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Contributors

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UNILATERAL ALBUMINURIC RETINITIS; WITH REPORT OF A CASE.

By WALTER L. PYLE, A.M., M.D.,

of Philadelphia.

Assistant Surgeon to Wills Eye Hospital.

IN cases of albuminuric retinitis the lesion is usually bilateral; some authors say that it is invariably so. It must be remembered, however, that the reports of such cases are from oculists, who generally see the patients in the advanced stages of the disease, when it would be natural to find bilateral involvement. A review of the literature of this subject shows that the unilateral cases are not so rare as the textbooks imply. In fact, there is strong reason to believe that many one-sided cases have not been reported as such, the inference being that the unaffected eye would soon follow, and the case has been dismissed with no other comment than a hopeless prognosis. I have spoken to a number of my friends about this anomaly, and several have told me that they had seen the unilateral affection, but none could say whether the other eye remained healthy, although one gentleman assured me that in one instance the patient was living several years after he had seen the affected eye. None of these cases had been deemed worthy of further observation and report.

Knies¹, who has made an exhaustive study of this subject, says that unilateral albuminuric retinitis is not uncommon. In his analysis of 103 cases, C. S. Bull² remarks that there were 10 cases of unilateral affection that remained so until the end of the patients' lives. Unfortunately, in none of these cases are there au-

topsy-records. In a private communication to de Schweinitz, Bull says :

"It is, perhaps, pertinent to state that in these 10 cases the renal disease was severe in its onset, and rather rapid in its progress, and none of them lasted longer than 5 months. I have now under observation a case of nephritic neuroretinitis, confined to one eye, which has lasted 8 months, and the other eye is, *as yet*, intact."

de Schweinitz³ has reported two cases, in one of which the patient was lost to observation after the first examination. The other case was in a negro of 51, who, up to time of report, had been under observation 6 months, during which time repeated clinical examination indicated a typical case of interstitial nephritis. The fundus-changes were characteristic of the hemorrhagic type of albuminuric retinitis. While the man was being treated the areas of hemorrhagic extravasation decreased, with the development of larger areas of degeneration, and well-marked lines of perivasculitis. Vision in the affected eye at the time of report was $\frac{6}{15}$, and $\frac{6}{4}$ in the left eye, which continued normal in appearance. In a review of the literature, de Schweinitz mentions cases of Despagne,⁴ Yvert,⁵ Brunet,⁶ Cheatham,⁷ Eales,⁸ and Bull. In all these cases it is implied that one eye was perfectly normal. In Yvert's case there was "characteristic" left-sided albuminuric retinitis in a man of 48. At the autopsy only the right kidney was found, and it was in a state of parenchymatous inflammation. In Brunet's case there was right-sided albuminuric retinitis, with right-sided anasarca. In Eales' case there was left-sided retinitis, the visual disturbance appearing one day after an injury to the left loin. Casts were not found in the urine, and the albumin disappeared.

Hasbrouck⁹ reports a case in which the left eye was affected with retinitis for over 3 years, during which time the patient had albumin in his urine constantly.

The right eye never became affected. Notwithstanding his long-continued nephritis and several minor ailments, the patient was able to do his work fairly well for one of his age—62 years.

The cases of de Schweinitz, of Hasbrouck, and my own presented similar appearances, and the initial lesion was undoubtedly in the bloodvessels. From the peculiar venous picture in his second case de Schweinitz was led to believe that the primary lesion was thrombosis of a venous branch rather than a true retinitis. He states that he suspects that in some of the other cases reported as unilateral neuroretinitis the same lesions may have been present, and he quotes in evidence Knies, who has seen hemorrhage into the optic nerve of one eye, with blindness, in a case of albuminuria, followed in one year by a pure hemorrhagic retinitis in the opposite eye. De Wecker¹⁰ says that there are certain forms of retinitis attending nephritis that appear merely as simple hemorrhagic retinitis, but in the vast majority of cases true nephritic retinitis is characterized by the appearance of patches of fatty degeneration either connected with or independent of old-standing clots. He adds that, while cases of simple apoplectiform retinitis are not infrequent in which the affection is limited to one eye or does not attack the second until late, true nephritic retinitis generally commences simultaneously or within a short interval in both eyes. These statements are certainly the most definite in the literature of the subject, and are borne out by all three of the most recently reported cases in this country. Although the terms "characteristic" and "true" are rather vague, there being such a diversity of picture in albuminuric retinitis, yet we can say that none of the three cases was the result of primary inflammation in the nervous structures, but rather the effect of a considerable hemorrhage.

