly the operation of election.

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