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BY

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IRITIS IN GENERAL DISEASE.

BY BURTON CHANCE, M.D.

No other field in the body presents facilities for study equal to that of the eye, for in this organ we have the opportunity to examine sensitive and specialized tissues in all the palpitation of their functional activity. It need not be wondered at therefore that systemic affections are likely to produce derangements in the structure and motility of the iris, and it is important to observe that such derangements have been noted as having been manifested early in the course of general disease. I have noticed transitory hyperemia and immobility of the iris in the early weeks of typhoid fever and in epidemic cerebrospinal meningitis; and again, in the stage preceding the chill in malaria. Pronounced inflammation of the iris and ciliary body may occur, however, as an accompaniment of profound dyscrasias, and so prominent are the symptoms that we apply to them the name of the general disease.

As might be expected, those diseases dependent upon the evolution of micro-organisms within the body are likely to produce disorders in such highly vascular structures as the iris and ciliary body; consequently we may assume that all cases of iritis and iridocyclitis, not dependent

upon traumatisms, have as their causative basis a general toxemia.

It is not my purpose to dwell long on the main clinical characteristics of iritis, such as we see at the Wills and other special hospitals, but to give a brief outline of their occurrence in the course of general disease.

Syphilis.—Iritis is seen in hereditary and acquired syphilis. In the former it is seen during the first two years of life, at about six years of age, and occasionally it manifests itself for the first time in late adolescence. In these latter groups it may occur alone or along with interstitial keratitis. One or both eyes may be attacked. Attacks of iritis in infants and children if not traumatic are almost invariably due to inherited syphilis. It is rare to see simple iritis in children, but it is commonly found secondary to keratitis. Jonathan Hutchinson observed it more frequently in girls than in boys. The few cases I have seen have been in boys.

I believe the infection may lie dormant until late in adolescence, and then break out when some unusual psychic or physical strain is laid on the individual. In the form seen in older subjects the ciliary body is implicated, so that it is really an iridocyclitis that we have to deal with, and the cornea, too, may be involved. Both eyes are usually affected, yet not simultaneously. The diagnosis is sometimes

difficult, for the family history may be obscured, and the patient may have perfect teeth and be free from scars, though occasionally there may be deafness and there may be signs of a long existent but low-grade disease in the choroid and retina. We may suppose that there have been earlier attacks of iritis because the iritic changes are usually more extensive than after a primary attack. I have noticed this variety more frequently in girls—may it not be that they have had a simple iritis in infancy which has been overlooked?

In acquired syphilis, iritis, or iridocyclitis, may be met with at two periods, either within a year after the infection, or at a much later time. It generally develops as a plastic inflammation, or as one which is accompanied by the formation of gummata. Usually it occurs at the time of definite general manifestations, and until these signs accompany it, it is difficult to decide upon a correct diagnosis as to the causation. At the outset the inflammation is limited to one eye. At times one meets with iritis in the tertiary stage of syphilis ten or fifteen years after the original infection. Here are found extensive disseminations of the infection, and usually both eyes are affected and all the structures of them may be invaded.

Rheumatism, Gonorrhea, Gout, and Lithemia.—Iritis may develop in the rheu-

matic, nevertheless it is rare in rheumatism. I could find no account of its occurrence in rheumatic fever prior to 1903, when Forster reported a case of iritis in acute rheumatism in the *British Medical Journal* for March of that year. And, at the meeting of the American Ophthalmological Society in 1905, Hiram Woods detailed three cases of recurrent iritis in which acute inflammatory rheumatism was the cause of the original attack, and he attributed the iritis in one case to hereditary tendencies.

It is rare to find it in infants or young children; the subjects are usually in middle life or in old age. The onset may be slow and insidious, or rapid and violent. The victims are seized usually in the winter and spring months, for they are susceptible to damp weather. The symptoms present no specific characteristics of this dyscrasia, except when the joints are involved the eyes may be well, but when the joints are well the eyes may be affected; and the joint symptoms associated with the iritis are usually fixed and not fugacious like those of acute rheumatism.

In time we shall learn that rheumatism is a bacterial disease, and the organism causing it will be definitely isolated. At present several organisms are capable of producing joint affections, and they may lie dormant for a long time. Frequently, when iritis attacks young men who are free from syphilitic taint, but who have had

gonorrhea, and who have presented indeterminate rheumatic symptoms, the arthritis is an infectious process capable of permeating the system; and I believe the cause of the iritis is the gonococcic material. The gonococcus may remain inactive just as other organisms do, and when it inflames it may assume protean manifestations. An instance of some moment to me came under my observation recently; it was that of a young man who had had small abscesses, like boils, which when they were incised were found to contain an abundance of gonococci. We find in some cases, therefore, that there is a distinct connection between the general disease and the inflammation of the eyes. Here there are pronounced joint symptoms which have set in several weeks or months after the urethral disease. The iritis usually recurs with each fresh attack of urethritis; there may be exacerbations, however, without there having been a fresh contamination, for we now know how profoundly the system can be invaded by a single injection of the gonococcic material. Perhaps a thorough search of the history of many of our cases of recurrent iritis will yield a positive admission of an early blennorrhea. I do not dare to state that all such cases of iritis are due to gonococcic infection, for, as I have already pointed out, recurrent iritis may be due to rheumatism.

