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REPRINTED FROM THE

New York Medical Journal

for October 6, 1894.

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OPHTHALMIC SUGGESTIONS FOR THE GENERAL PRACTITIONER.*

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In this paper, Mr. Chairman, I propose to group together the symptoms which serve as a basis for distinction between the common forms of eye troubles such as often come to the notice of the general practitioner before the patients present themselves to the oculist.

Ophthalmia Neonatorum and Ophthalmia Simplex.—The discrimination between ophthalmia of the newborn, a disease fraught with peril to the integrity of the eye, and acute or simple ophthalmia, a comparatively innocuous disease, rarely presents difficulty, provided certain diagnostic points are borne in mind.

Ophthalmia neonatorum usually comes on within three

* Read before the Society of Alumni of Bellevue Hospital, June 6 1894.

days after birth, but when due to infection from soiled fingers, clothes, or sponges it may be delayed for several weeks. Clinical observation has demonstrated that there are two varieties of this greatly dreaded disease—the one, a mild form which tends to recover, not supplied with a special micro-organism, and a severe form, increasing in intensity, which invades and produces ulceration of the cornea, often with destruction of the eyeball. This variety is provided with a micro-organism—the gonococcus of Neisser. One authority states that the disease occurs more frequently in boys; my records would show the reverse to be the case; but it would seem to require the exercise of a very active and vivid imagination to attempt to establish a relation between the sex of a child *in utero* and the presence of gonococci in the vagina of the mother. The onset of the disease is generally quite sudden. A trifling discharge in the corners of the eye and a slight reddening of the conjunctiva are speedily followed by great swelling of the lids, with chemosis of the conjunctiva, pain, and a discharge which becomes profuse and very soon changes to a yellow or greenish-yellow pus. The ocular conjunctiva, on separating the lids, will be found to be greatly congested, and later often the seat of hæmorrhages. Deep infiltration supervenes on this, the swollen ocular conjunctiva forming a hard rim elevated above the cornea, which is seen bathed in pus at the bottom of a cup-shaped pit. Damage to the integrity of the eye usually occurs at this time, for this condition produces a strangulation of the nutrient vessels of the cornea, and coincidently promotes direct infection by the discharge; then larger or smaller ulcers form near the limbus usually, sometimes at the center of the cornea, which heal either by a reparative process or go on to perforation, with loss of aqueous humor, projection forward of the lens, adhesion or prolapse of the iris, and damage to

the eye, resulting in a dense white opacity of the cornea or going on to a rapid destruction of the globe by panophthalmitis, or the more gradual shrinkage of the tissues in atrophy of the bulb.

Acute ophthalmia presents a different picture. The secretion is at first thin and watery; the edges of the lids may become œdematous; the conjunctival congestion extends but part way toward the cornea, being most intense at the conjunctival reflection, and becoming less pronounced as it proceeds toward the limbus. Only in extreme cases does the conjunctiva assume the velvety appearance observed in neonatorum. The secretion soon becomes mucopurulent or simply mucoid, depending upon the grade of inflammation, and either gathers at the commissural angles or, if more profuse, mats the eyelashes, and drying seals the eyelids together. Grouping the symptoms in parallel columns, we find—

OPHTHALMIA NEONATORUM.

Is caused by the introduction of infectious materials from the genito-urinary passages of the mother, or is started from careless bathing of the child after birth. Soiled sponges, clothes, or soiled hands conveying virulent lochial discharge may be responsible for an attack. Infection is likely to be often observed to follow retarded labors, and may occur in face presentations.

OPHTHALMIA SIMPLEX.

Most frequently found during changeable weather, but it may arise from irritant substances in the air reaching the eyes, as dust or tobacco smoke.

