IV

SYPHILITIC DISEASES OF THE EYE *

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MR. PRESIDENT AND GENTLEMEN,—I must thank your Committee for doing me the honour of asking me to read a paper on the syphilitic diseases of the eye. I fear, however, that the fact that I am at Moorfields must have suggested to them that I knew something about eyes. Well, I don't. I am a general bacteriologist, and non-bacterial eye diseases are merely names to me. Then again, with regard to syphilis, I can claim no very special knowledge, as, with the exception of the external syphilitic diseases of the eye, I am again to a large extent dealing with names only. This is a sort of apology for the rather scattered remarks I am offering you to-night. To my mind, there is no great difference in the treatment of, say, interstitial keratitis, secondary iritis or tabes than any other syphilitic condition where the eye just does not happen to be affected. Probably most of you here to-night are dealing with syphilis all day and every day; at Moorfields, in my department, it is just an occasional incident. I have had some tables made, which I am having handed round to you, which show the Wassermann reaction in a thousand consecutive cases of eye conditions, which may give you some idea of the relative frequency of the various syphilitic eye diseases. During the course of my remarks I shall refer to this Table I. To a certain extent the cases are selected, as naturally the surgeon suspected syphilis as a possible cause before sending them to my V.D. department for investigation. You will notice that no mention is made of primary sores in this table. We hardly ever see primary chancres on the penis, and when seen on the eyelids treatment is carried out immediately, and no Wassermann is done.

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PRIMARY SORES

Syphilitic chancres may occur on any part of the external eye, but those that I have seen have been mostly on the conjunctival surface of the lower lid. The right eye is more frequently affected than the left. I have seen two on the caruncle and one on the skin surface of the outer side of the lower lid. I have never seen one on the bulbar conjunctiva alone.

The clinical diagnosis is not always easy, as chancres inside the lid do not as a rule give the typical appearance of the Hunterian chancre on the penis. I find the condition most frequently mistaken for chancres are accidental inoculations from a vaccination pustule, and in two of the cases I have seen of this sort in women, the infection came from the baby's arms, one starting with a small scratch from the infant's finger nail. I once saw an anthrax pustule on the lower lid which looked and felt very like a chancre. As soon as suspicion is aroused as to the condition being a chancre the diagnosis is easy with dark ground illumination, especially as there are no similar-looking organisms in the eye to confuse the issue, as in chancres of the lip. The pre-auricular gland is generally enlarged, but this is really not much help, as this gland becomes enlarged in many cases of acute bacterial infection of the conjunctiva. With treatment, the sore clears up in the usual rapid way we expect now, without much damage to the lid. In the cases where the sore appeared on the caruncle there was considerable scar formation and constriction, and the patients suffered from epiphora afterwards. I have a patient at present whom I am treating for tabes where the original sore was at the inner angle of the eye, and his lacrymal sac seems to be entirely obliterated by scar tissue. It has been said that patients with chancres on or near the eye are very liable to develop acquired interstitial keratitis. This is not my experience, though most of the cases I have seen have been under my care for a considerable time. I have two patients in my private practice who had chancres of the eye many years ago, and who I am now treating for tabes, and they have never had interstitial keratitis.

Interstitial keratitis is responsible for the largest number of cases which I am showing you in the table of Wassermann tests done. Two hundred and six examina-

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tions were made, with 158 positive results and 48 negative. Of the 48 negative, 27 were definitely not I.K., and the 21 negative Wassermann cases were clinically definitely I.K. This gives a negative Wassermann reaction in 12.1 per cent. of cases.

Mr. Doyne has already described to you the clinical appearance of I.K., and I propose to add some of my own observations on the cases I have seen and treated.

I am always very impressed with the frequency with which one gets a history of injury, sometimes of the slightest, which precipitates an attack of I.K. I have seen a case start as the result of the testing of the corneal reflex with a finger during the course of a general anæsthetic, and I have seen one start from a fly in the eye.

No doubt many of you here are familiar with the cases which occurred during the war, and in many of these the history of injury is very definite and beyond dispute. There are, however, some ophthalmic surgeons who are not so ready to agree to the suggestion that an injury is the most frequent starting point of the conditions, or at least who doubt that it is of major importance. One must realise that the start of many external eye conditions is described by patients as "a bit of grit in the eye," and in this way the history may be misleading.

The association of I.K. with other stigmata of congenital syphilis you will not expect me to enlarge upon, but I must say that I see many cases of I.K. in which no other signs or symptoms of congenital syphilis can be detected. There seems considerable confusion of thought as to what constitutes Hutchinson's Teeth, and I doubt that Hutchinson would recognise many of the conditions so often described in case sheets under this heading.

SEX INCIDENCE

In 463 cases of interstitial keratitis which I have just worked out, 276 were in females and 187 in males. This gives a ratio of 1.48 to 1, or approximately 60 per cent. females and 40 per cent. males.

I append a table, No. 2, of these results with those of other observers. You will note how near my figures are to those of Carvill and Derby and Holmes Spicer.

