

one half inches wide and about a foot long; the plaster was then applied to the thigh, with the wire exactly over the upper extremity of the upper fragment. A similar strip of plaster was applied to the leg below the lower fragment, to which a strip of strong cotton cloth, about a yard long, had been sewed; a strip of plaster around the limb and splint, above and below the patella, served to secure the limb to the splint and to hold the ends of the other plasters down against the broken bone. The end of the cloth being passed around the pulley and drawn upon, the fragments were held together with the greatest ease and with comfort to the patient. The end of the strip of cloth was then split in two and tied around the end of the foot piece of the splint in a bow-knot. This was quite as efficient as a weight would be, and much more convenient. The smooth cloth, passing over the broken bone, caused no pain and prevented tilting; the circulation was not interfered with, and easy control over the fragments was maintained.

I have now treated three cases in this way, with excellent results and with comfort to the patients. It is important that the plaster should be of good quality. I have used that of all the different manufacturers in the market, including the English and also the "rubber adhesive plaster" (which is the poorest of all), but give the preference to that made by Shriver, of Philadelphia.

IRITIS.¹

BY JAMES A. SPALDING, M. D. HARV.

INFLAMMATION of the iris, not due to wounds of the eye, nor as a result of operations on the eye, is by no means rare. It may occur suddenly, in the seemingly most healthy person, run a varyingly rapid course, and if carefully treated leave no ill results behind. But as it is often neglected by the patient, it may end in more or less loss of sight in the eye affected, and sooner or later starts sympathetic trouble in the other eye, leaving the patient in a short space of time with so little sight that he is in constant dread lest that too may leave him.

If the iris were not so intimately connected with the ciliary body, and that in turn with the choroid, an inflammation of the iris, even at the worst, might leave behind it only some loss of sight due to closure of the pupil or to a deposit of the pigment of the iris on the capsule of the lens. But as this connection does exist, and as from it the chief danger of uncared-for iritis is to be feared, we should always try to diagnose iritis rightly, to treat it carefully, and, if in spite of all our care the case ends in loss of sight to whatever degree, to warn the patient that an eye once so inflamed, even if now seemingly healthy,

¹ Read before the Cumberland County (Me.) Medical Society, April, 1877.

may have a relapse at any time, or bring on some sympathetic trouble in the other eye.

In order to bring out the points which it is intended to emphasize in this paper, let us look briefly at a few cases of the ordinary type.

CASE I. A young woman applied to me for advice as to a slight inflammation of the left eye, of two weeks' standing. A year ago she had had, as she thought, a like inflammation, but it had stopped at the end of three weeks, and the eye had since then been quiet. For this fresh attack she had been using some mild astringent wash, but with no relief. The sight was perfect, and the ophthalmoscope showed no signs of deep-seated trouble. The case seemed one of conjunctivitis, but as she had had no relief from astringents I used as a means of diagnosis a weak solution of atropia sulphate,¹ which dilated the pupil and brought to light a small adhesion. At the end of ten days the adhesion was broken through by the use of the strong solution of atropia, and a cloudiness of the cornea disappeared under the influence of mild local and general tonic treatment. She was now able to read the finest type with both eyes, without any exertion. At the end of a month, during the last week of which she had neglected the use of atropia, she had a relapse, and when I saw her again new adhesions had formed opposite the seat of the old adhesion; there were deposits of pigment on the capsule of the lens; the sight was quite defective (Snellen's types No. 8); and the eyeball seemed enlarged and was rather soft.

An iridectomy was declined; other means failing, Streatfield's operation of tearing through the adhesions was done, and the pupil was dilated fully. An interval of rest followed, but at the end of another month irido-choroiditis set in, and the pupil was slowly closed by the pouring out of lymph into its field. Iridectomy was done, but that failed to stop the progress of the disease; and although for three months the sight at times was almost normal, the eye at last had to be removed, as the previously sound eye gave signs of tenderness.

CASES II. and III. are of comparative interest. Both had lost their sight from extensive adhesions, and within four weeks after the iritis began: one had been treated with mercury, the other with tonics; the former had had sympathetic trouble, the latter none; the latter had had a second attack in the same eye, the former none. In neither case was atropia used. In both cases iridectomy will have to be done.

