Gonorrhœa of the Mouth.

Hölder[1] states that this affection may arise from direct contact of the mouth with the genital organs, and says that Petrasie, of Kiel, had recently reported the case of a young man who confessed having exposed himself in this manner. On the following day he had pain in the lips and gums. On the fourth day the mucous membrane of the lips and buccal cavity became intensely red; motion of the mouth was painful; the gums were spongy, inclined to bleed, and a little receding from the teeth, and the buccal secretion was increased in quantity. Other authors speak of a copious puriform secretion and aphthous exudations. Petrasie's case is said to have been cured in a week by means of an alum gargle.

Gonorrhœa of the Nose.

A case of this kind is reported by Mr. Edwards.[2] Hölder (op. cit., p. 288) also speaks of it. It is said that it may arise either from the matter of gonorrhœal ophthalmia flowing down upon the nares, or from the use of a napkin, or the fingers soiled with the same; that generally only one nostril is affected; that the symptoms are about the same as a very severe "cold in the head;" that there is but little pain, and that it is readily cured by cold applications, snuffing up cold water, pencillings with nitrate of silver, and afterwards the use of an alum or borax lotion.

Umbilical Gonorrhœa.

A young man, aged 19, was found by Morrison[3] to have urethral gonorrhœa, and at the same time a similar discharge from the umbilicus, which was relieved by solutions of acetate of lead and sulphate of zinc.

[1] Lehrbuch der venerischen Krankheiten, Stuttgart, 1851, p. 288.
[2] London Lancet, Am. reprint, June, 1857.
[3] Bull. méd. du Nord, Lisle, No. 10, 1874.

CHAPTER XX.

GONORRHŒAL OPHTHALMIA.

Gonorrhœal ophthalmia has been supposed to originate in three ways—from inoculation, from metastasis, and from sympathy, each of which has from time to time been received by certain authors as its exclusive mode of origin.

The occurrence of gonorrhœal ophthalmia from inoculation or contagion cannot at the present day be called in question. Numerous cases, reported by Mackenzie, by Lawrence, and by nearly every modern writer on diseases of the eye, leave no room to doubt that the discharge of gonorrhœa, applied to the ocular conjunctiva, may set up a severe and destructive form of inflammation, similar to, if not identical with, purulent conjunctivitis. But, besides these reports of cases in which the inoculation has been the result of accident, further proof is to be found in the treatment of pannus, employed of late years chiefly by French and German surgeons, in which the eyes have been intentionally inoculated with the pus of gonorrhœa. Discharges from the genital organs have been transferred to eyes affected with pannus, with the express design of exciting acute inflammation, which, it was hoped, might cure the chronic disease, and, however questionable may have been the results of this practice, so far as the accomplishment of the latter purpose is concerned, there has been, at all events, no difficulty in producing acute inflammation by such inoculation. With these facts before us, therefore, no further doubt of gonorrhœal ophthalmia from contagion is admissible; indeed, direct inoculation is now regarded by all surgeons, with but few exceptions, as the only mode in which originates that destructive form of conjunctivitis which sometimes attends gonorrhœa.

The old idea of a metastatic origin of gonorrhœal ophthalmia, first advanced by St. Yves,[1] is now completely abandoned, and the same is true of "sympathy" as a supposed cause.

Frequency.—Gonorrhœal ophthalmia, compared with the frequency of gonorrhœa, is a rare affection. The following table exhibits a number of cases received at the New York Eye Infirmary during a period of fifteen consecutive years, and the proportion which these cases bear to the whole number of patients.

[1] A New Treatise of the Diseases of the Eyes, by M. De St. Yves, Surgeon Oculist of the Company of Paris, translated from the original French by J. Stockton, M.D., London, 1741, p. 168.

Year.	Whole Number of Patients.	Cases of Gonorrhœal Ophthalmia.
1845	1366	2
1846	1245	3
1847	1485	2
1848	1815	5
1849	1902	3
1850	2082	3
1851	2472	6
1852	2732	7
1853	2719	5
1854	2635	6
1855	2652	5
1856	2634	4
1857	3216	3
1858	3908	2
1859	4171	3
Total,	37,034	59

It thus appears that, compared with the whole number of diseases of the eye treated at this institution, cases of gonorrhœal ophthalmia are only as 1 to 628. We have no statistics by which to determine the exact ratio of this disease to the whole number of cases of gonorrhœa; yet I think the experience of every physician would lead him to infer that it is not much greater than to diseases of the eye, since gonorrhœa must be nearly as frequent as all ocular affections combined.