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AGE OF ONSET

I am giving you a table of the ages of onset in the same group of 463 cases, and if you would compare them with other results I must refer you to the various writers mentioned in Table II. I have prepared a graph which shows the result of these figures in a more readily understood manner than lists of figures can do. I am sorry I have not been able to give you copies of this, so I must ask you to hand it round. You will notice that at twenty-one years the two curves coincide. In the females there is a steady rise up to this age (twenty-one) from about the period of the onset of puberty. The rise is more acute in the case of the males, and may coincide with the end of school life and a start at work, and they are thus exposed to more risk of injury to the eye.

It is generally considered that both eyes must become involved sooner or later—why I cannot see. It seems to me that most text-books hand down the opinions of the early writers on this disease without taking into consideration the advances in treatment which have been made in recent years; just as in the same way most authors perpetuate the idea that salvarsan and bismuth are of no value in the treatment of this condition. Carvill and Derby had 18 per cent. of cases in which the second eye never became affected. I firmly believe that if cases were handed over for energetic treatment with organic preparations of arsenic and bismuth as soon as the diagnosis is made, and not just kept hanging about with local treatment for weeks, we should hear less of this inevitable involvement of the other eye.

I have recently had the pleasure of a visit to my laboratory from Professor Weve, of Utrecht, and I was glad to find that he was in entire agreement with me on this point. Indeed, he is himself getting results on a par with those of Carvill and Derby. When the second eye does become affected, and this often happens during an intensive course of treatment by salvarsan, there is no doubt that it clears up more rapidly and with less damage to the eye than does an untreated case.

Quite apart from my own opinion as to the value of salvarsan in I.K., it seems to me that the work of Maude Carvill and George Derby, of the Massachusetts Eye and Ear Infirmary, has been, I would almost say, wilfully

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overlooked. Many ophthalmic surgeons say salvarsan is of no use in I.K., but can produce no evidence that I can find to back up this statement. Whereas the above writers have produced hard facts in the form of actual visual tests to prove the very considerable advantage following the use of salvarsan. Since I first read the above paper I have envied the writers the details of the cases they were able to procure. In a hospital like Moorfields, where the number of cases seen practically precludes visual and other tests, I have found it impossible to get out statistics to back up my pious opinion as to the value of salvarsan in I.K.

I am giving two abbreviated tables from the paper mentioned above for your consideration, Tables VI and VIA, and you can see for yourselves the greatly improved ultimate vision in the treated cases. Table VI gives the vision taken with both eyes together, and VIA the vision of the better eye. Where both eyes were affected this will probably be the last affected eye.

Closely connected with this question of I.K. is one that is frequently cropping up in my clinic, viz., as to whether a woman ought to marry at all who has had I.K.; and if she should marry, when? I am often asked by girls who realise that they are suffering from one of the manifestations of syphilis if it means that they must never marry. I always say yes, they may marry after they have had a good course of treatment—and regardless of the final Wassermann reaction. But I make them promise to come and have another course should they become pregnant. I have now quite a nice large family of healthy babies who come and see me periodically, and I have yet to see one with signs of syphilis. The question of the mortality of children of I.K. mothers is one that I should like to hear discussed.

If you will now refer to Table I. you will notice that I have kept the cases diagnosed "keratitis" distinct from those diagnosed I.K., and while it is quite possible many of the Wassermann positive cases could be moved up into the I.K. category, the ratio of positive and negative reaction in this group is quite opposite to that of the I.K. cases. The negative Wassermann reaction cases are of considerable importance in this group as possibly including the tubercular keratitis cases. The differential diagnosis between syphilitic I.K. and tuberculous keratitis is not

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always easy, and I have on several occasions seen both occur together.

You will notice the large number of negative Wassermann reactions in the iritis and irido-cyclitis groups. I think ophthalmic surgeons have an exaggerated idea of syphilis as a cause of iritis, and I have many cases of recurrent irido-cyclitis sent to me for Wassermann reaction which never could be syphilitic. Syphilitic iritis, to my mind, is a condition which occurs during the secondary stage of syphilis, and the cases I have seen have almost all had definite signs of secondary syphilis present at the same time as the iritis. I think you will all agree with me that recurrent syphilitic iritis is very rare. Gonorrhœa and other chronic septic conditions are the more usual causes of recurrent iritis. A positive Wassermann reaction does not make an iritis syphilitic. I am afraid my post-graduate students must get very bored with my constant repetition of the statement that laboratory tests will never and ought never to take the place of clinical observations and experience.

Optic atrophy is a condition about which the greatest pessimism abounds, and yet I think that with thorough treatment it is sometimes possible to keep the condition stationary—anyhow, for a considerable period of time. The cases of external paresis as a rule respond well to treatment. It was at one time a common saying that syphilitics who got eye trouble did not go on to the advanced stages of tabes and G.P.I. I wonder what truth there is in this observation? When I first went to Moorfields, some twenty years ago, choroiditis was nearly always considered syphilitic. Wassermann reactions and modern investigations have to some extent altered this idea, and the figures of the results of tests rather bear out this more recent suggestion. The number of cases sent for test, however, show that the old idea has not yet left the minds of the ophthalmic surgeons.

