OPTIC ATROPHY AFTER INJECTIONS OF ARSENIC

BY

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SOME ophthalmologists think that the optic neuritis and atrophy seen in syphilitic patients who have been treated by injections of organic arsenic preparations, the *neuro-recidiv* of the Germans, may at any rate occasionally, be due to direct toxic action of the drug upon the nerve. It is recognised that the penta-valent preparations are more liable to cause atrophy than the tri-valent. Most of us have seen tragic examples of complete amaurosis caused by atoxyl and soamin, but the general opinion is that N.A.B. and similar drugs are harmless in this respect. Tryparsamide, a penta-valent product, if used in small doses, and with reasonable precautions, is also considered to be safe.

I have had under my care twins suffering from congenital syphilis, one of whom was treated with arsenic, the other had no treatment at all. Whereas both children must have had a similar type and degree of syphilitic infection, and both must be held to have a similar nature, we have a very accurate control: the virulence of the infection is the same, the resisting power of the host is the same.

The mother of the twins, both girls, came to the Coventry Hospital soon after the birth of her children. She was found to have bilateral optic neuritis. This was at first held to be associated with her pregnancy, but the Wassermann reaction was strongly positive, and she was eventually found to be suffering from optic tabes. Her discs rapidly became completely atrophic, and recently she died in a mental hospital from her syphilitic infection.

The twins were brought to Coventry Hospital in August, 1927. They were very much alike, but Jean was larger than Joan.

The notes of the cases are as follows:—

Jean W., aged 5 years. Attended on August 22, 1927. The child has the typical appearance of congenital syphilis, with Parot's nodes, and scars round the mouth. Her Wassermann reaction is ++. Her refraction is +4.0 D.sph. and +2.5 D.sph. (R. and L.). There is convergent strabismus of the right eye, and both eyes have poor fixation. No note was made of any choroiditis or pallor of the optic nerve.

Jean was sent to the Venereal Department, where she received 18 injections of *Sulphostab*, a tri-valent preparation. She also had Pil. Hydrarg. cum Cret, and Syrupus Ferri Iodidi. The mother was then instructed that the child was to have three months' rest and return

for another course of injections. Owing to the illness of the mother, the child did not appear again.

On March 7, 1932, Jean came to me as a private patient. I had not seen her for four and a half years.

Present condition.

Under atropine, V.R. with $+3.5$ D.sph= $6/60$.

V.L. with $+1.5$ D.cyl. at $105^\circ < 6/60$.

The best vision with the left eye is obtained with the head held on one side. Fixation with the left eye is poor. It will be noted that there is a considerable change in the refraction of the left eye.

Fundi.—It was difficult to make a good examination owing to nystagmoid jerking.

Right Eye.—The disc is very pale, and the vessels are small. The appearance is one of consecutive atrophy. There is extensive disseminated choroiditis; pigmentation and areas of yellowish exudate.

Left Eye.—The disc has a similar appearance to that of the right, but the pallor is not so extreme. There is disseminated choroiditis with pigmentation, but no exudate.

The left eye diverges 5 degrees.

I saw the child again on April 11 when the effect of the atropine had passed off. To my surprise she now read $6/60$ with her right eye and $6/15$ with her left. Holding the types close to her eye she read J.4 and she is able to learn at an ordinary school.

Joan W., aged 5 years. Attended at the Coventry Hospital on August 22, 1927.

She, like her sister, had the typical stigmata of congenital syphilis. Her refraction was $+3.0$ D. sph. (R. and L.).

No note was made of any abnormality of the fundus, but, as all cases refracted are examined with the ophthalmoscope, we can assume that both these children had no abnormality of the choroid and optic nerve in 1927.

On March 22, 1932, Joan came to see me as a private patient. I had not seen her for four and a half years. She had had no treatment, and her Wassermann reaction had never been taken. This apparent neglect was due to the fact that her mother was nearly blind, and too ill to attend to her.

Present Condition.—Refraction under atropine: V.R. with $+3.0$ D.sph. = $6/6$. V.L. $< 6/60$. Refraction -4.0 D.sph., but no improvement took place.

The discs are normal, no trace of pallor is seen; the right choroid shows a slight pepper and salt pigmentation. The left shows a diffuse choroiditis; there are areas of white infiltration, especially along the vessels.

The left eye converges 40 degrees. It will be noted that the left

eye has become myopic, the original refraction of +3.0 D. having changed to -4.0 D.sph. This change is not uncommon in children with congenital syphilis, especially after an attack of interstitial keratitis. The choroiditis did not seem to be sufficient to account for the amblyopia, and the macula was unaffected, so I ascribe the amblyopia of the left eye to the change in refraction and the squint.

Comment.—It is quite obvious that the condition of Jean, the child that was treated with sulphostab, is far worse than that of her sister who received no treatment, and yet both children had the same infection, and similar natures. The logical conclusion is that in this case the arsenic preparation had a deleterious effect upon the optic nerve. It would, however, be wrong to infer from a few isolated examples that tri-valent arsenic preparations are dangerous and liable to cause optic atrophy. The fact that they have been used in thousands of cases without any ill effect upon the optic nerve proves the contrary, but we cannot escape the conclusion that occasionally the optic nerve may suffer.

I cannot explain the discrepancies in Jean's vision with and without atropine, but a long experience in school clinic work has taught me that children are apt to behave in this way.

RETINAL DETACHMENT OCCURRING PROBABLY AFTER HERPES ZOSTER OPHTHALMICUS IN A CASE OF SIMPLE GLAUCOMA

BY

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DUNDEE

MR. R., aged 64 years, consulted me in January, 1928, complaining that the vision of the left eye had been failing for a year, and that the eye was now almost blind.

Examination of the left eye showed dilated conjunctival vessels, a slightly steamy cornea, pupil 4 mm., regular and inactive, tension (Schiötz) 70 mm. Hg, and vision reduced to seeing hand movements at 1 foot distance on the temporal side only. Transillumination was normal. In the right eye the optic disc was flat and of good colour, the retinal arteries were a little sclerosed, tension was 25 mm. Hg, and vision 6/6 easily with correction for a low hypermetropic astigmatism.

As regards the subsequent history of the right eye, it need only be mentioned that by the use of eserine drops, increased gradually in strength and frequency, the tension has been kept at 20 mm. Hg, with 6/6 vision, and normal visual field.