POLLAK (S.)

REPORT OF A CASE OF

OPHTHALMIA ALBUMINURICA.

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WITH A REPORT ON THE HISTOLOGICAL EXAMINATION OF THE EYE.

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OPHTHALMIA ALBUMINURICA.

BY S. POLLAK, M. D., ST. LOUIS.

There is much in a diagnostic name which will surprise the reader, who may intuitively express a doubt as to its correctness. This surprise and doubt cannot be greater than my own. I refrained from making it until after many days of careful and assiduous observation, the conclusion forced itself upon me. In active ophthalmic practice, both clinical and private, of one-third of a century, I never met a parallel case, nor could I find one similar to it in the literature, whether foreign or domestic, within my reach.

Two of my esteemed colleagues saw the case with me, unfortunately not early enough, when the peculiar features were very demonstrative and unmistakable, but which they had to take on trust from me. When they were related to them in the presence of Clara's very intelligent mother, they both acknowledged never having seen any case just like it, or met with it in their readings.

I am fully prepared for, and earnestly invite the critical

judgement of, the active and intelligent workers in the field. A total loss of sight was manifest at my very first visit, a fatal result to her life, was once seriously apprehended, which, however, was happily averted.

I shall now proceed to give briefly the history of the case.

January 2, I was called to see Clara Harris, aged 7 years, the oldest child of very healthy parents, a bright and favored pupil of the public schools. She had enjoyed perfect health until the day after Christmas. It happened that her mother took her to a church to see a richly illuminated Christmas tree, the church was densley packed so that she could not get farther than the ninth or tenth pew from the door. This was the coldest night of this winter, the temperature ten degrees below zero. Clara was well enough wrapped, but the constant opening and closing of the door made her feel cold. She slept well that night, but next morning she asked her mother to let her sleep a little longer. She remained in bed that day and also the next day, complaining of being tired. Thursday, the third day, she cried out: "Mamma, the house is on fire." The mother tried to quiet her, but she insisted "the house is on fire; don't you see everything looks red?" She became restless, had some fever and a slight cough. The family physician, a very able man, was sent for. He saw her diligently for several days. He thought the hallucination was probably caused by some meningeal irritation. She grew worse, fever increased, but no more hallucinations. Not until Monday, the second of January, was it noticed that though she did not open the eyes, she shielded them always from the light. The lids were forcibly separated, and the physician saw at once that the eyes were seriously implicated. He directed that an oculist be sent for. I saw her Monday after dark; found temperature 103, pulse 112, tongue very coated, the buccal cavity filled with glary, tenacious mucus, which she in vain tried to expectorate. It had to be literally drawn out in long streaks by means of dry cotton or a piece of cloth, which was immediately consigned to the fire. This had to be repeated nearly every five minutes. There were no deposits left on the tonsils and fau-

ces. She could breathe and swallow without trouble; no cough. Thirst great, appetite none, bowels constipated, abdomen not tender nor tympanitic. Urine scant, skin dry. After this general examination, the condition of the eyes was looked into. The lids looked normal, she could but would not open them, but when I separated them I recoiled. *I saw only a perfectly chalky white globe, resembling nothing so much as the opening boll of a cotton plant*; cornea and sclerotic both perfectly white alike, the line of demarcation between them obliterated, a slight polish of the cornea made the only distinction. Not the smallest bloodvessel was seen. Conjunctiva moveable, not chemosed; tension normal, ball rather anæsthetic. No trace of the iris to be seen. The anterior chamber seemed to be filled with a white homogeneous substance, whether fluid or semi-solid indeterminable, neither was it certain that the parenchyma of the cornea was not involved. Motions of the eye unaffected, but there *was not the least perception of light.* The anæsthesia of the eye and of the surroundings rendered handling them easier. Yet, with all this, there was photophobia, for she always wanted to have the lamp removed. The same condition in both eyes alike. I was very much at a loss about the diagnosis. I only knew that she was totally blind, but whether from an organic disease of the eye or from a metastasis of some strongly saturated opaque fluid, and that what of and where from, I could not tell. She complained only of the trouble which the ever recurring accumulation of tenacious mucus in the buccal cavity gave her, which provoked slight cough, nausea, and the absolute necessity of drawing it out.

