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OPHTHALMIA NEONATORUM,

ESPECIALLY IN REFERENCE TO ITS PREVENTION.

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THERE are two points in connexion with ophthalmia neonatorum to which I wish to direct your attention this evening.

The first of these—and on this portion of my subject I shall be very brief—is in regard to its treatment and *medical* prevention. There is a great similarity, but a great number of minor differences between the various applications used in the treatment of the condition. Practically all surgeons and obstetricians seem to be agreed that what should be done is the free washing away of any discharge with an antiseptic solution, and the painting of the inflamed conjunctiva with a stronger antiseptic and astringent. By common consent, nitrate of silver solution is employed for the latter purpose in varying strengths of from 2 to 5 per cent.; but some employ the mitigated (Chevallereau, 1[1]), and a few even the pure (Desmarres, 1) stick. As a lotion, corrosive sublimate is now the favourite; but others used by various surgeons are—chlorine water, which is highly spoken of, and probably with justice, by Burchhardt (2); biniodide of mercury, by Illingworth; quinine, 1·25 per cent., by Reich-Hollender (3); hydrastin (4), and more particularly formol. [The employment of formol for this purpose was, I believe, first advocated by Valude (5), who considers it superior to corrosive sublimate lotion.] Fromaget and Barabacheff (6) employ it in a strength of 1 to 2000 as a lotion, and in a solution of 1 to 200 as a pigment. In the adult the application of these stronger solutions is exceedingly painful. Kalt (1) of Paris warmly recommends Condy's fluid (1 to 5000), and appears to obtain good results, though others do not agree with him; but I suspect the explanation of his success is that by means of a neat little "laveur" he is enabled to attain to a more thorough cleansing of the conjunctival sac than is usually brought about. And this leads me to say that I believe the secret of

[1] The figures within parentheses refer to References at end of this paper.

successful treatment lies very much in this, that, provided your lotion be aseptic and non-irritating, it does not matter so very much what you use if you ensure that the pus is never left in contact with the cornea, and that none is allowed to remain in the conjunctival sac. For the purpose of attaining this end without dangerous pressure on the cornea various instruments are recommended, such as Doyen's (9) red rubber syringe, the Lagrange (8) and other hollow specula, and Kalt's laveur and head of water. There is, however, very little need of inventing instruments for the purpose, for an ordinary hairpin bent in a direction at right angles to its length answers every requirement, and is always to be obtained wherever there is a baby.

For my own part I employ frequent bathing—every two hours, or even every hour in a bad case—with lukewarm corrosive sublimate solution (1 to 6000), free smearing of the edges of the lids with iodoform ointment, and painting with nitrate of silver solution, gr. 10 or 15 to ℥j., every second day.

In regard to the medical prophylaxis, besides washing out the vagina with an antiseptic before delivery, it seems best to wipe the face of the child free of any maternal secretions before any water or antiseptic is applied at all, and while yet the lids are still anointed and protected by the vernix. After this is done, *but not till then,* the eyes should be washed with an antiseptic, and either a drop of nitrate of silver solution instilled according to Crédé's plan; or, as Tarnier (7) advocates now, the conjunctival sac should be dusted with iodoform powder. It is scarcely necessary nowadays to point out how very essential some such procedure is, nor to detain you with an account—though it is a very interesting subject—of the immense and beneficial change which has been brought about by Crédé and the universal adoption of his methods. The story of that highly gratifying chapter in medicine will be found in Fuchs's *Causes and Prevention of Blindness.* I need only say that Crédé and others reduced the proportion of cases suffering from ophthalmia neonatorum from about 10 per cent. to about ·3, or even ·1 per cent. by the use of antiseptic applications (8).

The second point with which I have to deal is the question of prophylaxis in the general. And first let me point out to those who have not studied the subject of ophthalmia neonatorum specially how very serious a matter this is. It has been estimated by different writers and investigators that of all cases of blindness which occur, about 30 per cent., more or less, are due to ophthalmia neonatorum. Some consider the proportion to be higher even than this. Thus Magnus (8) of Breslau says that 34 per cent., Katz (8) of Berlin 41 per cent., and Claisse (8) of Paris, that 46 per cent. of all cases of blindness are caused by this disease, which we must never forget is preventable or curable in 9 cases out of 10, perhaps in 49 cases out of 50.

Silex (9) states that there are 1800 cases of ophthalmia

neonatorum in Berlin every year. Most of these, of course, are cured and leave no evil result, but to the blind population of Germany generally there are added 600 persons annually who have lost their sight from this cause.

