PRIMARY VACCINIA OF THE EYELID *

BY

GEORGE FRAMPTON AND CHARLES SMITH

*Moorfields, Westminster and Central Eye Hospital, London,
and Department of Pathology, Institute of Ophthalmology, London*

ALTHOUGH vaccinia of the eye is an uncommon condition, over 200 cases had been recorded by 1940, and several additional cases have since been described, the most recent of which are those of King and Robie (1951) and Kline (1951). Very few of these publications have appeared in the British literature and Atkinson and Scullard (1940), who collected 91 cases between 1919 and 1940, do not record one from a British journal.

We are recording this case because of its unusual mode of infection, and because it is, as far as we are aware, the first occasion in which a vaccinal lesion has been treated with chloramphenicol.

Case Report

History.—The patient, a schoolgirl, aged 14 years (weight 8st. 7lb.), had never been vaccinated, since her father objected to it on principle. On April 4, 1951, she went swimming with a girl friend who had a primary vaccination "take" on the left arm, and on the following day noticed a "stye" on the left lower eyelid. By April 6 the left lids were grossly swollen and the eye could not be opened, and the same day she noticed an "inflamed spot" on the right cheek.

Between April 7 and 10 there was progressive development of bilateral submandibular adenitis, maximal on the right side. The left side of the face was swollen, and the left eye was painful. A pyrexia of 101° F. with dysphagia, attributed to cervical adenitis, developed on April 11 and the next day she was admitted to Moorfields, Westminster and Central Eye Hospital (Westminster Branch).

Condition on Admission.—Situated on the cutaneous surface of the lateral third of the left lower eyelid there was a typical primary vaccination, and the palpebral aperture was narrowed by the oedema of both eyelids. On the right cheek there was a primary vaccinia vesicle with surrounding induration (Fig. 1). Bilateral cervical adenitis was present.

Therapy.—Chloramphenicol⁺ orally 1 g. 8-hourly, guttae chloramphenicol (5 mg. per ml.) 3-hourly and guttae atropine sulphate 1 per cent. twice daily to the left eye, and one Benerva Compound[‡] tablet thrice daily.

Course.—24 hrs later the pyrexia had subsided to 98.6° F. with no subsequent recurrence. On April 14 the pustule on the right cheek had matured and showed scab formation. There was a purulent discharge from the left lower lid but there was no evidence of corneal involvement.

Progress was uneventful and by April 18 only a slight purulent discharge persisted from the lid lesion. The scab was desquamating, together with the involved lashes,

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⁺ Chloromycetin (Parke, Davis and Co. Ltd.). [‡] Roche Products, Ltd.

FIG. 1.—Lesions on admission to hospital.

FIG. 2.—Semi-confluent vaccinia lesions on chorio-allantoic membrane of chick. $\times 1.8$.

while the lesion on the right cheek was healing rapidly. All treatment was stopped after a total of 18 g. chloramphenicol had been given systemically, and the patient was discharged on April 22.

When she was seen again on July 3, 1951, there was a faint white scar on the left lower eyelid together with early formation of new lashes at the site of epilation. There was no ocular abnormality. (Visual acuity both eyes 6/6 with correction.)

Laboratory Investigations.—Scrapings and cultures of both lesions were made on April 13, nine days after infection. Smears showed large numbers of pus cells and mononuclear cells; no Guarnieri bodies were seen. A coagulase positive staphylococcus was isolated in the cultures from the left lid, while those from the right cheek were sterile (possibly owing to a previous application of penicillin ointment to this lesion only).

A portion of the scab from the eyelid lesion was removed and ground up in sterile broth. 0.05 ml. of this emulsion was inoculated on to the chorio-allantoic membranes of six 9-day chick embryos. Each embryo was given 100 units penicillin to inhibit any bacterial infection. After 72 hrs two of these membranes showed vaccinia-like lesions, one having three and the other two pocks. Passage of material from these membranes to further chick embryos resulted in the formation of semi-confluent vaccinia lesions (Fig. 2).

Material from the cheek lesion was taken on April 16 and emulsified in broth. This was inoculated upon a rabbit's thigh and typical vaccinia lesions developed.

Discussion

This case presents several interesting features. Unlike many of the recorded cases the vaccinia lesions developed in an unvaccinated subject infected from another person and not from a primary site in the same individual. Hence, there could be no possibility of these lesions having been modified by a primary "take" or by a residual immunity from an earlier vaccination.

Another point of interest is the rapidity with which the symptoms appeared, for the patient is quite certain that the only risk of contact had been the swimming bath incident. It would be of interest if it could be established whether the infection was by use of a towel, by direct contact, or even through the water in the baths. Unfortunately, we have been unable to ascertain by which of these routes the infection was spread.

In view of the rapid fall in temperature together with the improvement in clinical condition it might be considered that chloramphenicol has a direct effect upon the vaccinia virus. McLean and others (1949) found that chloramphenicol has no effect on vaccinia virus cultivated on the chick embryo. We believe that the improvement which occurred was attributable to the action of the drug on the secondary infection only and to the fact that any untreated vaccinal infection improves at approximately this stage.

In assessing the therapeutic potentialities of any drug it is notoriously difficult to eliminate chance effects, and in such rare conditions as vaccinia of the eyelid, where a statistical analysis is not practical, the observer must be particularly careful before attributing beneficial effects to drug action. In the papers of King and Robie (1951) and Kline (1951), the treatment was held responsible for the improvement in the patient's condition but this might well have been due to the development of immunity and to the normal healing of the vaccinal lesion.

Chloramphenicol was chosen because it has a greater intra-ocular penetration, when administered systemically, than any other available antibiotic (Langham, 1951). Great care should be taken to avoid damaging the corneal epithelium by any local treatment that may be given, because of the risk of virus inoculation of the corneal epithelium. For this reason chloramphenicol drops rather than ointment were used in the attempted local prophylaxis.

Summary

A confirmed case of primary vaccinia of the eyelid and of the face treated with chloramphenicol is described. No ocular involvement resulted. There was no modification in the development of the vaccinal lesions attributable to the use of chloramphenicol.

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