ECZEMA OF THE EYELIDS*

BY

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ECZEMA may be defined as a particular type of catarrhal inflammation of the skin, manifesting itself as vesication, weeping, or thickening of the epidermis. It can be caused by substances reaching the skin from outside the body (contact eczema or dermatitis), the subsequent reaction resulting either from a simple primary irritant effect or from an allergic mechanism. Patch tests are applicable to the latter form alone. When the causative substance is a medicament, the condition is called dermatitis medicamentosa. In the absence of a demonstrable external cause, the condition is known as constitutional eczema, and nowadays, when the main factor appears to be mental stress, is frequently termed neurodermatitis. Infective eczema or dermatitis (infectious eczematoid dermatitis) is thought to result from the irritant or allergic effect of the products of micro-organisms on the surface of the skin. Finally, any eczematous process, whether contact or constitutional, can cause a sympathetic eruption in a distant area of the skin, and patients not uncommonly report complaining only of the secondary eruption.

The eyelids are particularly susceptible to eczema, but this condition has been largely neglected in the literature. Theodore (1954, 1955) discussed some of the possible causes and Tzanck (1949) detailed the factors responsible in thirty cases of contact dermatitis. Swinny (1951) analysed 63 cases of contact dermatitis in which the eyelids were involved, though not necessarily primarily.

The present paper attempts to evaluate the incidence of eczema of the eyelids in ophthalmological practice, together with the relative frequency of the various types.

Material

During the 5 years 1951–1955, 238 cases of eczema of the eyelids were seen in the dermatological department of Moorfields Hospital, comprising 20 per cent. of the total cases referred. All were referred by ophthalmologists and 201 had attended hospital in the first place for the eyelid condition. Of the remaining 37, thirty developed dermatitis medicamentosa and seven infective dermatitis subsequent to attending hospital.

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The cases are divided into seven groups (Table I): dermatitis medicamentosa, contact dermatitis, suspender dermatitis (nickel sensitivity), infective dermatitis, neurodermatitis, constitutional eczema, and cases of apparent contact dermatitis in which the cause could not be ascertained.

TABLE I
ANALYSIS OF CASES OF ECZEMA OF THE EYELID

<table>
<thead>
<tr>
<th>Type of Eczema</th>
<th>No. of Cases</th>
<th>Percentage of Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Referred to hospital for eczema of eyelids</td>
<td>201</td>
<td>85</td>
</tr>
<tr>
<td>Referred for other reasons</td>
<td>38</td>
<td>15</td>
</tr>
<tr>
<td>Dermatitis medicamentosa</td>
<td>68</td>
<td>29</td>
</tr>
<tr>
<td>Contact dermatitis</td>
<td>47</td>
<td>20</td>
</tr>
<tr>
<td>Suspender dermatitis (nickel sensitivity)</td>
<td>12</td>
<td>5</td>
</tr>
<tr>
<td>Infective dermatitis</td>
<td>77</td>
<td>32</td>
</tr>
<tr>
<td>Neurodermatitis</td>
<td>14</td>
<td>5.5</td>
</tr>
<tr>
<td>Constitutional eczema</td>
<td>4</td>
<td>1.7</td>
</tr>
<tr>
<td>Not diagnosed</td>
<td>16</td>
<td>6</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>238</strong></td>
<td><strong>20</strong></td>
</tr>
</tbody>
</table>

Observations

1) *Dermatitis Medicamentosa.*—The reaction in this type is usually acute, with considerable swelling of the lids, not infrequently closing the eye completely. Erythema and exudation occur and, although the affected area may spread onto the surrounding skin for a variable extent, the margin remains well defined (Fig. 1). When the exudation is profuse, secondary infection is common through the frequent infectious nature of the primary
ocular condition, and sero-purulent crusting or frank pus formation may occur.