CASE IV. was seen within a few hours after the attack began; the

¹ In this paper a *weak* solution means 7 centigrammes (cg.) to 31 grammes of water; a *moderately strong* solution, 33 cg. to 31 grammes; a *strong* solution, 66 cg. to 31 grammes; while in very rare cases, a solution of 1 gramme to 31 grammes may be used:—

1 gramme = 15.43 grains troy.

1 centigramme = 0.154 grains troy.

Fl. ʒi = 480 grains distilled water = 31 grammes nearly.

pupil was smaller than that of the right eye, was very sluggish, but dilated fully under the action of the weak solution of atropia. A moderately strong solution was then ordered, and the pupil was kept fully dilated. On the tenth day the patient neglected the drops for twenty-four hours, and on seeing him the next morning I found the pupil smaller, quite oval, and tied down by many very fine adhesions. The strong solution of atropia had only slight effect. Pain, which had up to this day been almost wholly absent, now became very considerable. To relieve this, potassium bromide was ordered, and with complete success. No effect being visible on the pupil the next morning, I at once applied three leeches to the temple, and encouraged after-bleeding. The pupil began to dilate the next morning under the influence of a weak solution of atropia, and that was maintained to the end of the case, some fifteen days afterwards. Sight has been perfect for the last two years.

CASE V. had an irritation of the iris (if I may use that term) rather than an inflammation; the pupil was sluggish, but not tied down. The eye was enormously congested, more so than in any case I ever saw. Weak solutions of atropia caused dilatation of the pupil, but it was not lasting. Astringents were of no use. The very strong solution of atropia was now used repeatedly, and it acted, I might say, magically, for the congestion of the eye began to grow less in a very few hours, and it was not long before the patient reported himself as well.

In looking over these cases we are to notice the rapid formation of adhesions when the pupil once fairly contracted, the rapidity with which, after adhesions had once formed, grave troubles of sight followed, and the beneficial results of atropia in strong solution.

Now, as iritis is by no means a simple disease which comes and goes and leaves no traces behind, I propose to take these cases as my text, as it were, and look a little closer at this disease, which often falls to the care of the general practitioner.

Iritis may easily be mistaken for conjunctivitis unless attention be given to the following points: in conjunctivitis the congestion of the eye is uniform, or nearly so, all over the eyeball, and is especially marked in the fold of conjunctiva exposed when the lower lid is pulled down. Its color is of a brilliant red; the network of congested vessels is extremely fine, and the vessels, if touched, can be rolled about under the finger-tip.

In iritis the eye, at first glance, often looks very much congested, but this congestion is more noticeable close to and around the cornea, and is almost absent in the fold of the lower lid; the color is more of a brick-red or even purple tint; the vessels are larger, their network is coarser, sometimes even absent; the vessels gradually taper off in size as they pass away from the cornea; they cannot be rolled under the finger, for they are deeper seated than those congested in conjunctivitis.

Sometimes there is a very narrow white ring wholly round the cornea, and then, just outside of this, the engorged vessels suddenly start out over the eyeball. Sometimes, though rarely, the conjunctiva seems puffed up around the cornea, or there may be œdema of the lids.

The presence of a copious flow of tears is not a diagnostic point of much value, being common to both conjunctivitis and iritis.

Then the state and behavior of the iris and pupil are to be considered. In conjunctivitis the iris of the eye affected is of the same normal color as the other; its look is clear and healthy; there are no vessels to be seen on its surface; the pupil is quite sensitive to the action of light and shade, and contracts and expands energetically.

In iritis the iris is more or less dulled in color, a blue iris becoming greenish, a brown iris reddish-brown; the iris is swollen and pushed forward, and sometimes congested vessels are seen on its surface. The pupil is contracted, except in one set of cases to which we will soon return, sometimes excessively so: first by the swollen state of the iris and its vessels, and then by adhesions forming or already formed between the edge of the pupil and the capsule of the lens.

A great deal depends, so far as an exact diagnosis is concerned, on whether the pupil is contracted or sluggish, or only seemingly so. Here we must remember that if the healthy eye be left open while the affected eye is tested by closing and opening the lids, the pupil sympathetically tends to follow the movement of that of the sound eye, and hence may give us a false idea of its mobility. Therefore close the sound eye and keep it closed; then test the affected eye, or, if both eyes be affected, test each one separately.

I do not doubt that many a case of iritis has thus concealed itself, and has been treated with simple astringents; then a few hours later adhesions have formed which have been difficult to get rid of without operative interference. Therefore, I repeat, test each eye separately.