While a diagnosis had to be left in abeyance I had to institute therapeutic measures, partly with the object of giving relief and partly to arrive thereby at a diagnosis.

I ordered bathing the eye with absorbent cotton dipped in *hot* water every hour, which she seemed to like and called for often. Instilled into the eye atropine sulph., gr. iv to ℥j; one drop hourly until I could get a sight of the pupil. *Internally*, a triturate of calomel gr. $^1/_{10}$ every hour, rincing the mouth with strong solution of boracic acid. She slept well that night,

even the regular application of the above treatment did not rouse her. For the next two days the condition and the treatment was unchanged. Thursday, I learned that her bowels had been freely moved,and the buccal mucorrhœa was considerably less, but temperature yet 100, pulse 96. The mother also succeeded in furnishing me with some urine voided during the night, which on testing showed specific gravity 1024, was very acid, and on boiling a large quantity of albumin coagulated, so that on cooling nearly one inch of it remained in the test tube.

The albuminous urine furnished the first clue for a reasonable understanding of the case. I inferred therefrom that the exposure on Christmas night to a temperature of ten degrees below zero, caused an *acute nephritis and general albuminuria*, which by metastasis found a suitable soil in the eye, saturated strongly the aqueous humor and, perhaps made deposits of albumin on the tissues of the eyes. I made no change in the local treatment but suspended the triturates of calomel, and substituted the following:

℞ Acetate of Potassium, - - - ℥ss.
Tr. of Digitalis, - - - - ℥j.
Water, - - - - - ℥iij.
M.
Sig. Dessertspoonful every two hours.

The effect of this change of treatment was promptly manifested by the lowering of the sp. gravity of the urine, diminution of of the albumin, and of the acid. On the other hand a notable increase in the quantity of urine, also an abundant perspiration set in. Not until Jan. 12, the tenth day of my attendance, did I discern the slightest change about the eyes. That day the chalky white cornea of the right eye became opalescent at the apex. This portion became even translucent the next day. This gradual clearing up from the center to the periphery of the cornea progressed with every succeeding day, until the pupillary margin of the iris came in view. The same clearing up process now commenced also in the other eye, and kept it up in proper ratio, so that in about two weeks both corneæ

were clear and the pupils dilated ad maximum, and yet not the least perception of light. The ophthalmoscope disclosed an opaque fundus; optic papilla and retinal vessels were not discernable. The external aspect of the eyes was normal, except mydriatic pupils.

In the meantime the general health had greatly improved. Temperature, pulse and respiration normal. The mucorrhœa and albuminuria entirely subsided. Her physical condition good, except the total absence of sight, and no change in the fundus of the eyes. I substituted now:

℞ Bichloride hydrarg., - - - - gr. j.
Potassi iodide, - - - - ℥ss.
Water, - - - - - - ℥vj.
M.
Sig. Teaspoonful every four hours.

I hoped thereby to effect the absorption of a probable albuminous deposit on the retina and other tissues of the eye. I made daily ophthalmic tests, both with direct and oblique illumination, but always with negative results.

Up to February 10 the condition of the eyes remained stationary, but a most unexpected change now set in, and the disease in both eyes assumed a new phase. That day, the conjunctiva of the right eye became hyperæmic,not chemosed, and the eye lachrymated a good deal; the pupil became smaller, though still under the use of mydriatics, the balls seemed to protrude, and for the first time she complained of bulbar, circumorbital and occipital pains. The pupil of the left eye became oblong, the anterior chamber very shallow, the capsule of the lens opalescent, but no pain. The motility of either eye somewhat impaired. All these symptoms were more intensified the next day, especially the protrusion of the right eye. This new inflammatory process was a painful surprise to me. My expectations of regaining a moderate amount of sight were always very feeble, and these were ended now. Panophthalmitis had set in in the right eye, and to save the form of it or even her life became now a paramount question.