There were 68 cases of dermatitis medicamentosa (29 per cent. of the total); 44 in males and 24 in females. The age incidence was fairly evenly spread from 20 to 70 years, a slightly greater number occurring in the seventh decade. Table II shows the medicaments primarily responsible for the condition, but 21 of the cases had reacted to two or more substances, most of the multiple sensitivities being due to anti-bacterial drugs, including chlortetracycline (aureomycin) and oxytetracycline (terramycin). Penicillin, in the form of a cream more often than drops, caused the greatest number of reactions, with albucid a good second, these two substances accounting for just under two-thirds of all cases. This is in keeping with dermatological experience, local penicillin and sulphonamide therapy having long been abandoned (Carleton, 1953).

In two cases the reaction was mild and persistent, having been present for 3 and 6 months respectively. The cause, in the first, was the application of Quinolor ointment to the inside of the nose. Whether the substance reached the eyelids by retrograde spread up the lacrimal duct or via the fingers, it is not possible to say. The second case was caused by ung. hydrarg. ox. flav., which had been applied daily to the lid margin for 10 years. The patient who reacted to Nostrolene had also applied it to the inside of the nose.

Treatment consisted in bland therapy, and recovery took place in 1 to 4 weeks. Two cases had to be admitted to hospital for a week because of the severity of the reaction. In several cases gross secondary infection was aggravating and perpetuating the condition. These were treated with 0.5 per cent. neomycin ointment for a few days. This drug is recommended for the routine treatment of staphylococcal infections of the eyelids. It is quite as effective as the other antibiotics, very rarely sensitizes, and is never used systemically, so that if resistant strains of bacteria result from its use this will not affect future systemic antibiotic treatment.

(2) Contact Dermatitis.—There were 47 cases of contact dermatitis (20 per cent. of the total); 33 were industrial in origin, 28 of them in men. Of the non-industrial group, ten of the fourteen cases were female. The age incidence was fairly evenly spread from the third to seventh decades, the maximum number of cases being in the fourth decade.
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An analysis of the causes is given in Table III.

TABLE III
SUBSTANCES RESPONSIBLE FOR CONTACT DERMATITIS

| Non-industrial | Industrial \n|----------------|----------------|
|                | Primary Irritant | Allergic |
| Cosmetics      | Paint 2          | Chemicals 10 |
| Chrysanthemums | Cement 2         | Synthetic glue 5 |
| Turpentine     | Battery acid 1   | Wood dust 3 |
| Angora wool    | Lime 1           | Synthetic rubber solution 1 |
| Firework fumes | Petrol 1         | Paint 1 |
| Maceration     | Paint remover 1  | Potassium dichromate 1 |
| Syringing      | Acetone 1        | Paraphenylene diamine 1 |

In the non-industrial group, the small number of cases due to cosmetics (including one due to nail varnish, and one which occurred in a man who used his wife’s face cream) is interesting, but in keeping with contemporary dermatological experience. The maceration resulted from epiphora, the dermatitis clearing when this was cured.

In the industrial group, the chemicals responsible for the cases of allergic hypersensitivity were complex, often known only by a number. They were used in various manufacturing industries. The synthetic glues were all formaldehyde-resin glues, the sensitivity being to the formaldehyde, which escapes as fumes. Of the cases due to wood dust, two reacted to mansonia wood and one to teak.

The reaction in contact dermatitis is usually less acute than in dermatitis medicamentosa. Oedema may show itself in exaggeration and proliferation of the wrinkles of the eyelids, rather than in swelling (Fig. 2). Erythema, which may be dusky or even pigmented, and scaling are always present, as
opposed to angio-neurotic oedema and lymphoedema in which the swelling is unaccompanied by epidermal change. In the cases caused by primary irritation, contact usually occurred only once, and then by accident, the eyelids, unlike the hands, being spared frequent contact with the many irritant substances which form an integral part of civilized life. Diagnosis was, therefore, easy. When the condition was due to allergic hypersensitivity, however, diagnosis was extremely difficult. The symptoms were usually intermittent and the history long, the causative factor often being in gaseous form, e.g. essential oils of plants, formaldehyde, etc., or a substance which had hitherto been innocuous, e.g. cosmetics. One woman had helped her husband in his fur business for 25 years before she became sensitive to para-phenylene diamine, the substance with which the furs were dyed. Patch tests were helpful in this group and not infrequently enabled a specific diagnosis to be made.

