Reynolds (D. S.)

GRANULAR LIDS.

Read to the Wabash County Medical Society of Indiana, Oct. 15, 1896, and by unanimous vote requested to be published in the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

BY DUDLEY S. REYNOLDS, A.M., M.D.

Professor of Ophthalmology, Otology and Medical Jurisprudence in the Hospital College of Medicine, Medical Department of the Central University of Kentucky; Surgeon to the Eye and Ear Department of the Louisville City Hospital, and the Gray Street Infirmary; etc.

LOUISVILLE, KY.

REPRINTED FROM THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, DECEMBER 19, 1896.

CHICAGO:
AMERICAN MEDICAL ASSOCIATION PRESS.
1896.

GRANULAR LIDS.

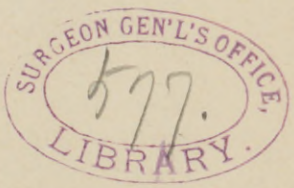
Read to the Wabash County Medical Society of Indiana, Oct. 15, 1896, and by unanimous vote requested to be published in the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

BY DUDLEY S. REYNOLDS, A.M., M.D.

Professor of Ophthalmology, Otology and Medical Jurisprudence in the Hospital College of Medicine, Medical Department of the Central University of Kentucky; Surgeon to the Eye and Ear Department of the Louisville City Hospital, and the Gray Street Infirmary; etc.

LOUISVILLE, KY.

REPRINTED FROM THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, DECEMBER 19, 1896.



CHICAGO:
AMERICAN MEDICAL ASSOCIATION PRESS.
1896.

GRANULAR LIDS.

The term "granular lids" means so much to the laity, and so little to the pathologist, that one may well feel surprised at the almost universal use of the term.

In his "Synopsis of Diseases of the Eye and their Treatment," Mr. Benjamin Travers, London, 1824, at page 277 says: "The granular state of the tarsal conjunctiva is a very common result of the mild suppurative ophthalmia."

Desmarres, in his "Treatise on Diseases of the Eye," Paris, 1847, page 185, says: "The palpebral conjunctiva, in advanced stages of puro-mucous conjunctivitis presents the appearance of a multitude of villosites. These small granules occupy the whole surface of the lid, and resemble somewhat the small papillæ of the tongue" (La conjonctive palpébrale, surtout dans sa portion tarséenne, offre une multitude de villosités, de petites granulations d'une extrême ténuité, et assez semblables, quant à l'aspect, aux papilles de la langue). He accounts for their presence by the distention of the mucous follicles, making pressure on the blood vessels at the base of the papillary membrane, interrupting the return of the blood from the papules, leading finally to such a state of engorgement as to develop a considerable degree of hypertrophy. It would be difficult to find a better definition of that form of so-called granular lids, which we now recognize as hypertrophied papillæ.

In the fourth edition, 1854, of Mackenzie's "Treatise on Diseases of the Eye," page 436, in describing the various stages of puro-mucous conjunctivitis, he says: "It is characterized chiefly by the papillary structure of the palpebral conjunctiva remaining

hypertrophied, and presenting a granular or sarcomatous appearance, while the lids, in this state, rubbing on the cornea, render this part of the eye vascular and nebulous." At page 454 of the same work, the author says: "The granular prominences in question are nothing more than the papillæ of the palpabral conjunctiva, hypertrophied by inflammation." At page 643 begins a chapter entitled "Granular Conjunctiva." In the section on symptoms, page 644, the author says: "In the angle of reflection between the lower eyelid and the eyeball, we not infrequently observe a row of bodies of a rounded form and somewhat vesicular appearance. These are different from enlarged papillæ, and consist, I presume, in the muciparous glands described by Krause, enlarged by chronic inflammation."