I will here mention that Dr. Wolfner, who had just returned from a year's visit to the great clinics of Europe, saw her with me,and stated that he never saw a case like it, nor did his reading acquaint him with one, as he wrote me a few days later. My friend Dr. Alt also accompanied me to see this extraordinary case when the characteristic whiteness had totally disappeared, and declared he never saw or read of one parallel to it. The prominent symptoms at that day were entirely different, as if they were those of another patient with no relation to what I dealt with so long. It presented now a clear *painful panophthalmitis*, with high tension, considerable exophthalmus, with a yellowish white glistening fundus, limited motility, high temperature, rapid pulse, with life in danger. A glioma of the retina, or a retrobulbar tumor seemed to be present. Enucleation of the eye was considered indicated in order to save life. The intelligent mother yielded to the suggestion. I removed the eye, aided by my clinical assistant Dr. Keene, and gave it to Dr. Alt for microscopic and bacteriological examination. He preserved it in Mueller's solution for hardening.

My health was somewhat impaired in consequence of an attack of the grippe in January. I had to go South, to Cuba. On my return in April, I went to see little Clara, found her up and about, enjoying perfect health. The hyperæmia of the left eye, which also threatened to become like its mate, had subsided, but she is totally blind with a cataractous lens, distorted pupil and posterior synechia.

Having given a faithful and succinct history of this very strange case, I now appeal to the enlightenment and experience of the medical profession for a free and candid expression of their views on the following points:

1. Am I correct in crediting the exposure to the intense cold of Christmas night with causing the acute nephritis and rapidly ensuing albuminuria?

2. Was it ever known that amblyopia would develop in three days after any other cause but traumatism? I take it that Clara's statement that everything in the room looked *red* was an

actual fact, not a hallucination. It is known that a slight hæmorrhage in the vitreous body will cause a red reflex to every object in the field of vision, which does not subside until complete absorption of the blood has taken place.

3. Am I coincided with in ascribing the chalky white appearance of the cornea to the metastasis of albumen into the aqueous humor, and not into the parenchyma of the cornea? The eyes never exhibited any phenomena of inflammation nor redness, pain and swelling, yet she was totally blind, without an appreciable organic change.

4. The adage "*post hoc ergo propter hoc*" was proven in this case. In proportion as the quantity of albumin in the urine decreased, and micturation and activity of the skin increased, the density of the opacity of the cornea diminished, and when the urine became clear, transparency of the cornea ensued.

5. Was the subsequent advent of panophthalmitis in the right eye a mere coincidence, or the result of a new inflammatory process, or was it due to the agglutinated condition caused by the presence of albuminous deposits?

6. Did the timely enucleation of the right eye save the left eye from a destructive sympathetic ophthalmia? for from that moment not only the left eye but the general health commenced to improve rapidly.

7. Will I be credited with having described a faithful and not an exaggerated picture of the case? Those who know me will vouch for it, but with the large majority, to whom I am a stranger, a doubt might arise on that score.

I am also aware that this report is not made in a standard classical style, but I trust it bears the stamp of honesty and truth in every line of it.

CROUPOUS IRIDOCHOROIDITIS.

Remarks to Dr. S. Pollak's Case.—Results of the Histological Examination.

BY ADOLF ALT, M. D., ST. LOUIS.

On February 11, 1893, I saw C. H., with Dr. Pollak. She was then considerably emaciated and weak. There was fever and the pulse was somewhat fast and small. There was some exophthalmus. Photophobia rendered the illumination of the eyes very irksome to the patient. There was a great deal of episcleral injection of the eyes. The corneæ were clear. The right eye showed a large, irregular pupil, behind which a partially dim lens was seen. Iris and lens were almost pressed against the cornea by a yellow lobulated substance. V.=0; tension increased. The condition of the left eye differed but immaterially from the right one and its tension was not as high. The possibility of glioma having attacked both eyes was discussed, and the higher tension of the right eye prompted the decision of its enucleation. The chief point, if there was no glioma, was to find an explanation for the clinical symptom of the cotton-ball-like appearance of the eyes at an earlier period, as described by Dr. Pollak.