Gout.—It is doubtful whether iritis develops in true gout. I have not seen the gouty iritis, described by the older writers, which my first teachers warned me to look for. I hesitate to classify as gout those irregular cases which present symptoms of the so-called uric-acid diathesis, dependent upon faulty metabolism, to which we apply that vague term "lithemia;" nor those of that other group, also dependent upon disturbed metabolism, through which insufficiently oxidized substances are absorbed into the system from the gastrointestinal tract, and to which we now give the term "intestinal autointoxications." We frequently see iritis in persons whose condition can only be resolved into one or the other of these groups; and the attacks may recur repeatedly until the defective food or tissue metabolism has been eradicated. Accordingly, in my judgment, the term gout should be reserved to be applied to those cases in which the family have had podagra, or in which the personal history discloses the facts of acute and chronic inflammations in the joints with deposits in the cartilages.

No doubt many cases of "hot eye" of the olden times were really such as we would now class as glaucoma—a corollary upon a previous statement of mine, that essential glaucoma is a part of a systemic disease. Nevertheless, competent observers have declared that iritis does occur in

gout; but before accepting this dictum as final we must exclude rheumatism, gonorrhea, and syphilis as other probable causes.

Tuberculosis.—Iritis in tuberculosis is less rare than it was once thought to be. It is found in scrofulous children and in adolescents with enlarged lymph glands, who may or may not have demonstrable tuberculous deposits in their lungs. It is difficult to decide whether it is a primary or secondary disease. It may supervene after an attack of measles in a child of low vitality. Death may ensue from miliary tuberculosis or from meningitis, if not from simple phthisis. It appears as localized or as multiple disseminated nodules, and it may be difficult to decide whether the nodule is tubercular, gummatous, or of hyperplastic formation. The anatomical as well as the antecedent personal and family history must be studied before coming to a conclusion, and the effects of a prompt and vigorous course of mercurials observed.

At the meeting of the British Medical Association in July, 1905, Jessop expressed his doubts whether intraocular tuberculosis is ever primary, and he therefore deprecated the excision of tuberculous eyes unless the pain is very great and the general health much affected. In Dr. Schwenk's service in 1906 I had the opportunity to watch the progress of a case of tuberculous iritis, in which there were

multiple nodules in each eye. The young man was sent to White Haven later on, and the last accounts from him showed that he had made a distinct gain in his general health.

Acute Infectious Diseases.—Iritis may occur in the course of the acute infectious and exanthematous diseases. It has been seen in typhoid fever. I noted it in a goodly number of smallpox patients, and also in others suffering from epidemic cerebrospinal meningitis. As a rule it was manifested as the serous variety in these cases. It is difficult to decide whether the iritis seen rarely in influenza has been produced by that infection, or whether it has been only a coincident affection.

Malaria.—I have known sailors who have had malaria while in the east, and others who resided years ago in the malarious districts of this country, to have iritis which has recurred and recurred until after a prolonged antimalarious course had been followed out. The only severe case of true malaria I have attended in my private practice had distinct hyperemia of his irises in the early hours of his attacks.

Meningitis.—All forms of cerebrospinal meningitis may be accompanied by iritis. In mastoid abscess with meningitis supervening, a leucocytic thrombus may become lodged in the ciliary arteries and give rise to a suppurative iridocyclitis, and rapidly destroy the eye. In tuberculous and epi-

demic meningitis, no doubt the iris is invaded by the microbic products circulating in the blood or other nutrient fluids of the body.

Whooping-cough.—In *Klinische Monatsblätter für Augenheilkunde* for May, 1905, Chronis reported a case of intense iridocyclitis in a child of nine months during an attack of whooping-cough. He believed the infection was due to an embolism of the capillaries in some portion of the eye.

Pyemia.—Iritis occurring in pyemia may be considered as suppurative in type and as having been caused by the lodgment of an infected thrombus in the ciliary arteries.

Infection from the Mouth.—In the *Lancet* of July 22, 1905, Campbell suggested that iritis might be caused by infection from the mouth. His patients had pyoalveolaris. The iritis was cured when the oral cavity became aseptic.

Diabetes.—Diabetes is surely an autointoxication, and the organic changes noted therein have been caused by the circulation of toxic substances in the blood. Accordingly, so highly vascular an organ as the iris may be severely damaged by this disease. We see the effects of the diabetic process in the severe iritis that frequently follows a careful extraction of cataract in a patient subject to the disease, and in the detachment of the iris during an iridectomy; while in the course of diabetes

there may arise a simple to a severely purulent iritis.

Albuminuria.—It is not too much to expect that the iris as well as the retina should manifest disorder in the course of Bright's disease; indeed, it seems strange that more cases of iritis in this disease have not been reported. Dr. Norris, following the example of Leber, used to teach the necessity of examining the urine in obstinate cases of iritis. Since Leber's, occasionally other cases have been reported. Knies reported two, and recently Semple, in the *American Journal of Ophthalmology* for June, 1905, detailed the history of a case of iritis in which there was albumin with casts, and in which no improvement took place until remedies useful in nephritis were employed. Distinctive signs of retinitis may be absent in cases of albuminuria. Alt, in the *American Journal of Ophthalmology,* July, 1905, therefore suggests the value of this form of iritis in the prognosis of renal disease.

The list here given of the diseases in which iritis has been present is not complete but only includes those states most commonly seen. I hope it is sufficient, however, to emphasize the importance of a careful inspection of the eyes in all cases of general disease, in order to defend the patient from incurably defective sight, if not from absolute blindness, on his recovery from the major malady.