Except in very mild cases the gonococcus of Neisser is present.	Only in very severe cases is a micro organism demonstrable. If only one eye be affected, and the discharge be very profuse, the cause is undoubtedly an as yet undetermined micro-organism.
Said to be more common during the summer in cold climates, while in hot climates the spring and autumn seem to be the favored seasons.	May occur at any time, but is perhaps more frequently observed in the spring and autumn months.
Commonly begins about three days, but has been seen within eighteen hours after birth, and it may not appear for several weeks.	May begin at any time.
Often begins in one eye and spreads by contagion to the other; but the unaffected eye escapes if early sealed by a shield consisting of a watch glass fitted into a perforation in a square piece of rubber plaster, which is carefully applied to the brow, side of the nose, and lower margin of the orbit, leaving the temporal side free for ventilation.	Generally begins in one eye and spreads to the other, even though the unaffected eye be sealed from possible contagion.
Conjunctiva is at first slightly reddened and a small discharge is perceived	Conjunctival congestion varies in degree, almost never assuming the velvety

at the angles, which discharge rapidly changes to a yellow or greenish-yellow pus, sometimes remaining pent up in the conjunctival *cul-de-sac.*

Congestion of the conjunctiva is coincident with the infiltration and elevation of the hardened conjunctival rim surrounding the pit at the bottom of which the cornea may be seen.

Lids swell up rapidly and become hot, tense, and red.

Milder form usually goes on to recovery without damage to the eye, but in the severe form, even under the most judicious treatment, the eyeball may be destroyed, although at times careful and unremitting treatment will produce a most gratifying result.

appearance seen in ophthalmia neonatorum, but is made up of dilated and tortuous vessels, the redness increasing as we approach the lids and decreasing as we near the cornea. The tarsal conjunctiva and the retro-tarsal and semilunar folds are affected; rarely does the congestion involve much of the ocular conjunctiva.

The discharge rarely appears until the second day, and then it is watery; after another twenty-four hours it becomes muco-purulent or mucoid.

Lids rarely swell up, except as a result of injudicious treatment, the result of "meddlesome domestic medication."

Under proper treatment this goes on to complete recovery.

Hordeolum and Chalazion.—The discrimination between hordeolum or stye and chalazion or Meibomian cyst, sometimes called tarsal tumor, should present no difficulty, and yet errors in diagnosis are by no means uncommon. A stye is a small furuncle on the margin of the lid, and is the suppuration of a gland or of the cellular tissue subjacent to the gland, having its seat usually in the vicinage of the hair follicles. A chalazion, on the other hand, is a cyst due to chronic inflammation of a Meibomian gland and of the tissue surrounding it. It begins by a retention of the Meibomian secretion, due generally to a plugging up of the duct, and is situated deep in the tarsal tissue. Its growth is slow, and it is usually firm in its attachment to the tarsus, the skin being freely movable over it. When hordeolum or chalazion shows a tendency toward recurrence the probable cause is an ametropic eye, which demands for its relief properly fitting glasses. In parallel columns we differentiate between these troubles as follows:

HORDEOLUM.	CHALAZION.
Onset sudden, although there may be a period of one day's lid irritation as a prodrome.	Growth is very gradual.
Lids hot, red, tender, and painful.	No heat, redness, or pain.
Situated at the margin of the lid.	Situated on the tarsus, at some distance from the edge of the lid.
Skin is usually tense over the swelling.	Skin freely movable over the swelling.
Speedily shows a yellow cap and points in the edge of the lid, often surrounding an eyelash.	Rarely points, and when it does so, the prominence is near the center of the lid.

Keratitis, Iritis, and Glaucoma.—The greatest difficulty in diagnosticating ophthalmic diseases arises in distinguishing between keratitis, iritis, and glaucoma.

An injection at the limbus of fine, straight, and immovable vessels, but which can be emptied by pressure, with or without the dilated and tortuous vessels of the conjunctiva (conjunctivitis), limited to one side, usually indicates the presence of a foreign body on, or an inflammatory process of, that side of the cornea. Central keratitis is accompanied by circumcorneal injection extending over the sclera for a short distance only; its color is pinkish, and close examination shows this to be due to the presence of very fine and straight vessels. Further investigation reveals a phlyctenule, ulcer, etc., which demonstrates the existence of corneal inflammation, the subjective symptoms of which include blepharospasm, photophobia, excessive lacrymation, dimness of vision, and pain. In iritis we usually have a train of symptoms which are almost pathognomonic. Pain is of early occurrence, first in the globe — ciliary neuralgia — soon extending to the branches of the trigeminus, especially those distributed to the forehead, temple, and upper jaw; sometimes there is hemicrania. The pain is always most severe at night, often preventing sleep, and diminishing in intensity in the morning. Impairment of sight, intolerance of light, and lacrymation are in direct proportion to the severity of the attack. The objective symptoms are circumcorneal injection, forming the "iritic corona," some conjunctival injection, a partly contracted pupil only slightly responsive to light stimulus and to mydriatics, its edge dull and thickened; the surface of the iris is muddy and soggy, having lost its natural brilliancy and changed its color, a blue iris becoming a dull gray and a hazel changing to a dirty brown. Local swellings from exudates produce irregularities on the