There are at present in England and Scotland, according to the census returns for 1891, no fewer than 26,264 persons registered as blind; allowing—and it is a very generous allowance—that not 30 but 25 per cent. of these were due to curable or preventable ophthalmia neonatorum, then there would have been at this moment walking about and doing their own proper work, and taking their own proper share in the joy of life and the prosperity of the nation, 6566 men and women, who are thus causelessly doomed to suffer under one of the greatest privations to which we are liable, and who are also more or less unproductive and a money-consuming burden on the community. Nor must the general practitioner turn round upon me and say that we specialists are to blame for this state of affairs, for the truth is that while the results of ophthalmia neonatorum bear so very large a proportion to the other causes of blindness, the cases of that disease brought to us are a mere drop in the bucket. I will not refer to the proportion affected of all children born in lying-in institutions, because, for obvious reasons, that would not be a fair criterion, but I give you the figures respecting all the births in and out of such institutions for a certain town. In the city to which I refer (Breslau), there took place within a certain period of time 12,000 births; 250 children, or 2 per cent., were affected with the disease (10). On the other hand, not more than 1·1 per cent. of all the cases which apply for relief at eye institutions are cases of ophthalmia neonatorum. By the kindness of the President and of Mr Berry I have looked over the records of 6000 out-patients at the Ophthalmic Department of the Royal Infirmary (3000 of the President's and 3000 of Mr Berry's), and found a percentage of only 0·37 of ophthalmia neonatorum. At my own Dispensary in Leith,[1] the social position of the patients attending which is, on an average, much lower, I find in 3000 cases a percentage of 0·7. As, however, I shall have occasion to point out to you presently, I think the proportion in the English institutions is probably a little higher. To this it must be added, that in speaking of the percentage among births I have spoken of *all* births; while in regard to cases reported to specialists I have given you the percentage among hospital patients only, for ophthalmia neonatorum is very rarely seen indeed among the better-to-do classes who consult one privately. From the disparity between the great frequency of this disease in the world and the relative rarity of its coming under the notice of specialists, you will gather, I think, two conclusions, viz., that *we* are not very much to blame for the patients who become

[1] Now the Eye Department of Leith Hospital.

blind, and that a very large percentage of the patients must get well either spontaneously or under very simple treatment.

I have referred to the fact that ophthalmia neonatorum is, in my opinion, commoner in England than it is in Scotland. This is to some extent borne out by the distinct difference in the relative proportion in the two countries of those who have been blind from birth,—for "blind from birth" in the census papers includes not merely the very rare cases of infants actually born without vision, but those much more frequent cases in which sight has been lost during infancy. In England there are 809 blind persons per million, and of these one in every six is blind from birth; in Scotland there are only 695 blind per million, and of these not more than one in 7·7 is blind from birth.

I cannot help thinking—and this is the chief consideration which led me to present this paper to you—that these facts must be taken in connexion with the very much larger proportion in England of births attended by midwives rather than by properly educated practitioners as compared with Scotland. In England, I understand, the proportion of births attended by midwives is rather more than one-half. I am not in a position to give numbers for Scotland, but I do not believe it is anything approaching to that (11). If this be so, then another evil yet has been traced to the action of ignorant midwives, and one which merits careful consideration. It is quite true that some midwives do recognise the importance of this condition, and advise their clients to consult a practitioner; but more than these are careless about the matter, and some are actively hostile to any such proceeding, and oppose it vigorously. It is looked upon by them as a reflection on their success in managing their cases, and they sometimes terrify their patients with a highly-coloured account of what will be the line of treatment employed towards the children. I have taken trouble to verify this myself, and you will find it remarked upon by other surgeons (8). In Schleswig, notwithstanding the fact that it is a punishable offence on the part of a midwife to fail to report a case of purulent conjunctivitis, the Committee of the Schleswig Association, who inquired into this matter, reported that the rule is not carried into operation at all satisfactorily (10).

Can we do anything, then, to bring about here a more satisfactory state of affairs? In certain States there are, as we have just seen, penal enactments directed against midwives who fail to report to proper authorities any case of purulent conjunctivitis in the new-born child. Austria and Switzerland took the lead in this matter in 1865; the midwife is obliged to call the parents' attention to the necessity of seeing a physician, and if they refuse to do so, she is compelled to report the case herself. The result of this has been that Horner was able to state that not a single case of blindness produced by ophthalmia neonatorum had been admitted to the Blind Asylum of Zürich for twenty years thereafter (8). The States of

New York, Maine, and one or two others in America have adopted somewhat similar laws more recently. Thus Dr Howe got passed in the Legislature of New York State the following law :—"Should any midwife or nurse having charge of an infant in this State notice that one or both eyes of such infant are inflamed or reddened at any time within two weeks after its birth, it shall be the duty of such midwife or nurse having charge of such infant to report the fact in writing within six hours to the Health Officer, or some legally qualified practitioner of medicine of the city, town, or district in which the parents of the infant reside. Any failure to comply with the provisions of this Act shall be punishable by a fine not to exceed 100 dollars, or imprisonment for six months, or both" (12).