Treatment consisted in defining and removing the causative factor and treating the lid with 0.5 or 1 per cent. hydrocortisone ointment. Secondary infection had occurred in some of the primary irritant cases and these were treated with a mixture of 1 per cent. hydrocortisone and 0.5 per cent. neomycin ointments.

(3) Suspender Dermatitis.—This condition, which is due to an acquired sensitivity to the nickel present in chromium-plated jewellery and clothing accessories, is the commonest cause of contact dermatitis seen in dermatological practice (Calnan and Wells, 1956). One of the features of the condition is the secondary eczematous eruption which occurs in three out of four patients, the second commonest site affected being the eyelid. Many patients do not seek medical advice until the secondary eruption is present.

Twelve such patients were referred to Moorfields hospital. None of them associated the eyelid condition with that under their suspenders, brassieres, buckles, etc., and the presence of the latter was only discovered on direct questioning. In four cases the eyelid condition began at the same time as that in the other areas and in eight it followed by periods varying from 45 years to a few months. On the eyelids the condition was frequently intermittent, and consisted of swelling, erythema, and scaling (Fig. 3, opposite). Treatment consisted in avoiding the use of chromium-plated jewellery and plastic clothing accessories, and the application of hydrocortisone ointment; recovery took place in 1 or 2 weeks.

(4) Infective Dermatitis.—As well as being the largest group (77 cases), this was the most difficult both to diagnose and treat. The physical signs consisted of exudation and crusting, with some swelling (Fig. 4, opposite). Each attack lasted for weeks or months and recurrent attacks were common. It originated usually in a tiny fissure at one or other of the canthi or in a fold of the upper lid. In 22 cases (29 per cent.) it followed an ocular condition: conjunctivitis (8 cases), styes (5 cases), blepharitis (4 cases), etc., the eye itself.
being spared in the other 55 cases. 25 cases (30 per cent.) were associated with a similar condition in other areas of the skin: retro-auricular intertrigo (18 cases), otitis externa (3 cases), sycosis barbae (2 cases), and infective dermatitis of the scalp and anterior nares (one case each). These conditions
were not necessarily present at the same time as the involvement of the eyelids, attacks being intermittent, affecting sometimes one area and sometimes another. The sexes were equally affected, but the age incidence differed from that of all other types of eyelid eczema, in that eighteen cases (24 per cent.) occurred in children under 10 years old. This is in keeping with the incidence of retro-auricular intertrigo, with which infective dermatitis of the eyelids is considered to be identical.

The nosology of this condition is obscure. Some authorities (MacKenna, 1952) consider it to be a manifestation of seborrhoeic dermatitis. Since, however, the latter condition is difficult to define and of unknown aetiology, this classification is not particularly helpful. In the present series of cases, there was no real evidence of seborrhoea other than recurrent infective conditions of the skin, and the scalp was involved in only one case, blepharitis being present in four. The present author considers this condition to be an allergic or irritant response to the local presence of micro-organisms, not necessarily pathogenic in the usually accepted meaning of the term, occurring in certain sites where two surfaces of skin are nearly or quite in apposition (eyelids, external auditory canals, nostrils, above, behind or below the pinnae) and where, for local and possibly also constitutional ("seborrhoeic") reasons, the normal auto-disinfective properties of the skin are defective. Added mild trauma, such as rubbing and scratching, tends to precipitate and perpetuate the condition and this may explain the high incidence in children.

In general the results of the analysis of these cases are in keeping with those of Theodore (1954), except that only a minority were associated with ocular abnormalities, an equal number being associated with similar purely cutaneous conditions. It is certainly agreed that it is the commonest form of chronic eyelid eczema, 32 cases (42 per cent.) persisting in a single attack for 1 to 6 months after treatment was begun, and 14 (18 per cent.) for 1 to 3 years.