surface of the iris; the cornea becomes steamy and the aqueous more or less turbid. Later there are attachments between the iris and the anterior capsule of the lens, which can be readily detected by using a mydriatic, and which are decisive indications of iritis. When tenderness of the eyeball occurs it suggests inflammation of the ciliary body.

Whenever possible glaucoma should be recognized at its very inception, for its result, total and irremediable blindness, makes it at once the most serious as well as the greatest feared of ophthalmic troubles, whereas its timely treatment will often yield most favorable results.

It sometimes comes on in an extremely insidious fashion, there being a varying prodromal period. Rapid increase in presbyopia, causing very frequent change in glasses for reading; iridescent vision, consisting of a halo around lights, the outer ring being red and the inner one bluish green, with increased tension of the eyeball, form a tripod of symptoms upon which rests the diagnosis of this dangerous malady. These symptoms become intensified; the cornea becomes steamy, like glass that has been breathed upon; the anterior chamber becomes shallow, and the pupil partly or fully dilated and sluggish to light stimulation, while the increased tension of the globe becomes more pronounced, often reaching a stony hardness. The acute form is characterized by intolerable pain in the ball the tension is markedly increased, reaching up to + 2 or + 3; the eyelids are swollen; there is a marked conjunctivitis; the cornea is anæsthetic and steamy, the aqueous is turbid, and the iris often is discolored; the pupil is irresponsive and partly or fully dilated. The other symptoms are found within the eyeball, can only be determined by using the ophthalmoscope, and consequently have no place in this paper. An attack may eventuate in blindness, or

the symptoms may pass away, leaving only a slightly increased tension and moderate impairment of the movements of the iris. Succeeding attacks occur at irregular intervals, and in unoperated cases blindness is the final result, the eyeball passing into absolute glaucoma, the episcleral vessels coarsely injected, sclera discolored, cornea opaque or discolored, iris atrophied, lens opaque and pushed forward, and the globe of stony hardness, followed by disorganization of the tissues of the eyeball and the formation of staphylomata, or by atrophy of the globe.

Collating the symptoms of keratitis, iritis, and glaucoma, we find that they can be arranged in parallel columns as follows, and for purpose of comparison the symptoms of conjunctivitis, often mistakenly treated for iritis, are also placed in a column :

CONJUNCTIVITIS.	KERATITIS.	IRITIS.	GLAUCOMA.
A feeling as if a foreign body were in the eye.	General irritation, variable in degree.	Severe pain in the globe passing into trigeminal neuralgia.	In severe cases, pain in the globe.
Enlarged and tortuous vessels.	Diffuse congestion of conjunctival vessels and pericorneal injection.	Circumcorneal injection.	
Photophobia absent except in severe cases.	Considerable photophobia and blepharospasm.	Photophobia rarely severe.	No photophobia.
Conjunctiva swollen, sometimes chemotic.	Conjunctiva clear, but in severe cases may be chemotic.	Conjunctiva clear, but it may be bathed in tears.	Only in the severe form is the conjunctiva congested.
No special tenderness of the eyeball.	No special tenderness of the eyeball.	Pressure shows some tenderness of the eyeball.	No special tenderness of the eyeball.
Muco-purulent discharge.	More or less lacrymation.	No discharge; but there is increased lacrymation.	Sometimes an increase in the lacrymation.
Pupil unaffected.	Except other structures be involved the pupil is unaffected.	Pupil sluggish and immobile.	Pupil partly or fully dilated, slightly responsive to light. Late in the case the pupil assumes a greenish hue, the anterior chamber being shallowed or entirely abolished.
A mydriatic acts normally.	A mydriatic acts normally.	The reaction to a mydriatic is slow and abnormal.	A mydriatic should never be used.
Iris unchanged in color.	Iris unchanged in color.	Iris more or less changed in color, a blue iris becoming gray and a hazel changing to a dirty brown.	Late in the case the iris is markedly discolored, and may be atrophied.
No synechia.	No synechia.	There may be posterior synechia.	No synechia.

