Clinical assessment in the workplace: dermatitis

R. J. G. Rycroft
St John's Institute of Dermatology, St Thomas's Hospital, London SE1 7EH and Health and Safety Executive, London SE1 9HF, UK

The clinical assessment of dermatitis in the workplace is put forward as a series of four decisions: (1) Is it dermatitis and not psoriasis, tinea, scabies, etc? (2) Is it contact dermatitis and not atopic, seborrhoeic, discoid, stasis or unclassified eczema? (3) Is it irritant contact dermatitis or allergic contact dermatitis? (4) What is/are the probable cause(s)?

Key words: Clinical assessment; contact dermatitis; occupational.

INTRODUCTION

If disease could be said to paint pictures on the skin, it would paint abstracts rather than 'Monarch of the Glens'. One rash can look very much like another: the whole brain of the physician must be enlisted, rather than just the visual cortex. It is usually, at least primarily, the patient's hands that will demand most attention.

Non-dermatitis

The most notorious mimics of dermatitis on the hands are psoriasis, tinea and scabies. Psoriasis may involve the knuckles, as well as the elbows and knees, and also sometimes the palms. The well-demarcated edges to its patches, often with a 'ruff' of inwardly pointing scale, together with the absence of vesicles, are key signs. Because psoriasis may be aggravated by either physical or chemical trauma (Köbner effect), it may be precipitated on the hands by occupational factors such as friction and irritation (Figure 1).

Tinea often affects only one hand, though both feet are usually clearly involved in cases where spread to the hand(s) has occurred. The scaling in tinea of the hands tends to lurk in the palmar creases. Superficial fungal infection on the feet is encouraged by shared washing and changing facilities that may be encountered in occupational settings from coal mines to clean rooms. A mycology laboratory can confirm the diagnosis through microscopic examination and culture of skin scrapings.

Correspondence and reprint requests to: R. J. G. Rycroft, St John’s Institute of Dermatology, St Thomas’s Hospital, London SE1 7EH, UK.

The extreme itching, wide distribution, burrows and contact history of scabies will usually save one from the embarrassment of missing this diagnosis. Scabies has been known to be contracted occupationally, although only under unusual circumstances.¹

Non-contact dermatitis

Both atopic and discoid (nummular) types of endogenous (constitutional) eczema can mimic contact dermatitis on the hands, as can seborrhoeic eczema on the face. Often, simply the history length is of great help in differentiating endogenous eczema (long history) from contact dermatitis (short history), providing that the patient has a clear enough recollection of when the dermatitis started.

In contrast to what many seem to think, grossly asymmetrical involvement of the hands usually makes contact dermatitis less probable, rather than more. So does striking fingernail involvement or additional involvement of the feet. However, there are no distribution patterns of eczema on the hands that allow reliable distinctions between endogenous eczema and contact dermatitis to be made.²

In the absence of a clear-cut clinical distinction between endogenous eczema and contact dermatitis, the patient's history takes on great importance. A relatively short history of hand eczema, which gets worse during the working week and better at weekends (perhaps practically clearing on holidays), is strongly suggestive of occupational contact dermatitis.

However, as contact dermatitis persists, it tends to become less responsive to breaks from work, obscuring its original work-relatedness. Endogenous eczema on the hands is not exempt itself from some degree of occupational aggravation and recreational improve-
ment. The history therefore becomes less reliable as the eczema becomes more chronic.

Atopics who have already had hand eczema or severe widespread eczema in childhood are more susceptible than average to the effect of skin irritants. Atopics are also at increased risk of developing immediate Type I allergies to proteins such as those in rubber latex, leading to contact urticaria or protein contact dermatitis. Combinations of atopic eczema, irritant contact dermatitis and protein contact dermatitis on the hands are therefore to be expected in those such as chefs.

Irritant vs. allergic contact dermatitis

Except perhaps in the earliest cases, the distinction between irritant and allergic contact dermatitis is extraordinarily difficult to make without the aid of patch testing: sometimes a patient may even have a mixture of both. Allergic contact dermatitis is often the more severe and more vesicular in its morphology although its severity can vary from day to day, further complicating diagnosis. Irritant contact dermatitis is often less severe and less vesicular, but when well-established it can become as severe as any allergic contact dermatitis.

Simple epidemiology may, to some extent, come to a dermatologist's rescue. A contact allergen has to be very potent and very unprotected against to involve as many as a third of a workforce, while a chronic enough irritant will often affect numbers approaching this proportion. Note that irritants scarcely ever cause dermatitis in every exposed person: there is far too much variation in individual susceptibility for that.

Distant spread — e.g., the face involved, as well as the hands — is far more common in allergic than irritant contact dermatitis, eyelid swelling being particularly characteristic of allergy. Relapses within days or even hours of renewed exposure are more common in allergic dermatitis than irritant. Undulant, or relapsing and remitting courses while exposure continues are probably more common in irritant than in allergic dermatitis. However, both can respond equally well (or badly) to topical corticosteroids.

Actual causes

When the cause of dermatitis is an irritant (or irritants, since multifactorial causation is common in chronic irritant contact dermatitis), the diagnosis still has to be made by a combination of clinical acumen, knowledge of the occupational risks and assessment of the individual exposure. No routine skin test is available to confirm or deny the clinical diagnosis.

When an allergen is suspected, recourse should be made to patch testing. Clearly, patch testing may also be indicated when irritancy is suspected, but allergy still remains an alternative. It must always be remembered that diagnostic patch testing is designed as a test for allergy and not for irritancy: the essential principle of the test depends on diluting substances sufficiently to rid them of any potential irritancy, so that they provoke a reaction only if the patient has already been rendered allergic (i.e., hypersensitive) to them.

Patch testing is not, however, recommended as a test to carry out routinely in the workplace. It still remains a tricky investigation, in spite of improvements in commercially available test materials, with numerous pitfalls in interpretation. It is best carried out in specialist referral centres. This is not to say that occupational physicians might not acquire, from such a centre, special training in patch testing with allergens of particular relevance to their workforce.
Follow-up

The most appropriate test of the accuracy of diagnosis of occupational contact dermatitis should be the effectiveness of the secondary preventive measures subsequently taken. Resolution of the dermatitis is clearly the most desirable outcome and early diagnosis is capable of achieving this. As a dermatitis becomes more chronic, it can become increasingly difficult to clear. Around 10% of the most severe cases may never clear at all.7 Nevertheless, accurate diagnosis can practically always achieve improvement in a dermatitis, if not its complete clearance. This in itself may be sufficient to allow the patient to continue in their same job. And it is keeping the patient in their same job that is the prime endeavour of occupational dermatology.

REFERENCES