Palpebral gangrene and other ocular complications of varicella / by J. D. Rolleston.

With the writer's compliments.

33

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Palpebral Gangrene and other Ocular Complications of Varicella.

BY

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PALPEBRAL GANGRENE AND OTHER OCULAR COMPLICATIONS OF VARICELLA.

By J. D. ROLLESTON, M.A., M.D. (Oxon),
Assistant Medical Officer at the Grove Fever Hospital, London.

A HEALTHY boy, aged 16 months, was admitted to hospital on October 9, 1908, certified to be suffering from scarlet fever. In addition to a bright punctate erythema and an injected throat he presented a discrete eruption of desiccating varicella vesicles, one of which was situated just above the external canthus of the right eye, and had been irritated by scratching. The lids were so œdematous that the eye could not be opened. The following day the œdema was less, but a patch of gangrene had begun to appear, starting from the irritated pock and extending inwards just below the margin of the lower lid. The conjunctiva was quite intact, and did not subsequently show any signs of inflammation. On the 12th the gangrenous process involved the whole cutaneous surface of the lower lid. No fœtor was noticed. The necrotic area had now separated, and the fibres of the lower portion of the orbicularis oculi were clearly exposed. From the outer extremity of the wound a probe could be passed in a horizontal direction backwards for about an inch into the orbit. The lymph glands draining the lower lid, viz., the anterior auricular and submaxillary, became inflamed, but, whereas complete resolution took place in the former, the submaxillary adenitis ended in suppuration. Treatment consisted at first in dusting the gangrenous area with iodoform and later in the application of compresses of sodium citrate (·5%) and sodium chloride (5%) and in syringing the wound with the same lotion, with five grains of sodium citrate internally every four hours as advocated by Sir Almroth Wright. For the first few

days the child was very restless and fretful, the temperature was 102°, and the stools were loose and green. By October 14, the eleventh day of disease, the ulceration had ceased to extend. The floor of the ulcer became covered with healthy granulations, and complete cicatrisation finally resulted. Beyond the occurrence of double otorrhœa, for which scarlet fever was no doubt mainly responsible, nothing further of note occurred, and the child left the hospital in good health on November 26. On his discharge the scar measured $\frac{7}{8}$ of an inch in length by $\frac{3}{8}$ of an inch in breadth. A very slight degree of ectropion of the lower lid was present instead of the considerable deformity which had been anticipated at the height of the disease.

Contrary to what occurs in small-pox, in which, as I had many opportunities of observing in the last epidemic, considerable damage to the eye may, unless special care be taken, frequently result, serious ocular complications in varicella are extremely rare. A slight degree of ocular involvement, on the other hand, is not uncommon. In a series of 150 cases of varicella which I have seen at the Grove Hospital in the course of the last six years, the eyes were affected in 13 or 8·6 per cent. In 3 the lids were involved—2 of blepharitis and the present case of palpebral gangrene. In 10 there was catarrhal conjunctivitis. In 4 of these there was palpebral œdema resembling that so frequently seen in small-pox, and in one considerable chemosis. In only 2 was the conjunctiva actually invaded by the eruption, a single pock being situated in each case on the palpebral conjunctiva. In no instance did the pocks attack the ocular conjunctiva. All the lesions rapidly healed without leaving any trace. As a rule ocular lesions in varicella are most marked in cases in which the eruption is abundant and severe. In this respect the present case is exceptional since the eruption was unusually discrete. In the two cases in which the vesicles invaded the conjunctiva, not only was there an abundant cutaneous efflorescence, but the mucosæ of the mouth, nostrils, and vulva were also involved. In one of these cases the enanthem probably contributed to the development of a retropharyngeal abscess which occurred during desiccation. In the cases of Ebstein and J. M. Mackenzie, in

which, owing to the extent of the eruption and the severe constitutional disturbance the suspicion of small-pox was aroused, the involvement of the eyes was a noticeable feature. In one of Désandré's cases, in which the eruption was suppurative and pemphigoid, conjunctivitis and blepharitis occurred. Invasion of the conjunctiva by the eruption has been described by Henoch, Comby, and Hilbert. Cases of keratitis have been recorded by Besnier, Comby, and Oppenheimer. In those of the first two observers an indelible opacity was left. A case of acute purulent unilateral iritis with favourable issue in convalescence from ordinary chicken-pox has been published by Steffan. Panophthalmitis following irido-choroiditis in varicella gangrænosa has been noted by Hutchinson. Rotch relates without anatomical details a case of varicella gangrænosa in a child suffering from Pott's disease in which loss of sight occurred. It is of historical interest that in an eruptive disease of children designated pemphigus gangrænosus by Whitley Stokes of Dublin in 1807, and since identified by Sir Jonathan Hutchinson as varicella gangrænosa, "the sight of the eyes was destroyed in a few cases one or two days before death."

