

FIXED DRUG ERUPTIONS CAUSED BY DYES

H. KLEVANSKY, M.B., B.CH. (RAND), M.R.C.P. (EDIN.), *Dermatologist, Port Elizabeth*, andH. J. KINGSLEY, M.B., B.S. (LOND.), M.R.C.S., L.R.C.P., *Dermatologist, Bulawayo*

Fixed drug eruptions are characterized by the occurrence of rashes which recur in the same area whenever the offending drug is taken. A large number of drugs may produce these eruptions, the commonest being phenolphthalein, barbiturates, quinine, iodides, phenacetin and acetylsalicylic acid. Sulphonamides, penicillin and tetracyclines may produce a similar type of rash. We could not find any reference in the literature to fixed drug eruptions from dyes commonly used in foods or medicines, but we feel that these dyes may be the cause of certain fixed drug rashes seen in dermatological practice where the offending drug has escaped detection.

The commonest form of the rash is generally a well-defined plaque, which may be slightly elevated and erythematous, but which leaves a pigmented plaque on healing. In the more acute case the lesion may be vesicular or bullous. During the acute stage the patient may complain of itch or burning in the affected area. The pigmented plaques may take months or years to disappear, but they become activated when the drug is taken again.

It is a common experience in dermatological practice to see cases of fixed drug eruption where the patients deny taking any drug and where test doses of drugs given by mouth fail to reactivate the lesions. It is very likely in such cases that dyes added to foods, confectionery, etc., may in fact be the cause of the trouble, even though the patients may be unaware of having taken them. Any new cause of a fixed drug eruption is thus worth recording.

CASE REPORT

The patient, aged 31, noticed a bullous rash in 1952 the morning after taking 'sodium seconal' capsules. She had previously had the same eruption, but did not identify the cause. The acute rash subsided after a few days, but left pigmented plaques on the back and the shoulders; these took approximately two years to disappear.

In July 1962 she took tetracycline capsules for a sore throat and within a few days developed itchy, slightly infiltrated, pigmented, well-defined plaques on her back. The rash was identical to the previous rash in 1952 (though not blistered), but this time she had not taken sodium seconal, which had been identified as the cause of her previous fixed drug eruption.

The possibility of a fixed drug eruption caused by tetracycline was considered, but a year previously she had taken a different brand of tetracycline without any ill effects. The colour of the tetracycline capsules was, however, noteworthy, in that it was very similar to that of the sodium seconal capsules. In view of this the manufacturer of the antibiotic was asked where he had obtained his colours. His report was that the colours used in the tetracycline capsules were obtained from the manufacturers of the sodium seconal. Further enquiries showed that both had used the identical colouring matter which was made up of: FDC red, 2 (amaranth), FDC red, 4; ponceau 4R; FDC yellow, 5 (tartrazine).

In view of the identical nature of the two dyes, and because the patient had taken other makes of tetracycline without any ill effect, it is apparent that she is in fact allergic to the colouring matter used in the manufacture of the capsule wall. The only absolutely certain method of confirming the diagnosis in a case like this is to readminister the suspect drug to

the patient. We did not feel that it was safe to do this test at this stage, since no one can predict how severe an eruption may be produced, and it is quite common for each succeeding attack of fixed drug eruption to be more severe than its predecessor.

We attempted, however, to discover which of the three dyes caused the trouble by patch-testing the patient with the dyes in paraffin molle as a base. The patch tests were done on the plaques and on normal skin. No single test proved positive. When all three drugs were mixed together and applied to a pigmented plaque, erythema and itching did occur. Unfortunately this did not help us to discover which drug was the cause. The absence of a positive patch test in fixed drug eruption is however quite usual. We hope to readminister the dyes singly at some future date when all evidence of pigmented plaques has disappeared.

DISCUSSION

Amaranth and ponceau are red dyes and are used in jellies, sausages, confectionery, sweets and puddings. Tartrazine, which has an orange-yellow colour, is also used in sweets, cakes, custards and beverages.

Fixed drug eruptions are not uncommon in the Bantu population in South Africa and Rhodesia. The patients deny taking drugs or medicines. However, one of us (H.J.K.) has seen children who developed fixed drug eruptions after eating red sweets. The manufacturers were approached, but refused to divulge what the dye was, except to say that phenolphthalein was definitely not used.

One of us (H.K.) has also seen a case of fixed drug eruption which eventually culminated in toxic epidermal necrolysis. The patient recognized that her fixed drug eruption was due to phenolphthalein, and took great care to avoid all laxative medicines. Unfortunately, after taking a 'blood tonic', she developed her typical fixed drug eruption within half-an-hour of swallowing her medicine. Itching actually began within five minutes. Her blistering continued, she developed a positive Nikolsky sign, and her whole body was covered in a typical toxic epidermal necrolysis. She died in spite of intensive antibiotic, corticosteroid and plasma therapy. She had noticed that each succeeding attack of fixed drug eruption had become more severe and, after taking the medicine, that the time taken for the rash to come out had become shorter with each succeeding attack.

Like fixed drug eruptions, toxic epidermal necrolysis is not uncommon in the Bantu population. Most patients with toxic epidermal necrolysis deny taking medicines, and it may be possible that these cases are also due to dyes which are commonly used in foods, sweets or cold drinks.

SUMMARY

A fixed drug eruption caused by the colouring matter in the wall of a medicinal capsule is described and the possible significance of this is discussed.