Causes.—The contagious matter which has produced acute inflammation of the conjunctiva, in a given case, may have been derived from the genital organs or from the opposite eye—already affected with gonorrhœal ophthalmia—of the same, or from those of another person. In many of the reported cases of this disease the ophthalmia has been produced by patients washing their eyes in their own urine, with which gonorrhœal pus was mixed, or by otherwise applying the discharges from their own persons.

The personal habits of those affected with gonorrhœa, and the degree of intimacy existing between members of the same household, will in a great measure determine the frequency of the infection. Among the poor and squalid, where cleanliness is neglected, and the same vessels and towels are used in common, gonorrhœal ophthalmia may readily be communicated from one individual to another, until it has attacked all the members of the same family.

Ricord states that he has never seen gonorrhœal ophthalmia produced by discharges from any portion of the genital organs except the urethra; and that he has never known it to be caused by the pus of balanitis or vaginitis. There is reason to believe, however, that a simply vaginal discharge is capable of exciting the disease under consideration.

It is a well-established fact that "ophthalmia neonatorum," which, like gonorrhœal ophthalmia, is but a form of purulent ophthalmia, is frequently caused by inoculation of the infant's eyes with leucorrhœal

discharges from the mother. I have repeatedly seen severe purulent conjunctivitis in very young girls, who were affected with that form of vaginitis which sometimes attacks children, independently of contagion, and which has been so ably treated of by Mr. Wilde, of Dublin. Analogous cases are reported in treatises on diseases of the eye, and Dr. Jüngken mentions one instance, in which the ophthalmia, originating in this manner, spread to seven members of a family.[1]

I know of no authentic case of gonorrhœal ophthalmia occasioned by the pus of balanitis. Matter from a venereal or ordinary abscess must also be regarded as generally innocuous. Yet it is, perhaps, impossible to determine with accuracy the limits within which purulent matter is capable of exciting severe inflammation of the conjunctiva. The predisposition of the person exposed will doubtless have no small influence upon the effect produced. Still, so far as at present known, these limits are confined to the urethra and vagina.

The inoculations which have been employed in the treatment of pannus will throw some light upon the conditions under which contagion may be supposed to take place. The puriform matter used in these inoculations has been derived either from the genital organs or from an eye affected with gonorrhœal ophthalmia, or ophthalmia neonatorum. When such matter is kept from contact with the air, it is found to contain its contagious property for about sixty hours. If exposed to the air, and allowed to dry, it soon becomes innocuous. In the experiments of M. Piringer, of Gratz, a piece of linen was moistened with gonorrhœal matter and allowed to dry; the cloth was then rubbed upon the eyes of several persons and no inoculation ensued. The dried matter scraped from the cloth and applied directly upon the conjunctiva took effect within about thirty-six hours after it was first obtained. Matter once dried, and immediately moistened again, either by the addition of water or by contact with the secretions of the eye, was found to be contagious. Fresh matter was contagious, even when diluted with one hundred parts of water.

Van Roosbroeck experimented with the pus of a common abscess, and found that it was innocuous when applied to the eye. This surgeon was also led to the conclusion that the discharge from an eye affected with purulent ophthalmia, diluted with water, retains its power of contagion until decomposition has begun to take place, as shown by its evolving the odor of putrefaction.

When the inoculation is successful, no disagreeable sensation is at first excited by the application of the matter, and no effect is perceived until after the lapse of from six to thirty hours, when the eye begins to feel hot, and there is an increase in the ocular secretions, which are at first entirely mucous, but soon become muco-purulent.

Gonorrhœal ophthalmia is much more common in men than in women. Ricord ascribes this difference to the greater frequency of urethritis in the male, this being the only form of gonorrhœa capa-

[1] Ann. d'ocul., Brux., 8e série, t. 1er, p. 355.

ble, as he supposes, of occasioning gonorrhœal ophthalmia. I have already dissented from this opinion of Ricord, and I believe that so far as any explanation can be given of the difference in the relative frequency of its occurrence in the two sexes, it must be based upon their different habits.

Symptoms.—Gonorrhœal ophthalmia may occur at any stage of an attack of gonorrhœa, although it is said to be more frequent during the decline. The urethral or vaginal discharge is doubtless most contagious when most purulent, which is during the acute stage, but the short duration of this stage affords less opportunity for it to be applied to the eye than the longer stage of decline. At first, the disease usually attacks one eye alone. It may remain confined to this eye, but not unfrequently, after the lapse of a few days, the opposite eye becomes implicated.