Treatment is difficult, because the micro-organisms (almost always staphylococci) have to be removed, and the eczematous process has then to be treated and cleared before re-infection takes place. The most logical approach is with neomycin ointment, followed or combined with hydrocortisone ointment. Since this regime was introduced, results have been much improved, although prolonged treatment is sometimes necessary, suggesting that, in these cases, it is suppressive rather than curative.

(5) Neurodermatitis.—There were fourteen cases which were given this diagnosis. Irritation was the most prominent symptom; this was accompanied by slight swelling and considerable thickening and pigmentation (Fig. 5, opposite). True lichenification was only present in one case. The condition was remittent, the exacerbations being clearly occasioned by stress. In six cases other patches of neurodermatitis were present either before or accompanying the involvement of the eyelids. There were eleven female and three male cases, thirteen of them in the fifth to seventh decades.
Two patients were employed in jobs which they disliked and which necessitated continuous visual strain, and both recovered completely on changing their jobs. One man recovered when he changed his secretary, over whom there had been considerable difficulties of one kind and another. Eight other patients were cured by explanation, reassurance, and a judicial use of sedatives and amphetamine. One woman, who was concerned about the condition of her heart, recovered after examination and reassurance by a physician. The last two patients moved on to their fourth and fifth hospitals respectively. X-ray therapy was ineffective, but hydrocortisone ointment was useful in suppressing the irritation while more permanent measures were being explored.

(6) Constitutional Eczema.—Four cases of constitutional eczema were referred because of involvement of the eyelids, the original condition being discoid eczema in three and cheiropompholyx in one. They had been treated by their family doctors for the primary condition and had not been referred to hospital until the eyelids became involved. The condition of the eyelids settled down with bland treatment and when the original eczema was either cured or brought under control.

(7) Eczema of Unknown Origin.—There remain sixteen cases which have persisted with mild remittent or intermittent eczema of the eyelids, in spite of thorough investigation and treatment. This represents nearly 7 per cent. of
the whole. They are probably examples of the allergic contact type in which the allergen has not been discovered, such persistent and undiagnosed cases being, unfortunately, not uncommon (Epstein, 1951).

Summary

238 cases of eczema of the eyelids are analysed and subdivided into the following seven aetiological groups: dermatitis medicamentosa, contact dermatitis, suspender dermatitis (nickel sensitivity), infective dermatitis, neurodermatitis, constitutional eczema, and undiagnosed eczema.

Nearly two-thirds of the cases in the dermatitis medicamentosa group, the second largest, were caused by penicillin or albicid. It is suggested that neomycin ointment is the most effective and safest application for infective conditions of the lids and lid margins.

Contact dermatitis formed the third largest group, 70 per cent. of the cases being industrial in origin and only 10 per cent. being due to cosmetics.

Patch tests are only helpful when the reaction is due to an allergic mechanism as opposed to primary irritation, which was the case in two-thirds of the group.

Twelve cases were due to suspender dermatitis (nickel sensitivity). The patients had not reported to their doctors until the eyelids were involved and did not mention the suspender dermatitis until specifically questioned.

Infective dermatitis formed the largest group, as well as being the most difficult to treat, and was responsible for the greatest number of chronic cases. The exact cause of the eruption in this group is obscure. In the present state of our ignorance, judicious treatment with neomycin and hydrocortisone ointments offers the best chance of cure.

Fourteen cases of neurodermatitis responded well to explanation, reassurance, and, when possible, rectification of the primary cause.

In four cases, the eyelid eruption was caused by a direct spread of constitutional eczema affecting other areas of skin, although the patients were not referred for specialist opinion until the lids were involved.

Finally, sixteen cases remained undiagnosed; they were probably examples of allergic contact dermatitis, in which the allergen was not discovered.

Eczema of the eyelids comprised 20 per cent. of all cases referred from the ophthalmic to the dermatological department at Moorfields Hospital and is clearly a condition of some importance in both these specialties.

REFERENCES