In Marfan's case severe varicella in a girl, aged 22 months, was followed by bilateral ptosis, divergent strabismus and abolition of all the ocular movements except abduction. Reaction to light and accommodation was preserved, and vision and the fundi were normal. The condition was attributed to polioencephalitis of the floor of the aqueduct of Sylvius producing nuclear palsy of both trochlear nerves and of the oculomotor root supplying the levator palpebræ superioris and other extrinsic muscles. Anti-syphilitic treatment which was at first adopted had no effect, and galvanism of the lids and nux vomica internally were substituted. Dr. Marfan has kindly informed me that within a few months considerable improvement resulted and only a slight degree of sluggishness in the levatores palpebrarum was left.

Double optic neuritis following immediately on an attack of varicella has recently been recorded by Chavernac in a boy, aged 11 years. The condition was aggravated by mercury, but rapidly improved after sub-conjunctival injections of hetol

In answer to the obvious objection that these nervous phenomena were a mere coincidence for which varicella was not responsible, it may be urged first that no other infection was present, and secondly that, though less frequently followed by nervous sequelæ than any other infectious disease, varicella has been causally connected with other nervous complications than those already mentioned, *e.g.*, infantile hemiplegia (Osler), multiple sclerosis (Bouvy), chorea (S. Mackenzie, Menko), peripheral neuritis (Gay, Allaire), and neuro-myositis (Camus and Sézary). A striking parallel may be found in gonorrhœa, whose ætiological importance in neurology is yearly becoming more evident, though until recently it was, like varicella, regarded as a comparatively trivial disorder.

Gangrene of the lids is occasionally met with in acute infections such as scarlet fever, measles, diphtheria, and influenza, as well as in diabetes and alcoholism, but its rarity in varicella is shown by the fact that only three such cases, reported by Römer, Horner, and Isola respectively, have hitherto been published, to which my own may now be added. Römer's case was that of a boy, aged 8 months, whose upper lid became reddened on the second day of the eruption, and two days later became gangrenous. As in the present case the eyeball escaped. Recovery took place with slight ectropion. In Horner's case which was that of a girl, aged 6 months, both lids were affected. Most of the skin of the lower lid and some of that of the upper separated. Recovery took place with ectropion of the lower lid. Isola's case was that of a previously healthy girl, aged 13 months, who in addition to an abundant eruption of varicella on the trunk had had some pocks on the right upper lid. Both lids became rapidly swollen and gangrenous. The globe was not affected. For the first few days the temperature was high, and the general condition was grave. Treatment consisted in bathing the lids with a 1 per cent. solution of cyanide of mercury. The gangrenous areas gradually separated and cicatrisation took place. Partial tarsoraphy was performed, and finally only slight ectropion resulted. Though not secondary to varicella, but of spontaneous origin, the case recorded by Roger and Weill under the name of benign

gangrene of the lids may be mentioned here. Their patient was admitted to hospital with the diagnosis of erysipelas. Both lids of the left eye were involved in the gangrenous process, but recovery took place with only a slight degree of ectropion of the lower lid. Staphylococci were found on bacteriological examination. No fœtor was present, and for that reason Morax, who has recorded similar cases, considers the term non-putrid necrosis as more applicable than gangrene.

A remarkable feature in my case is the limitation of the gangrenous process to a single area. All the other pocks healed uneventfully. The present case cannot therefore be regarded as a typical example of varicella gangrænosa in which the lesions are always multiple. In the absence of any family history or physical evidence of tuberculosis which has been found in so many cases of varicella gangrænosa, the co-existence of scarlatina offers a probable explanation of the occurrence of gangrene in this case.

That the punctate erythema present on admission was a manifestation of scarlet fever and not merely an accidental rash of varicella is proved by the free desquamation of tongue and skin which took place.

The association of scarlet fever with varicella is not uncommon. Since 1899, 709 cases or an annual average of 78·7 cases in which the two diseases were concurrent have been admitted to the Metropolitan Asylums Board fever hospitals. There is no doubt that pre-existing or concurrent scarlatina has an unfavourable influence on varicella. In a recent paper on accidental rashes in varicella, I attributed their relative frequency in my own cases to most of the patients being convalescent from scarlet fever which diminishes the natural resistance of the skin Still more striking is the fact that in two cases of confluent varicella reported by Neech and myself respectively, the children were also both convalescent from scarlet fever. When the two eruptions are co-existent, especially in a young child, as in the present case, the malign influence of scarlet fever is likely to be still greater. The action of scarlet fever in the present case is further illustrated by the

suppuration of the submaxillary lymph glands while the anterior auricular completely resolved.

Submaxillary adenitis of varying degree is a constant feature of scarlatina during the acute stage, and is not infrequent during convalescence (7—19 per cent. according to various authorities). The diminished resistance of these glands in the present case is thus explained.

The bacteriology of gangrenous lesions in varicella is of some interest. The possibility of virulent diphtheria bacilli being present, as in Krjukoff's case, in which, however, anti-toxin did not prevent a fatal issue, must be borne in mind. In Römer's case, streptococci and proteus vulgaris were found, the latter being probably due to a secondary infection. In Isola's case an almost pure culture of staphylococci was obtained. Adamson has reported a case in which in addition to staphylococci and streptococci B. pyocyaneus was present. In my own case special search was made for diphtheria bacilli and also for Vincent's organisms. Neither of these, however, were detected, but only streptococci and staphylococci were found.

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