The symptoms of gonorrhœal ophthalmia are, in the main, identical with those of purulent conjunctivitis. The former disease, however, is more rapid in its development, and even more destructive to sight than the latter.

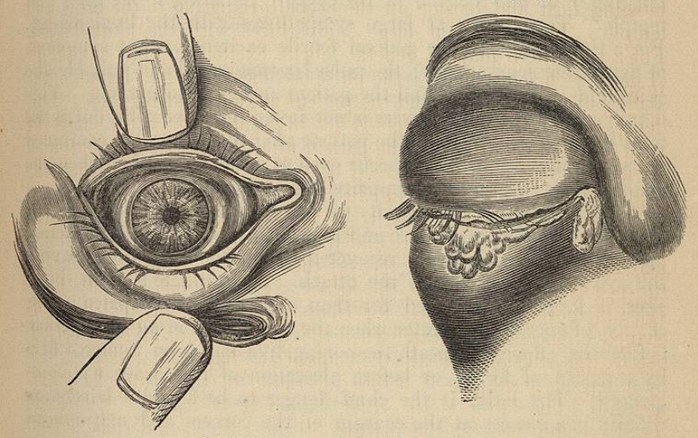
The earliest indications of an attack of this disease are an itching sensation just within or on the margins of the lids, a feeling as if some foreign body were in the eye, and an increase in the ocular secretions. The latter retain at the outset their normal transparency, although they appear unusually viscid; the ciliæ become adherent and glued together, and a collection of dried mucus may be seen at the inner canthus. As the disease progresses, the vessels underlying the conjunctiva become distended with blood. They may at first be distinguished from each other as in simple conjunctivitis, but they are soon lost in a uniform red appearance of the globe, extending as far as the cornea, which retains its normal transparency. The conjunctiva is also found to be somewhat elevated above the sclerotica by an effusion of serum, and its surface is roughened by swelling of its papillæ. Meanwhile, the discharge has become purulent, and is secreted abundantly from the inflamed surfaces.

An attack of gonorrhœal ophthalmia is so rapid in its progress, that the early symptoms just now described may have passed away before the first visit of the surgeon, who is often called to see his patient only after the full development of the disease. He probably finds him sitting up, his head bent forwards, his chin resting on his breast, and his handkerchief applied to his cheek to absorb the discharge, which irritates the surface upon which it flows. The eyelids are swollen, especially the upper, which slightly overlaps the lower, and is of a reddish or even dusky hue. The patient states that he is unable to open the eye. His inability to do so is caused less by an intolerance of light than by the mechanical obstruction which the swelling of the lids occasions, and by the pain which is excited by any friction of the inflamed surfaces upon each other.

The surgeon now moistens the edges of the lids with a rag dipped

in warm water in order to facilitate their separation, and proceeds with his examination. In his attempt to open the eye, he is careful not to make pressure upon the globe, in order to avoid giving unnecessary pain, and also, lest the cornea, if already ulcerated, may be ruptured, and the contents of the globe escape. With one finger placed just below the eye, he slides the integument downwards over the malar bone, and thus everts the lower lid, the upper lid being elevated by a similar manœuvre with the other finger of the same hand applied below the edge of the orbit; or, again, he may expose the globe by seizing the lashes and the margin of the upper lid with the thumb and finger and drawing the lid forwards and upwards. All this may be accomplished with the left hand, the right being left free to wipe away the discharge, or to make applications to the eye.

Fig. 46. Fig. 47.



Ophthalmic gonorrhœa. (Dalrymple.)

As soon as the lids are separated, a quantity of thick, yellowish pus wells up between them and partially obstructs the view; the swollen palpebral conjunctiva, compressed by the spasmodic action of the orbicularis muscle, may also project in folds. The collection of matter is now removed with a soft, moist sponge or rag, and the surface of the ocular conjunctiva exposed. This membrane is found to be of a uniform red color, with the vessels undistinguishable from each other, and elevated above the sclerotica by an effusion of serum and fibrin in the cellular tissue beneath it. This swelling of the conjunctiva is seen to terminate at the margin of a central depression occupying the position of the cornea, and filled with a collection of the less fluid constituents of the puriform discharge, which may at first sight be mistaken for the *débris* of a disorganized cornea. On re-

moving this matter, however, the latter structure may still be found clear and transparent, at the bottom of the depression, where it is overlapped by the swollen conjunctiva. In less fortunate cases, it may have become hazy from the infiltration of pus between its layers, or ulceration may have already commenced. If an ulcer is not evident on first inspection, it may often be discovered at the margin of the cornea by gently pushing to one side the overlapping fold of conjunctiva. Meanwhile, the secretion of pus is constantly going on and requires repeated removal. It is astonishing to observe how large a quantity of this fluid can be secreted by so limited a surface. It has been estimated at more than three ounces per day in some cases.