Stellwag, 1867, page 327, divides granular conjunctivitis, which he describes as synonymous with trachoma, into two principal classes; the papillary, confined to the papillary region of the conjunctiva, and the pure granular, both varieties being sometimes observed at the same time in the same membrane. That which he classes as the pure granular type, he describes as being "abundantly strewn with bodies resembling the spawn of frogs, which are somewhat swelled, and traversed by a coarse, vascular network." The mixed type, he says, "is made up from the symptoms of granular and papillary trachoma." The so-called frog-spawn appearance in trachoma of the conjunctiva is a condition by no means rare in the mucous membranes of other situations, and I have rarely seen cases of these spawn-like affections of the conjunctiva, in which corresponding changes were not to be found either in the Schneiderian membrane, or in the pharynx.

I have traced the descriptive language of the two forms of so-called granular lids with the intention of indicating the chronologic order in which these morbid conditions were first described, as indicating necessary modifications of treatment.

Mr. Soelberg Wells of London, "Treatise on Diseases of the Eye," third edition, 1873, tries to follow Graefe's attempt at a clinical distinction between papillary hypertrophy, and that "peculiar vesicular condition of the conjunctiva, which is frequently premonitory of that affection," and which he maintains was first accurately described by Stromeyer, 1861, and subsequently by Dr. Frank of the British army, and in the learned reports of Sir Geoffrey Marston, 1862. Krause and Schmidt, after a painstaking series of microscropic examinations of the trachomatous bodies came to the conclusion that they are "closed lymphatic follicles situated directly beneath the epithelium." These two eminent gentlemen, last named, were of the opinion that the vesicular bodies are merely anomalous states of physiologic organs; while Stromeyer, whose observations were chiefly limited to military barracks and hospitals, regarded them as a manifestation of a mysterious pathologic state, in some manner connected with defective hygiene. Dr. Marston, whose opportunities were perhaps greater than any observer of that time, found "vesicular granulations very prevalent amongst the poorer classes in Gozo." In discussing the probable atmospheric origin of this constitutional dyscrasia, he says, "the prevalence of vesicular disease of the lids is due to defective sanitary arrangements, and I conceive the palpebral conjunctiva offers a delicate test of the hygienic conditions of a regiment." These observations were begun by the military surgeons, and the first of them were published as early as 1848, yet it was as late as 1868 that Graefe first pointed out the true distinction in the clinical aspects of hypertrophied papillæ in the conjunctiva, and the true trachoma, characterized by an appearance resembling sago grains, or frog-spawn, in the conjunctiva, sometimes totally independent of, and without any manifestation of inflammatory changes in the membrane.

That form of granular lids described as an acute primary disease, may now be easily accounted for upon

the hypothesis that the preëxisting state of trachoma, having escaped observation until the acute puro-mucous or so-called catarrhal conjunctivitis sets in. I have known persons with apparently normal eyes, in whom the palpebral and retrotarsal portions of the conjunctiva were literally studded with ovoid semi-translucent bodies presenting an appearance closely resembling frog-spawn. I can call to mind at this moment, a number of persons in whom this condition exists, and, but for an occasional attack of intermittent fever, there are no manifestations of ill health. It is only when the conjunctiva has been disturbed by the presence of some ferment or by some traumatic influence, that the trachomatous bodies become a serious complication.

From what I have already said, you would naturally infer that I make a broad clinical distinction in the conditions commonly called granular lids, and I think I have pointed out sufficiently the widely varying pathologic conditions upon which a clinical distinction may readily be founded.

With the understanding that papillary hypertrophy is always preceded by some form of inflammation sufficiently severe to penetrate the parenchymatous structure, we shall have to consider: 1, whether this inflammation was of traumatic origin, attended by some infectious disease; or, 2, whether the infection was of that mild and mixed type, the puro-mucous; or of the purulent character incited by the staphylococcus aureus; or the gonococcus of Neisser, the latter being the most virulent type of purulent infection.

The advanced stages of these varying types of infection can not be successfully combatted without reference to the character of the infecting material present. It is, therefore, easy to understand why some writers have gone to such pains in describing the form of granular conjunctivitis peculiarly prevalent among soldiers and seamen as, military ophthalmia, of a dangerously contagious type; because, the infection which originally incited the inflammatory

changes in the conjunctiva, leading finally to hypertrophy of the papillary membrane being still present, preserves its own proliferating power, and kindles an inflammation in any mucous surface to which it may find access, of identical virulent character.