Another point in diagnosis, if we are still in doubt, is to drop a weak solution of atropia into the eye, and in a short time we shall be able to tell whether adhesions be present or not. If we cannot see them by diffused daylight we can concentrate lamplight or gaslight on the eye by convex lenses. Pain is usually present in iritis, but not always; when present it is not itching and smarting as in conjunctivitis, but deep-seated, causing tenderness on the temples and forehead of the affected side, usually very severe at night, though there may be no pain when we press on the eyeball. In iritis the vision is more or less affected from adhesions, or from exuded lymph, or corneal implications. When lymph is exuded into the anterior chamber of the eye, it may assume a triangular shape, the base downwards, the apex pointing into the centre of the pupil. This odd appearance is probably due to the gravitation of the heavier particles to the bottom of the chamber. A

few very rare cases have been reported¹ where there was blood in the anterior chamber, which had oozed from the engorged vessels. These cases were said to be syphilitic.

We may sometimes find yellowish or reddish tubercles in the stroma of the iris, much resembling syphilitic gummata. When they are present that part of the iris on which they seem to grow is the only part inflamed, and the vessels converging towards it are noticeably enlarged. These tubercles often undergo fatty degeneration. When present they are an almost positive sign of syphilitic iritis, for out of sixty cases reported, syphilis could be proved in all but two. It is in a syphilitic iritis that we find a dilation of the pupil, and the pain is usually less.

Chronic iritis may be known from the history of a previous attack, whether acute or subacute, or it may come on in connection with diseases of the cornea. The change of color in such cases of chronic iritis is lasting, while in acute iritis the iris regains its normal color after some delay.

The cases which I have spoken of in beginning this paper all came on in the hottest part of the year, July and August: in none of them was there the least history of infection from syphilis or of congenital syphilis; in none of them were there any accounts or symptoms of rheumatism, although there were complaints of shifting pains in various muscles and joints.

It may be interesting to consider here the disputed question as to the syphilitic or arthritic causation of iritis, using the word arthritic to include acute and chronic rheumatism, rheumatic gout, and gout. Most authors, Bumstead, Meyer, Galezowski, Wells, and so on, falling back on the statistics of Graefe, say that from sixty to seventy-five per cent. of cases of iritis are due to syphilis. Most medical writers on rheumatism are silent on cases of inflammation of the eye coming on during or directly after an arthritic attack.

An able defense of the existence of a real arthritic iritis has lately been made by Mr. Jonathan Hutchinson,² who says: "Rheumatic iritis is a disease likely to be pushed to the wall in this age of specialism. It is nobody's child. Writers on rheumatism do not mention the eye. Writers on the eye dismiss rheumatism with contemptuous brevity. Syphilis has come to the front, and most physicians believe that if the truth could be reached, iritis would be found of syphilitic origin. . . . I believe confidently that iritis due to an arthritic diathesis is a common malady, and that very many cases treated as syphilitic are really arthritic."

This testimony, coming from so ardent a student of syphilis as Mr.

¹ *Med. and Surg. Rep.*, March 7, 1874; also *Klin. Monats. für Augenheilkunde*, ix. 94, x. 7.

² *Royal London Ophthalmic Hospital Reports*, vol. vii., part 3; vol. viii., part 2.

Hutchinson, is of great weight. In these papers referred to he gives the history, and in some cases the treatment, of one hundred and fifteen cases of various diseases of the eye, in adults, taken at random from hospital and private practice, and of them a brief summary is annexed in tabular form : —

- 71, Chronic rheumatism and gout ; history or actual symptoms.
- 14, Rheumatic fever.¹
- 19, Gonorrhœal rheumatism.
- 8, Syphilis.
- 3, Unknown, that is, uncertain whether syphilitic or arthritic.

115 cases, of which 98 were of iritis, the rest of glaucoma, kerato-iritis, and so on.

This series of cases would seem to show a true arthritic iritis, due to a diathesis developing itself sooner or later in the shape of rheumatism, rheumatic gout, or gout, accompanied with or followed by symptoms of diseases of the eye. But it is not to be expected that we should always find in cases of arthritic iritis such physical signs of the development of a diathesis as are distinctive of syphilis, — patches in the throat, on the arms, chest, or abdomen, or swollen glands in the neck, and so on.