The amount of pain occasioned by this disease varies in different cases. During the development and acme of the inflammation, it is generally severe. It is described by the patient as a sensation of burning heat and tension in the eyeball, radiating to the brow and temple. The system at large sympathizes with the local disease. For a time there may be general febrile excitement, but symptoms of depression soon appear; the pulse becomes rapid and irritable, the skin cold and clammy, and the patient anxious and nervous. This depression of the vital powers is not invariably met with, but is the most frequent condition of the patient after the disease has continued for a few days; and it may occur even at an earlier period when the health has been previously impaired by any cause.

Notwithstanding the severity of the symptoms, resolution is still possible. Under proper care and treatment, the inflammatory action may abate, and the tissues recover their normal condition, leaving the eye as sound as before the attack. So fortunate a result, however, is more to be hoped for than confidently anticipated. The chances of success are greater when the case is seen at an early period, before the effusion beneath the conjunctiva has been rendered firm by a deposit of fibrin, or before ulceration of the cornea has commenced. The latter is the chief danger to be feared. Ulceration usually commences at the margin of the cornea, and may extend around its circumference, or advance towards its centre. It is in some cases superficial; in others, it penetrates through the whole thickness of the cornea, and prolapse of the iris ensues, or more or less of the contents of the globe escapes. Sometimes a portion or the whole of the corneal membrane becomes disorganized, and comes away *en masse*. The eye has been known to be destroyed in this manner within twenty-four hours after the first symptoms of the disease were observed, and this catastrophe is said to have occurred in a single night, in a case at the New York Hospital. The escape of the aqueous humor, and other contents of the globe, is usually followed by an amelioration of the pain, and the patient often entertains the hope that he is improving, while the surgeon knows that the sight is irretrievably lost.

The amount of permanent injury inflicted upon the eye will depend upon the extent and situation of the ulceration. When the

latter has been superficial, and situated near the margin of the cornea, the resulting opacity will not interfere with vision, and even when the leucoma is central, an operation for artificial pupil is still practicable, if any portion of the cornea remain clear. Perforation of the anterior chamber and prolapse of the iris, when partial, may also be remedied by art; but when the whole, or the larger portion of the cornea has sloughed away, and the prolapsed iris has become covered with a dense layer of fibrin, forming an extensive staphyloma, the case is hopeless.

Diagnosis.—Independently of the history of the case, we have no means of distinguishing gonorrhœal ophthalmia from severe purulent conjunctivitis. It has been asserted that the former commences in inflammation of the ocular conjunctiva, while the latter first affects the lining membrane of the lids. Even if this were true, it would afford but little assistance in the diagnosis, since we are rarely enabled to watch the early symptoms.

Treatment.—In undertaking the treatment of a case of gonorrhœal ophthalmia, it is of the first importance that the patient be intrusted to the care of an intelligent, careful, and faithful nurse, whose whole time and attention can be devoted to carrying out the surgeon's directions. This disease is so rapid in its progress, that neglect for a few hours only may prove fatal to vision; if the eye be saved, a large share of the credit will be due to the faithfulness of the attendant. It hardly need be said that the light touch and gentle hand of a devoted woman should be secured, if possible.

The directions of the surgeon should vary according to the stage of the disease. If the inflammation has commenced within a few hours only, and has not as yet attained its height, from four to six leeches may be applied near the external canthus of the affected eye, or a number of them be made to attach themselves to the mucous membrane of the corresponding nostril. If leeches are not at hand, cups to the temples will suffice. Such local depletion may generally be repeated with benefit, for a day or two, once or twice in the twenty-four hours, especially if the patient be of full habit. If, however, the disease progresses unchecked, and especially if there be any symptoms of general depression of the system, even this slight abstraction of blood should be avoided. It is adapted only to the early stage of the inflammation, and, at a later period, is useless, if not positively injurious.

In the early stage of this affection, we often derive great benefit from the constant application of cold. A *single thickness* of linen or thin cotton should be torn into strips of convenient size and shape, and laid upon or between pieces of ice. When thoroughly chilled, one should be laid over the eye, and be replaced by a fresh one every three to five minutes. We would recommend these applications to be kept up during the whole of the first night following the commencement of the attack. We can the next day decide on their

continuance or suspension from the symptoms and the effect produced.