Piringer concluded, from a series of experimental observations, that the activity of the contagium is precisely commensurate with the stage of inflammatory action present in the infected mucous membrane at the time the matter was taken for inoculation; and he found likewise, that in some instances, pus taken from the membrane in the declining stages of gonorrheal inflammation required from twelve to seventy-two hours, according to the activity of the process at the time of taking the matter for experiment.

In my own opinion, Piringer's observations are defective, because of the uncertain and irregular manner of introducing the infection. Six hours is sufficient time in which to develop, in a previously sound mucous membrane, a decided increase of vascularity and hyper-secretion of mucus, in the conjunctiva, and there is with these symptoms always present profuse lachrymation, and morbid sensibility of the eye to light. In twelve hours pus is nearly always abundant; and the disease may be fairly said to have reached its acme by the end of twenty-four hours from the period of inoculation. With the inoculation of the staphylococcus aureus, more time is required. Forty-eight hours from the period of inoculation rarely finds the disease so well established as to determine its character. In the puro-mucous types of disease, where the infecting material is the well known staphylococcus albus, it is not rare to observe that seventy-two hours elapse from the period of inoculation before the definite nature of the resulting inflammation may be determined.

With these facts before us, it is not difficult to understand how Piringer was led into error in supposing that all pus from inflamed mucous membranes was of the same nature, excepting that it varied in

degrees of intensity of action, in accordance with the stage of the inflammatory process in the membrane from which it was taken.

Recognizing trachoma as a local manifestation of a constitutional infection of such mild type as, in some instances, to produce no constitutional symptoms of sufficient severity to attract attention, being characterized in the main by the local occurrence of neoplastic cells in the mucous membranes, even continuing for a long period of time without creating local discomfort, we shall be well prepared to understand the more grave feature of the trachomatous membrane after an acute inflammatory affection of the conjunctiva has run its course. And it is this complicated condition that is so well described by Stellwag as the mixed type of inflammation, partaking partly of the character described as papillary hypertrophy and partly of what he calls the pure granular condition of the conjunctiva, due to the presence of neoplasms resembling frog spawn.

If we are to be rational in our practice, we must never overlook the conditions which have brought about the morbid state we seek to relieve. In the treatment, therefore, of the so-called granular lids, it is of the utmost importance whether we have to deal with the uncomplicated state of hypertrophy of the papillary membrane following, 1, puro-mucous; 2, the golden-colored purulent inflammation; or 3, the purely gonorrheal type of local inflammation; and, whether in either of these conditions there was preëxisting trachoma in the membrane.

Uncomplicated trachoma may, in persons having an error of refraction which necessitates great strain of the eyes in reading or writing, thereby provoking continued hyperemia of the ocular structures, become a source of local discomfort by giving rise to abnormal pressure of the thickened conjunctiva upon the eyeball; otherwise it may fairly be stated that uncomplicated trachoma so rarely calls for relief, as to

escape, in a vast majority of cases, the attention of the ordinary medical attendant.

The treatment to be pursued in the ordinary forms must, of necessity, be generally stimulating and antiseptic, and in the main purely local. While the treatment of trachoma, whether complicated or not, so far as the trachomatous bodies are concerned, is essentially surgical; and to insure against return of the neoplasms, constitutional medication is, in all cases, urgently demanded.

I am thoroughly satisfied from my observation, that trachoma is *per se* the local manifestation of a constitutional infection, just as urgently demanding mercury and quinin as though it were some other form of that miasmatic infection which begets intermittent and continued fevers.