Congenital syphilitic iritis is observed mostly in infants or young children ; it almost always attacks both eyes, and there is much exudation of lymph into the field of the pupil.

Gonorrhœal iritis has no existence, the three or four cases reported as such having since been proved to be associated with gonorrhœal rheumatism.

The treatment of iritis, whatever may be its nature or cause, resolves itself first into care for the strictly local symptoms ; then for the constitutional.

We must keep the patients, if possible, in darkened rooms, or at least insist on their wearing tinted (blue or smoke) protecting-glasses or shades. Then comes the fight against the formation of adhesions, because they contract the pupil, and of themselves interfere more or less with vision ; because they may, even if we succeed in tearing them through, leave behind them indelible stains on the lens capsule ; because, once formed, they keep up an irritation of the iris at every movement of the pupil in response to light or shade ; because they may cut off the interchange of fluid between the two chambers of the eye ; and, finally, because sooner or later there is a tendency of these causes combined to set up irido-choroiditis, or later, sympathetic trouble in the sound eye.

How are we to avoid these dangers ? By the use of atropia, and by not using it too weak. Do not dally with a case of iritis. Attack it at once. The strong solution of atropia sulphate should be in every physician's hands, not only as a powerful arm, but as a means to diagnosis

¹ Of these fourteen cases of rheumatic fever, twelve had an iritis come on *during the fever* !

and prognosis. For if we find no adhesions we can say, with as much confidence as of any disease, this case will do well; or if adhesions show themselves we can say, depending on their number and thickness, this case may go slowly, it may have relapses; while in the worst cases, we can at once advise operative interference. But such strong solutions should not always be left in the patient's hands, as they sometimes cause symptoms of poisoning. In cases of long standing, and where the adhesions cannot be removed by solutions of atropia, it is better to give them up, or to try the effect of calabar bean,¹ or, better still, to advise iridectomy.

In one of the cases reported atropia was neglected by the patient, or perhaps it was not absorbed, owing to some trouble in the cornea; the result was the formation, in a very few hours, of adhesions which proved quite obstinate. In such cases as this, while keeping up constitutional treatment, we must apply leeches to the temples, on a level with and about an inch from the eye, and pretty close together, as the space is not large. In case we have to leave the application of the leeches to the patient, we should *mark the place where we wish them applied*, lest the patient apply them too near the eye, or to the lids, or even to the eyeball itself, with most destructive results.²

Astringent lotions are of but slight help during an attack of iritis, however much the congestion of the vessels may seem to call for them. This congestion will disappear only with a removal of the iritis.

If tubercles appear in the iris, hot-water compresses are often of much avail. Hot foot-baths are also useful. Ointments about the eye, smeared into the temples and forehead, act slowly and variably. Their nastiness is disproportional to their benefit. I rarely use them (extract belladonnæ, etc.) except when, owing to the patient's idiosyncrasy, solutions of atropia cannot be borne.

Paracentesis of the cornea is indicated when atropia refuses to act, when adhesions have formed, or when leeches prove of no help. A slight prick with a broad needle, letting off the aqueous humor, often relieves the most intense pain.

As relapses of iritis often occur, we should keep on with the use of atropia for some weeks after all inflammatory symptoms have ceased. If these relapses are not caused by the presence of adhesions, we must admit the existence of a diathesis of some sort.

¹ A filtered solution of thirty-three cg. of the solid extract of calabar bean to thirty-one grammes of water acts well in some cases. Or we may use gelatine disks impregnated with the extract; or esserin sulphate may be tried. But the latter is very expensive.

² Dr. Lebrun, *Annales d'Oculistique*, September and October, 1870, page 166, reports a case of sympathetic ophthalmia in the left eye of a man, aged thirty-nine, from irritation and loss of sight in the right eye, due to the bite of a leech, which was placed directly on the cornea of the eye, when a leech had been ordered to be put "near the eye," for some slight inflammation. In this case, although the injured right eye was removed, the left eye remained much affected, and probably forever as to its sight.

Constitutional treatment cannot be neglected ; but it is not always needful. Many a case of iritis may be cured by merely local treatment ; but then, in case there should be relapses, we are met by the question, Would these have occurred had we paid due attention to constitutional treatment ?