This law, or one exactly resembling it, is now in force in eleven States of the American Union, representing a population of 28,000,000 persons. The States are—New York, Rhode Island, Maine, Minnesota, Ohio, Maryland, Connecticut, Missouri, New Jersey, Illinois, and Pennsylvania.

Personally I scarcely think that in this country such "grandmotherly" legislation is quite called for, but better education in this respect of those who are to have charge of women during puerperium should be aimed at, as well as the dissemination of knowledge throughout the general population. Several schemes for this purpose have been carried into operation in various countries. The Commission of the Schleswig Association, to which I have referred, agreed, among other matters, to petition the magistrates to issue to all parents registering the birth of a child a pamphlet entitled, "On the Danger of Inflammation of Infants' Eyes: Advice to Mothers who do not wish their children to become Blind."

In Havre a similar procedure is carried out. Fieuzal takes time by the forelock, and wishes an "Avis aux Parents" to be given to each couple registering marriage. Cohn wishes instruction in the question to be given in schools, the subject to come in as a branch of tuition under the heading of Anthropology. He admits, however, that it would not do to introduce the subject of gonorrhœa into the higher grade girls' schools!

In May 1885 a deputation of the Ophthalmological Society (13), headed by Mr Jonathan Hutchinson, who was then its President, waited upon a certain high official of the Local Government Board in order to endeavour to induce the Department to issue to all persons registering the birth of a child a printed slip having the following statement: "Instructions regarding new-born infants—If the child's eyelids become red and swollen, or begin to run with matter within a few days after birth, it is to be taken without a day's delay to a doctor. The disease is very dangerous, as if not treated at once may destroy the sight of both eyes." At first it had been also proposed that the registration officials should read these instructions to all persons in charge of women who were being attended when in labour by the medical officers under the poor-law.

There are certain objections to this plan into which we need not enter, but there is less reason to oppose the handing of such a printed slip as was suggested to persons registering births, though it is quite true that very often the advice may come too late for *that* child, and may also occasionally be given to a totally irresponsible individual. Still, what is needed is diffusion of knowledge on the subject, and this plan works in the direction of attaining that end.

And even though Government may not see its way to adopt the suggestion made, more private and local distribution of such slips as have been mentioned has been attempted here and there through the country with good effect. Thus I learn from a paper read before the North of England Obstetrical and Gynæcological Society by Mr Snell of Sheffield (14), that just such a card has been presented at the Sheffield Infirmary to every one bringing a case of ophthalmia neonatorum. And I have received information from Glasgow that a copy of a pamphlet, drawn up by Dr Russell, has for the last considerable number of years been handed to each couple registering the birth of a child. This pamphlet is printed at the expense of the Corporation, and is distributed without extra remuneration by the registrars at all but one of the district offices in Glasgow. I understand that Dundee thinks of following the good example, if indeed it has not already begun to do so.

In conclusion, in the event of the Midwives Bill becoming law, and being extended to Scotland, I would strongly urge that we should take great care that proper instruction be given to the women in regard to this vital point, and perhaps that a penal clause be added to prevent carelessness or improper behaviour in regard to it. And I would also suggest, whether that Bill (about which I express no opinion) becomes law or not, that, through our much respected Medical Officer of Health, the Corporation should be requested to issue a slip or pamphlet such as has been in use in other places. I think myself that the paragraph bearing on this point in Dr Russell's paper is very good, and might be adopted with advantage, but should be more in the form of Mr Snell's slip.

Dr Russell's paragraph runs as follows:—

Eyes.—The first thing to be done on the birth of a baby is to cleanse and gently wash the eyelids and thereabouts. If a baby's eyes run with matter and look red a few days after birth, take it *at once* to a doctor. Delay is dangerous, and one or both eyes may be destroyed if not treated immediately. The discharge is infectious.

References.

1. *Annales d'Oculistique,* December 1894.
2. *Archives d'Ophtalmologie,* March 1895.
3. *Ibid.,* November 1894.

4. Scott, *Ophthalmic Review*, December 1894.
5. *Annales d Oculistique*, February 1895 and July 1893.
6. *Archives d'Ophtalmologie*, August 1895.
7. *Annales d'Oculistique*, January 1895.
8. *Causes et Prévention de la Cécité*, Fuchs.
9. Quoted in *Centralblatt für Augenheilkunde*, Supplement 1894.
10. *Centralblatt für Augenheilkunde*, April and May 1895.
11. Hart, Obstetrical Society of Edinburgh, *British Medical Journal*, ii. 1895, 133.
12. *Gaillard's Medical Journal*, New York, December 1894; see also *Journal Amer. Med. Assoc.*, December 1894 (Bettmann), and November 1895 (Howe).
13. *Trans. of Ophthalmol. Soc.*, vol. v. 1885.
14. *Lancet*, i. 1891.

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