If there is any virtue in the old methods of treating papillary hypertrophy by either caustics or astringents, it has entirely escaped my observation, and I am thoroughly convinced that the mildest forms of stimulating agents, such, for example, as the yellow oxid of mercury ointment well rubbed in, and the occasional use of active stimulants of the non-astringent type, as the solution of bichlorid of mercury, $\frac{1}{4}$ grain to the ounce of distilled water, in combination with 10 grains of chlorid of sodium, or, in the pale, flabby appearance of chronic cases, the crayon of muriate of ammonium, applied by gentle pressure to the surface of the everted lid. Not one of these forms of treatment may be found sufficient to complete the cure in any single case. Sometimes the necessity being apparent for the ammonium, at other times the milder applications being indicated by the high state of vascularity of the projecting papillæ. In nearly all cases of well-characterized papillary hypertrophy, some modification of Pagenstecher's canthotomy must be done to prevent friction of the roughened surface of the lid against the cornea. It is remarkable how rapidly persons subjected to this operation may subsequently be observed to recover, under wisely

ordered local medicinal treatment. It is never wise to give to such a patient a prescription for a collyrium, or salve, to be applied at home. No nurse, however skilled or well trained, can possibly possess the discriminating judgment which would be necessary to determine the application necessary from time to time, and there is no plan by which speedy recovery may be accomplished, even by heroic agencies in the wisest and most experienced hands.

Trachomatous bodies in the conjunctiva may be removed by the process of crushing and expression with Knapp's roller forceps, which represent the two cogwheels, between which the membrane is to be caught and crushed; or Noyes' forceps, which represent two smooth rollers between which the membrane is pinched up and compressed; or, by a modification, which I have found most useful. I had Sharp & Smith of Chicago make the crushing forceps with the cogwheel in one side and the smooth roller in the other side. I press the cogwheel high up in the retro-tarsal portion of the conjunctiva, and resting the smooth roller on the palpebral surface, I carefully compress and draw forward the imprisoned membrane in such a way as to squeeze out the gelatinous contents of the trachomatous bodies.

My forceps are made of the combined qualities of those of both Knapp and Noyes. The advantages of one smooth roller and one cogwheel, or grooved roller, require no elaborate explanation. The subsequent treatment after crushing and expression of the trachomatous bodies, should consist in the use of a mild saline collyrium. A favorite formula for after-treatment is this: Borate of sodium, 15 grains; chlorid of sodium, 5 grains; mint water and camphor water, each 1 ounce; to be dissolved and filtered. This may be instilled into the eye every hour, or more or less frequently, according to the accumulating mucus, and the general sense of discomfort in the eye; the patient in the meanwhile taking small doses of quinin and bichlorid of mercury; and after ten days of this kind

of treatment, in most young people, the solution of citrate of iron and quinin after meals. Under this general plan most cases rapidly recover; of course, each individual case requires some modification of treatment suited to the peculiar conditions. Whatever plan of local treatment may be determined upon, there are two great principles of science, though commonly neglected, an exact observance of which is absolutely essential to a successful final result.

Surgical cleanliness is a term which implies something apparently beyond the possible comprehension of the average layman, and I fear there are some members of the medical profession who, though well acquainted with the conditions necessary to establish asepsis, neglectfully proceed in violation of these important rules of scientific detail.

No one but a skilled and well trained nurse may safely be entrusted to carry out the treatment of any local inflammation of the conjunctiva, whether acute or chronic, and it is practically impossible for the surgeon himself to administer the necessary treatment. These difficulties are sufficient to account for a vast number of failures in the treatment of the varying forms of the so-called granular lids. Having the patient under perfect control and constantly subject to rigid rules of personal hygiene, with a nurse whose hands are always washed immediately before instilling the collyrium or using the irrigator, never permitting the patient's hands to touch the eyes, the surgeon himself observing the most rigid discipline of his own person both before and after handling the patient, the chances of reinoculation or the fresh inoculation of some new infection is reduced to a minimum. Beside all this, the patient under personal observation as to his daily habits, can be kept in a most favorable state of general nutrition for the rapid recovery of the local inflammation. It is not saying too much, I think, to declare that nine-tenths of the cases of chronic inflammation of the conjunctiva, of whatever kind, receive frequent backsets or relapses

from reinoculation of the preëxisting infectious material, or the introduction of some new infection incident to the lack of those hygienic regulations which an institution, under the authoritative control of an experienced surgeon alone supplies.