If we believe in the existence of an arthritic diathesis, we must employ the remedies proper for such cases. Salicylic acid¹ and quinia are highly praised. Then we may use potassium iodide, or ol. terebinth., or the various diaphoretics and diuretics. To relieve the pain we may rely on opium, potassium bromide, ammonium bromide, chloral hydrate, or amyl nitrite. Mr. Power,² besides the constant use of atropia, strongly urges the combination of strychnia, iron, and quinia bisulph., on the ground that iron and strychnia constrict the walls of the arteries of the iris and diminish the amount of blood supplied, while quinia materially influences the escape of white corpuscles, which are the probable cause of adhesions.

In regard to mercury, I must confess my ignorance. I have never used it in a case of iritis, but I cannot yet say that I have to blame myself for any eyes lost from iritis from not using it. Mercury may diminish inflammation of the iris if it have time enough to act, but meanwhile the pupil may become tied down to the lens capsule by adhesions.

I have been much struck by these following sentences : "One case [iritis] has taken much mercury at different times, and both eyes are very much damaged ;"³ again, "The opposite eye will sometimes be attacked while the patient is taking mercury for the one first affected, and in rare instances during the existence of ptialism ;"⁴ and again, "An infant under the influence of mercury is just as liable to have an iritis."⁵

Such sentences, at first puzzling me, at last led me to the belief that a case of iritis, whether syphilitic or arthritic, runs its own course independently of the presence of mercury in the system. However, if we think or if we have been taught that mercury is of avail in iritis, we should use it in the form of calomel and opium, or of calomel combined with tonics as Bumstead advises.

In closing, I may say that my reasons for going into the subject of iritis at such length have been because the disease is not an infrequent one amongst diseases of the eye ; because if neglected it leads to grave results ; and finally, and most especially, because I wished, in bringing the question before you, to gain new light from your own experience as to its syphilitic or arthritic origin or causation.

¹ Boston Medical and Surgical Journal, February 22, 1877.

² Royal London Ophthalmic Hospital Reports, vii. 4.

³ Hutchinson, *ubi supra*.

⁴ Bumstead, 1870 edit., page 668.

⁵ Medical Times and Gazette, July, 1860.

[An interesting discussion followed the reading of this paper. Dr. J. M. Bates, of Yarmouth, related some cases of iritis coming on during an attack of rheumatic fever, and he was of the opinion that in country practice cases of iritis were more often due to an arthritic than to a syphilitic diathesis. In answer to various questions, Dr. Spalding advocated the use of the moderately strong solution of atropia sulphate (thirty-three cg. to thirty-one grammes of distilled water or rose-water) because, although weaker solutions might equally well cause and continue a dilation of the pupil, the stronger solution caused more contraction of the vessels of the iris, thereby lessening the danger of the exudation of white corpuscles causing adhesions, and because it was more soothing. But sometimes, in elderly people, a solution of the above strength will cause dryness of the throat and other unpleasant symptoms, when a weaker one will be easily borne.]

RECENT PROGRESS IN OBSTETRICS AND GYNÆCOLOGY.

BY S. HOWE, M. D.

OBSTETRICS.

*Is the Fœtus in Utero affected by Medicine which is given to the Mother?*¹—In the New York Obstetrical Society Dr. Mattison reported a case of puerperal convulsions. The patient was treated with morphia, and was under its influence for about two hours; the morphia was given subcutaneously; the amount was about one and a half grains. The child was born asphyxiated, and shortly after had some convulsions, but finally recovered. An interesting discussion followed the report of the case, the opinions of Zweigel and Fehling being quoted. (Zweigel had found chloroform, after it had been given for some hours to the mother, in the urine of a new-born child. Dr. Fehling's experiment was as follows: A guinea-pig which was about to bear young had injected into its external jugular vein of the left side a large amount of curare; it was kept alive for some hours by artificial respiration. The abdomen was then opened, and the young guinea-pigs were found in a lively condition, unaffected by the drug.)

Dr. Barker opened the discussion by saying that he did not agree with Dr. Mattison, but thought that convulsions in a fœtus might take place due to opium poisoning. He cited cases in animals where opium poisoning was followed by convulsions, and said that in those savage races in which the brain is less developed than in the rest of mankind convulsions do occur after toxic doses of opium. The possibility of a poison passing from the blood of the mother to that of the fœtus is shown in cases of scarlatina, variola, and syphilis. That medicine

¹ American Journal of Obstetrics, March.