As the deservedly high position held by conservatism in the practice of medicine and surgery is due largely to the observance of what *not* to do in the treatment of disease or injury, this brief paper will be brought to a close by giving the "don'ts" in the treatment of ophthalmic troubles.

Don't poultice an eye under any circumstances whatever. Binding a wet application over an eye for several hours must damage that eye, the assertions of those professing to have personal experience in this to the contrary notwithstanding. The failure to aggravate an existing trouble by binding a moist application over an inflamed eye, which application is supposed to remain for an entire night, can only be explained by the supposition that a guardian angel has watched over that misguided case, and has displaced the poultice before it had got in its fine work. All oculists condemn the poultice absolutely, in every shape and in every form. Tea leaves, bread and milk, raw oysters, scraped beef, scraped raw turnip or raw potato, and the medley of disgusting domestic remedies popularly recommended are, one and all, capable of producing irremediable damage to the integrity of the tissues of the visual organ.

Don't forget in the examination of an eye that the vascularity of the eyeball may furnish valuable information. Large, tortuous, anastomosing, brick-red vessels, forming a network freely movable, increasing in intensity as we approach the eyelids and diminishing as we approach the cornea, are indicative of conjunctival inflammation. A rose colored belt around the cornea, diminishing as the eyelids are approached, formed of fine straight vessels, radiating in a parallel direction, designate an inflammation of the cornea, iris, ciliary body, or chorioid. This is what is commonly called the circumcorneal zone or the iritic corona,

the vessels being mainly venous and situated in the episcleral tissue. Then there is an irregular patch of congestion on the sclerotic, a livid red or bluish red, indicating episcleritis or scleritis.

Don't allow a nurse to wash out the eyes of patients with ophthalmia neonatorum or gonorrhœal ophthalmia until you have shown how this should be done.

Don't press upon the eyeball, but *upon the edge of the brow*, in separating the eyelids, in any case of corneal ulceration occurring in the course of keratitis, ophthalmia neonatorum, or gonorrhœal ophthalmia, as such pressure can easily cause a perforation of the cornea, extrusion of the lens, and sometimes loss of a considerable quantity of the vitreous humor.

Don't forget that incised or perforating wounds in the ciliary region are most dangerous, and often call for the enucleation of the injured eye to prevent the development of sympathetic ophthalmia in and loss of the sound eye.

Don't prescribe for an inflamed eye until you have tried the tension of the balls, searched for a foreign body caught under the lids or lodged on the cornea, and examined to see if there is any implication of the iris or cornea.

Don't use lotions containing lead water in any case with abrasion of the corneal epithelium, as particles of carbonate or oxide of lead become deposited at the site of these abrasions and produce irremovable opacities.

Don't use alum lotion in any case with abrasion of the cornea, as it has the power to dissolve the cement of the cornea, and to provoke a deep and dangerous ulcer.

Don't use eserine or pilocarpine in an eye that is the seat of an iritis, and don't use a solution of eserine in any usual case stronger than from half a grain to a grain to the

ounce. Stronger solutions have set up attacks of troublesome iritis.

Don't use atropine without testing the tension of the globe, and without proper care as to the strength of the solution employed in the old and the very young.

50 West Thirty-sixth Street.

The New York Medical Journal.

A WEEKLY REVIEW OF MEDICINE.

EDITED BY

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Subscription price, $5.00 per annum. Volumes begin in January and July.

PUBLISHED BY

D. APPLETON & CO., 72 Fifth Avenue, New York.