The history of the case under my care is as follows:

The patient is a well-built man of 49, with a good family-history. In his early manhood he was especially vigorous; and there is no specific or alcoholic history. In 1893 he was annoyed by neuralgic pains in the back and loins, and general prostration, and presented himself at the office of a well-known local physician for treatment. An analysis of his urine revealed a specific gravity of 1020, marked acidity, granular casts, and an albuminous ring "half as thick as a penny." He was ordered salol, salines, and special diet. Through some slight disagreement as to treatment the patient left his first physician and consulted a homeopath at Atlantic City, N. J., in the spring of 1893. At this time he was considerably worse, and he began to feel his neck gradually becoming stiff. In view of his advanced renal disease, and his poor physical condition, the second physician ordered him to take the mud-baths at Langenschwalbach, Germany, whither he went in September, 1893. From then on to the last of October, his German attendant made repeated analyses of the urine, invariably reporting the presence of albumin and casts. The mud-baths closing in October, the man spent the remainder of the winter in Southern Europe without medical advice.

After leaving the baths, the patient went to Frankfort, and while there experienced what was evidently the first ocular manifestation of his nephritis. While sitting on the hotel-porch one morning late in October, 1893, he noticed that a curious sign across the Schillerplatz to his left, ordinarily in his field of vision, was absent. He then discovered that the extreme left of his field was nearly or completely dark. For 10 days this state of affairs annoyed him, but as he was not embarrassed in his working-vision, and being tired of physicians, he did not consult an oculist, and the matter passed out of his mind. He did not realize that his left eye was worthless until I saw him in January, 1898, nearly 5 years later.

By December, 1893, the patient's neck was completely ankylosed, lateral movement was abolished, and only a slight up-and-down movement has since been possible. In April, 1894, he returned to this country, and early in 1895 he consulted a third physician, who reported the presence of albumin in the urine. The man remained under treatment until the end of 1895. He then stopped all medication and dietetic precautions. In January, 1898, he was attacked with an acute inflammation of the right eye, and returned to his first physician, by whom I was called in consultation. I found a typical case of iritis, with the iris immobile and bound down by posterior synechiæ. After several instillations of atropin and cocain I managed to obtain full mydriasis. Small black remnants of the synechiæ were plainly visible on the anterior

capsule of the lens. We instituted strict dietetic treatment, and administered potassium iodid and sodium phosphate, as well as the routine treatment for the iritis, which was exceedingly painful. The aqueous of the affected eye soon became so cloudy as to obscure vision, and it was then that the patient really became conscious of the condition of his left eye. Ophthalmoscopic examination soon revealed the cause of the trouble. The course of the iritis covered about 6 weeks, and terminated in full recovery, the patient having normal vision with $+0.25$ C. axis 90° .

At present, the vision of the left eye is $\frac{4}{10}$, exceedingly variable, and improved by looking to the left of the test-letters rather than directly at them. It is unimproved by glasses, and retinoscopy does not reveal any considerable defect—the eye is practically emmetropic. The pupil reacts normally to light, and accommodation, but under homatropin and cocain it dilates unevenly toward the nasal side. The field of vision is slightly contracted on the temporal side, but paracentrally there is an area of dull vision, in which white is very indistinct, and colors are not at all recognized. On the nasal side the field is contracted to within the 30° circle. Vision for red is markedly contracted in the entire field.

Ophthalmoscopic examination shows the following changes: The disc is somewhat congested, but still clear in outline. The veins seem dilated out of proportion to the arteries. The upper temporal vein and artery are much diminished in size. No pathologic condition is noted on the nasal side of the fundus. Immediately over the disc, about two disc-diameters distant, is an irregular white spot of degeneration, evidently an old hemorrhage, about the size of the disc. Extending obliquely downward along the bloodvessels to the macula are several small white patches, indicative of previous hemorrhages. The macula is slightly encroached upon on the side toward the disc by a large spot of degeneration. There is a similar spot on the temporal side, which, however, does not touch the macula. Examination of the visual field shows a paracentric area of dim vision, slightly to the temporal side, which corresponds exactly to the fundus-findings.

At present the patient is in good health. For six months he has been extremely cautious about his diet, depending now chiefly on milk for sustenance. Early in the summer, urine-analyses showed an excess of urates, and invariably the presence of albumin. The amount of urine passed daily is about 50 ounces. The sole medication now is hydriodic acid.

The rapid onset of the ocular symptoms and the present fundus-condition show that the starting-point was undoubtedly in the vessels, and the case is of the

type usually designated hemorrhagic albuminuric retinitis. The other eye is and always has been fully normal, which precludes the possibility of its participation in the affection by hemorrhage or degeneration in the papilla undiscoverable by the ophthalmoscope, such as has been found postmortem by Poncet¹¹ and Duke Karl Theodor.¹²

In regard to the etiology of unilateral albuminuric retinitis de Schweinitz recalls that various theories have been proposed. Yvert explained his case by assuming that the single diseased kidney, its fellow being entirely absent, caused an irritation of the sympathetic nerve of one side only. He based this explanation on the opinion of Potain, who believed the unilateral anasarca of nephritis following contusion of the kidney, and also attending nephritis without such history, to be due to an abnormal action of the sympathetic nerve. Eales, whose patient also suffered from an injury of the loin, with rapid albuminuria and unilateral retinitis, accepts Yvert's explanation as the most plausible under the circumstances.