I think now you have had enough of my meanderings, and if my remarks have given any food for discussion, my part in this evening's study is played.

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TABLE I

	Wassermann reaction.			Wassermann reaction.	
	+	—		+	—
Interstitial keratitis . . .	158	48	Tabes	4	3
Keratitis	37	49	Dis. sclerosis	—	4
Iritis	22	90	Arterio-sclerosis	1	—
Irido-cyclitis	18	68	Hemianopia	2	—
Cyclitis	10	21	Nystagmus	—	2
Optic atrophy	30	28	Ptosis	7	11
Pale discs	3	12	Vitreous opacities	3	7
Retro-bulbar neuritis . . .	5	23	Posterior synechiæ	1	4
Papilloedema	—	7	Melanos, conjunctival	—	2
Paresis	36	60	Scleritis and episcler.	4	8
Ophthalmoplegia	—	4	Squint	4	7
Choroiditis	29	68	Retinitis pigmentosa	3	7
Retinitis	11	17	Glaucoma	2	41
Macular changes	6	8	Gumma of palate	1	1
Choroido-retinal changes . . .	2	1	Cornea, nebular	2	3
Pigmentary degenerations of retina . .	2	3	Ulcers	3	7
Detached retina	2	4	Glioma	1	—
Optic neuritis	1	12	Thrombosis of retinal veins	1	3
			Tobacco amblyopia	2	5
			Argyll-Robertson pupil	3	3

TABLE II

Observer.	Total Cases.	Females.		Males.	
		Total.	Per cent.	Total.	Per cent
Browning	463	276	60	187	40
Carvill and Derby	322	197	61	125	38·8
Spicer	556	368	61	228	38·0
Cunningham	581	342	54	239	46
Hoor	625	314	51	311	49
Igersheimer	257	130	50·6	127	49·4

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TABLE III
INTERSTITIAL KERATITIS

Age Incidence

Of 463 cases of interstitial keratitis, 276 were females and 187 males.

FEMALES

1 year . . . 0	12 years . . . 6	23 years . . . 13
2 years . . . 1	13 " . . . 9	24 " . . . 5
3 " . . . 2	14 " . . . 14	25 " . . . 10
4 " . . . 2	15 " . . . 16	26 " . . . 6
5 " . . . 8	16 " . . . 11	27 " . . . 6
6 " . . . 12	17 " . . . 18	28 " . . . 6
7 " . . . 7	18 " . . . 9	29 " . . . 3
8 " . . . 10	19 " . . . 12	30-35 " . . . 7
9 " . . . 10	20 " . . . 14	35-40 " . . . 10
10 " . . . 9	21 " . . . 15	40-45 " . . . 1
11 " . . . 7	22 " . . . 12	45-50 " . . . 4

TABLE IV

MALES

1 year . . . 1	13 years . . . 4	25 years . . . 7
2 years . . . 2	14 " . . . 6	26 " . . . 5
3 " . . . 1	15 " . . . 4	27 " . . . 8
4 " . . . 4	16 " . . . 7	28 " . . . 1
5 " . . . 7	17 " . . . 6	29 " . . . 1
6 " . . . 8	18 " . . . 8	30-35 " . . . 7
7 " . . . 11	19 " . . . 7	35-40 " . . . 4
8 " . . . 6	20 " . . . 8	41-45 " . . . 0
9 " . . . 12	21 " . . . 15	46-50 " . . . 2
10 " . . . 2	22 " . . . 5	51-55 " . . . 2
11 " . . . 5	23 " . . . 2	56-60 " . . . 3
12 " . . . 8	24 " . . . 6	

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TABLE V.
Age Incidence of all Cases

1 year . . . 1	12 years . . . 14	23 years . . . 15
2 years . . . 3	13 " . . . 13	24 " . . . 11
3 " . . . 3	14 " . . . 20	25 " . . . 17
4 " . . . 6	15 " . . . 20	26 " . . . 11
5 " . . . 15	16 " . . . 18	27 " . . . 14
6 " . . . 20	17 " . . . 24	28 " . . . 7
7 " . . . 18	18 " . . . 17	29 " . . . 4
8 " . . . 16	19 " . . . 19	30-35 " . . . 14
9 " . . . 22	20 " . . . 22	36-40 " . . . 14
10 " . . . 11	21 " . . . 30	41-50 " . . . 5
11 " . . . 12	22 " . . . 17	51-60 " . . . 5

TABLE VI
Both Eyes

	Treated.	Untreated.
Full vision	58 per cent.	28 per cent.
Good vision	17 "	28 "
Practical vision	30 "	24 "
Fingers	3.3 "	12 "
P.L.	0.6 "	2.7 "
Nil	0 "	2.7 "

TABLE VIA
The Better Eye

	Treated.	Untreated.
Full vision	74 per cent.	38 per cent.
Good vision	12 "	33 "
Practical vision	14 "	19 "
Fingers	0 "	6.4 "
P.L.	0 "	0 "
Nil	0 "	2.1 "