When the well hardened eyeball was opened, no tumor presented itself, and what appeared behind the lens was seen to be the totally detached retina firmly united with cyclitic newformations. The posterior chamber is totally obliterated; that portion of the anterior chamber which corresponds to the iris-angle is filled with a uniformly transparent gelatinous substance, while in the pupillary area the lens lies close to the cornea and obliterates this portion of the anterior chamber.

The space between the solid strand of the detached retinal tissue, which runs from the optic nerve forward to the cyclitic membrane, and the swollen choroid and also the suprachoroidal space, are filled with congealed exudation. Upon the inner surface of the choroid yellowish masses are deposited in thick layers and in smaller lumps. These masses are thicker near the ciliary body than in the posterior portions.

Microscopically the changes are peculiar in the uveal tract only. The iris and ciliary body are so filled with round cells that their normal tissue is almost invisible. The choroid is many times its normal thickness. Its inner parts (choriocapillary layer) are made up solely of round cells, which are severed from the exudation lying inwardly by the lamina vitrea. Its outer parts (venous layer) and the suprachoroidal tissue and space are filled with a *network of fibrine* containing the remnants of the normal tissues and round cells. This peculiar network reaches forward on the outer surface of the choroid and the ciliary body to the insertion of the latter into the corneo-scleral tissue.

This condition resembles closely that found in the lungs in croupous pneumonia, and the spongy exudation in the anterior chamber seen in some cases of iritis. The latter I described years ago, and considered it as the result of a *hæmorrhagic* iritis, as the iris was filled with hæmorrhages in the case I had examined microscopically. Dr. S. M. Burnett afterwards called the iritis with spongy exudation into the anterior chamber *croupous* iritis. In the case under consideration a croupous cyclitis and choroiditis still existed when the eyeball was enucleated. I think, therefore, that it is not too far-fetched to explain the strange clinical aspect, described by Dr. Pollak, as produced by spongy (croupous) exudation in both anterior chambers due to *croupous iridochoroiditis.* When I saw the case this exudation, as it always does, had melted away and had been mostly absorbed. There were, also, no hæmorrhages visible.

I do not remember ever having seen such a general croupous inflammation of the uveal tract in man.

I have seen it, however, as the result of the experimental injection of jequirity infusion into rabbit's eyes, corresponding in all its details to the condition of the eye under consideration. (See this Journal, Vol. I, No. 4, page 97, et ss.). The croupous membrane produced by jequirity on the conjunctiva looks microscopically exactly like it.

In retinæ with albuminuric retinitis due to chronic nephritis a similar croupous exudation is often found lying in small cavities within the retinal tissue. In the eye under consideration the retina, however, is free from any such exudation.

In order to study the bacteriological side of the question both Dr. L. T. Riesmeyer and I stained with methyline blue and after Gram's method, a considerable number of specimens taken from the yellow masses which were deposited upon the inner side of the choroid. I also stained in the same manner a number of sections of the tissues of the eye. In all of these specimens we found micrococci. They are, however, more numerous in the exudations than in the tissues, yet I found them also in the tissue of the choroid. These micrococci are usually arranged in clusters, and do not seem to differ from the staphylococcus pyogenes aureus. Besides these clusters a large number of cocci lie singly or in small groups of three or four disseminated through the exudation. I have found none in the other tissues of the eyeball.

From the history of the case it would then seem that we had to deal with a *croupous nephritis* and a *croupous iridochoroiditis*, perhaps both due to the immigration of the same microbe, which in the eye resembles most to the staphylococcus pyogenes aureus.

Choroiditis with spongy exudation has been clinically seen once by Knapp. I do not know that it has ever been histologically described in man.