If, as in the case of Yvert, one kidney alone is diseased, there is reason, but not proof, for the inference that in unilateral nephritis the retinitis will be unilateral.

Again, cases of nephritis have been reported in which life has lasted many years after the appearance of retinitis. Haab has seen such patients live as long as 13 years. According to Belt, Stevens has seen a case of 11 years' duration; Callan, one of 9 years; Noyes, one of 10 years; and Webster, one of 17 years. In such cases as well as with long-standing nephritis without retinitis, there is equal reason to suppose that only one kidney is diseased, its normal fellow supplying sufficient renal function to maintain life and even fair health if dietetic precautions are taken. However, in

the reports of such cases showing retinitis it is implied that both eyes were affected. This is opposed to the view that disease of one kidney produces unilateral retinitis. It is my belief that in some of these cases the retinitis has been really unilateral at the time of examination, and that subsequent bilateral involvement has been presupposed.

However, the existence of unilateral nephritis can only be positively proved by postmortem examination or separate catheterization of the ureters. Unfortunately, the only postmortem record of such a case is Yvert's, and this is not significant, as only one kidney existed to be diseased. Ureteral catheterization is a difficult procedure, and its performance is attended with many obstacles. It has been suggested by de Schweinitz, but it has never been performed in any of the cases in question. It may be well to state here that recently, in the *Deutsche medicinische Wochenschrift*, Neumann describes a simple and ingenious way of obtaining urine from a particular ureter for diagnostic purposes. He makes use of an instrument constructed something like certain Japanese fans, which can be withdrawn into the handle. He pushes this instrument into the bladder, maintaining it in a central position, and he then opens the fan, which is provided with a convex border and fits with approximate accuracy against the posterior vesical wall. Dr. M. L. Harris,¹³ of Chicago, has also devised an instrument for collecting urine separately from the two kidneys.

This apparatus consists of a double catheter of special form and construction, and of a second instrument, to be introduced into the rectum in men, or the vagina in women, so formed that when in place it will make a ridge along the longitudinal diameter of the bladder. The two parts of the catheter are then rotated downward so that one section is on either side of the ridge thus formed. If the bladder has been evacuated and washed before the introduction of the catheters it is claimed that the urine will be drawn from the

two sides unmixed, and the condition of the secretion of the two kidneys may then be compared. The greatest advantage claimed for this apparatus is that it may be used by any one not equipped with the great manual dexterity required for operating the cystoscope, and also this apparatus may be used in cases in which the cystoscope is not available, on account of the abnormal position of the ureters, or from profuse hemorrhage, or some similar reason. The bladder being empty, great care must be exercised in rotating the two catheters after their introduction into the bladder, for the reason that it is easy to injure the bladder-walls.

Despite the foregoing theories and means of effecting proofs, the important inference to be drawn from the history of these cases of unilateral albuminuric retinitis is, to my mind, the modification of the usual fatal prognosis. The prognostic significance of albuminuric retinitis is exceedingly bad. It is universally regarded as a death-signal, and statistics seem to support this belief. Baroness Possauer¹⁴ has studied the records of 67,000 patients in the Zurich clinic and the private practice of Professor Haab, and found that the men of the poorer classes invariably died within two years, while among women of the same grade the percentage of deaths was 68. Among private patients the mortality was 59% for men, and 53% for women. Belt¹⁵ found that of 155 cases in private practice, collected from numerous sources, mostly by personal communication, 62% died within one year, 85% within two years. Of hospital-cases, 85% died within one year, and 93% within two years. Of a total of 419 mixed cases, 72% died within one year, and 90% within two years.

In the three recent unilateral cases reported in this country the patients were able to go about, and there were no serious signs indicating early death. Hasbrouck's case was in a man of 62 attending to his daily business-duties. My own patient is very comfortable and active so long as he is discreet in diet and drink. His average business day is 10 hours, and he is assiduous in his attendance.

Further investigation by postmortem examination and separate catheterization of the ureters is necessary for definite conclusions relative to these cases. The points of importance suggested by a clinical and statistical study of the cases already reported are :

(1) That the simple apoplectic form of albuminuric retinitis is the least dangerous to life ; (2) that in albuminuric cases, in which the associate symptoms are not extremely severe and can be fairly controlled by medication and diet, retinitis is not a fatal sign as long as it remains unilateral.

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