

Fixed Drug Eruption due to Propranolol

Elisa Zaccaria, Francesco Gualco, Francesco Drago and Alfredo Rebora

Department of Dermatology, DISEM, University of Genoa, Viale Benedetto XV n.7, IT-16100 Genova, Italy. E-mail: lonetti@unige.it

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Sir,

A 61-year-old Caucasian woman was referred to our department because of a skin eruption of one-month duration that had begun one month after the onset of therapy with propranolol. She had been diagnosed as having chronic active hepatitis due to hepatitis C virus infection, but denied any previous skin disorder. She had been treated for hypertension with 10 mg/day propranolol orally for the previous 2 months. No other medications had been taken and she had not previously received β -blocking therapy.

On examination, she exhibited a sharply marginated, round, itchy plaque of erythema and oedema, 1.5×3 cm in size with violaceous and bullous centre, localized on the external face of her right leg (Fig. 1). Laboratory disclosed leukopaenia ($2.6 \times 10^9/l$) with a normal differential count, thrombocytopenia ($84 \times 10^9/l$), a small increase in liver enzyme activity, positive IgG FTA-ABS, and positive *Treponema pallidum* haemo-agglutination test (1/160). Hepatitis C virus serology was suggestive of previous infection.

A skin biopsy specimen showed a sub-epidermal bulla with acanthosis, focal parakeratosis, hypergranulosis and focal necrosis of keratinocytes. The upper dermis was infiltrated by lymphocytes and granulocytes, but signs of leukocytoclastic vasculitis were absent. These findings were compatible with the diagnosis of fixed drug eruption. The propranolol therapy was immediately discontinued and after 2 months of treatment with topical methylprednisolone once a day, the skin lesion had cleared.

Our patient had a skin lesion that both clinically and histopathologically recalled a fixed drug eruption. The

close relationship with the propranolol treatment and its clearance after discontinuation suggest propranolol as the most likely culprit. β -adrenoreceptor blocking agents, including propranolol hydrochloride, have been repeatedly reported to induce skin eruptions (1–3). The clinical features of the latter are variable (psoriasiform (2), lichenoid (1–4), maculopapular or with lupus-like appearance (5)), but fixed drug eruption has never been described.

The number of drugs able to produce fixed drug eruptions is very large. In the UK, they mostly include non-steroidal anti-inflammatory drugs and non-opioid analgesics, sulphonamides and tetracyclines (6). This is the first case in which propranolol can be incriminated.

How β -blockers may induce skin lesions is unclear. Pochet et al. (7) demonstrated β -adrenoreceptors on both T- and B-lymphocytes, but did not explain their relationship with the sensitization to β -blockers. The expression of adrenoreceptors β_1 and β_2 differ in various tissues (8) and in various skin regions. The regional differences in their expression may explain the different types of skin reaction. Immunological mechanisms have been suggested to explain the cutaneous eruptions due to β -blocking agents, but the evidence, which included various cutaneous tests (1), failed to clarify whether a type I or IV reaction is responsible. In any case, dermatologists should be aware of the possibility of these side-effects in patients during treatment with β -blocking drugs.

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Fig. 1. Marginated, round plaque with violaceous and bullous centre on the right leg.