If the inflammation tend to increase, a free purge should be administered, as, for example, five grains of calomel followed by half an ounce of castor oil, a full dose of Epsom salts, or three "compound cathartic pills." With regard to the diet of the patient, much will depend upon his general condition. As a general rule at this early stage, it should be light, consisting of gruel, broths, etc.; at the same time it is important to recollect the tendency in this disease to depression of the vital powers, and to be governed by the indications of each individual case.

Lastly, but by no means of least importance, the directions which will presently be given for the frequent cleansing of the eye, should be insisted on, and the attendant be duly instructed in doing it.

The treatment above recommended is intended for the early stage of gonorrhœal ophthalmia, before much chemosis, swelling of the lids, or other severe symptoms have set in. In most cases, however, as already stated, the surgeon does not see his patient till the disease has attained its height, when some modification of the above treatment is required.

Leeches and cups can now rarely be used to advantage. At the best, they will be impotent to stay the progress of the inflammation. Cathartics should be given as in the first stage,[1] and one or two free evacuations from the bowels secured each day. Here again the general condition of the patient will in a measure determine the diet to be recommended; but in the great majority of cases nourishment should be administered as freely as the appetite will admit, and may consist of bread, milk, beef-tea, steaks, mutton, eggs, etc. When the patient is unable to eat, and especially if his skin is found to be cool and his pulse irritable, or again, if ulceration of the cornea has already commenced, we must resort to stimulants and tonics. These are almost always required in this stage of the disease in hospital practice, where patients are generally more or less cachectic, and even in private practice the subjects of gonorrhœal ophthalmia are often run down by an irregular course of life. Nothing will so much contribute to hasten destructive ulceration of the cornea as a low state of the vital powers. The least indication of this condition should be met by quinine, ale, porter, wine, or milk-punch, freely administered.

The room occupied by the patient should, if possible, be spacious, dry, and well ventilated. The eyes may be protected from a glare of light by the position of the patient, or by a pasteboard shade, or by curtains; but the room should not be entirely darkened, as the complete exclusion of light favors congestion of the eye. With still stronger reason should the eyes be uncovered and kept free from poultices, alum-curds, tea-leaves, raw oysters, or similar applications,

[1] When the disease has already made considerable progress before the surgeon is called, an active cathartic, as croton oil, should be selected.

which are often recommended by some officious acquaintance. No surer way of destroying the sight could be devised than the use of these articles.

When chemosis has already taken place, no time should be lost in dividing the ocular conjunctiva and the subjacent cellular tissue by means of a scarificator, bistoury, or scissors, and the operation should be repeated once or more frequently during the twenty-four hours, so long as the chemosis continues. The late Mr. Tyrell advised radiated incisions between the courses of the recti muscles, on the supposition that ulceration of the cornea was due to constriction of the conjunctival vessels exercised by the chemosis, which it was desirable to relieve without cutting off the vascular supply by dividing the larger vessels. Experience, however, has shown that his theory was incorrect, and that as much benefit accrues from simply snipping the conjunctiva and underlying cellular tissue wherever it is puffed up by infiltration, and promoting the flow of blood by the application of warm water. Within half an hour after the blood has ceased to flow, the whole inflamed surface should be freed from pus and brushed over with a camel's-hair pencil dipped in a solution of nitrate of silver containing forty to sixty grains to the ounce, or the solid crayon may be applied, taking care to remove the residue by a free application of tepid water afterwards.

In saying that the "whole inflamed surface" should receive this application, we, of course, include the palpebral as well as the ocular conjunctiva, and the former can only be reached by everting both the upper and under lid. Now, if any difficulty is met with in accomplishing this eversion, *the palpebral opening should be enlarged by dividing the external canthus with a pair of blunt-pointed scissors.*

The "mitigated lapis" (crayons of the nitrate diluted with the chloride of silver to different strengths) is excellent for these applications. The inflamed surface is left covered with a superficial whitish eschar, and its secretion is for a time arrested. No further application need be made while this eschar remains, but when it falls off spontaneously and the surface again commences to suppurate the application should be repeated.

Instillations of a solution of the nitrate, which were formerly much in use, are not to be recommended, for the reason that they naturally fall on the cornea, where they are not wanted and where they cause great pain, and that they fail to reach thoroughly the conjunctiva, for which they are intended.

At the first visit the attendant who is to take charge of the case should be instructed as to her duties, and the importance of her faithfully performing them. She should be made to look on while the surgeon goes through the process of opening and cleansing the eye, and be taught to follow his example. A syringe is sometimes recommended for the purpose of removing the pus. There are, however, two objections to the employment of this instrument: in the first place, unless used with gentleness, the force of the stream