

## Erythema Anulare Centrifugum Associated with Disseminated Prostatic Carcinoma

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Sir,

Annular erythema is a reaction pattern to various agents, particularly drugs, infections and neoplasia (1). Shelley simplified the classification of annular erythemas into erythema anulare centrifugum (EAC), erythema chronicum migrans and erythema gyratum repens based on aetiology, morphology and clinical behaviour (2).

EAC was first described by Darier in 1916 (3) and is characterized by the presence of annular lesions with induration, slight scaling and a slow change in appearance of the rash (as compared to erythema gyratum repens, which changes rapidly over days). Anecdotal reports have appeared in the literature over the years reporting the association of EAC and malignancy. Thus far, it has been described with non-small cell lung cancer, breast cancer and haematological malignancies (4–6).

We report the occurrence of EAC in association with prostatic carcinoma in an elderly man. The eruption coincided with rising levels of prostate-specific antigen and responded to a course of oral steroids. Other reported cases of prostatic carcinoma with EAC and the literature regarding paraneoplastic erythema annulare centrifugum are discussed.

### CASE REPORT

A 74-year-old Caucasian man was referred for dermatologic opinion. Several weeks previously he developed a red, itchy rash on his trunk. He was troubled by a burning sensation in the lesions along with nocturnal pruritus. The rash evolved gradually to involve his trunk, scalp and upper arms over several weeks, with no rapid change in borders. There was no family or personal history of dermatological problems nor was he commenced on any new medication. Clinical examination of his skin showed widespread annular plaques with a trailing scale involving most of his back, scalp and a few lesions on his chest wall and limbs (Fig. 1). Mycological culture of scale was negative. Skin biopsy showed endothelial swelling of the dermal vessels with a perivascular lymphocytic infiltrate; direct immunofluorescence was negative for immunoglobulin and complement. There were no histological features to suggest cutaneous lupus.

Six years previously, he was diagnosed with disseminated prostatic carcinoma with a serum prostate-specific antigen (PSA) measuring 5117 µg/l. He had radiological and histological evidence of metastatic disease throughout his thoracolumbar spine. Following



Fig. 1. Eruption on the back with peripheral erythema and trailing scale.

initial treatment with radiotherapy to his thoracic spine, his disease was adequately controlled for nearly 5 years with monthly subcutaneous injections of goserelin. Because of rising PSA levels 5 years later, he was tried on oral androgen antagonists, all of which had to be stopped owing to gastrointestinal adverse effects. At the same time as he developed the skin rash, he developed painful wasting of both his hypothenar eminences, which proved to be due to paraneoplastic ulnar neuropathy. Both of these problems were temporally associated with a rising PSA level.

Topical clobetasol propionate 0.05% (Dermovate<sup>®</sup>) was prescribed. Owing to deterioration in his condition, he was commenced on prednisolone 10 mg twice daily as a third line agent to control his malignancy. Within a few days the skin rash started to clear and he reported an improvement in his upper limb pain. When seen in the dermatology clinic after 6 weeks, all of the plaques were flattened and scaling had disappeared. There was a mild residual erythema and postinflammatory hyperpigmentation on the trunk. However, the serum PSA continued to rise and 4 months later measured 523 µg/l.

### DISCUSSION

Although patients with coexistence of EAC and malignancy have been described, a causal association between them is by no means well established. Mahood followed-up 24 patients with EAC for a mean period of 5.9 years and did not find any instances of malignancy (7). In an earlier study predating the current classification, White & Perry reported that no significant increase

in the incidence of neoplasia was found between 113 patients with erythema perstans and 113 age- and sex-matched controls with psoriasis (8); seven patients and six controls had malignancy. Temporal relationship of onset of rash with the neoplasm could be predicted in only three of the patients. Both studies concluded that extensive investigation looking for a malignant lesion is not warranted in patients with EAC.

Prostatic carcinoma is one of the commonest malignancies in older males in whom it is the second commonest cause of death from cancer (9). Nevertheless, it has only rarely been associated with EAC; we could identify only two previously reported cases (4, 10). Krook & Waldenström (4) described a 75-year-old man who had EAC, which presented at the same time as his prostatic carcinoma and which responded to oestrogens. Surgical removal of the diseased prostate gland resulted in clearing of EAC in a patient reported by Dupré et al. (10).

In our patient, the appearance of his skin rash can be correlated with his disseminated prostatic carcinoma, as demonstrated by rising serum levels of PSA. The presentation in this case differs from previous reports in that annular erythema occurred several years after the diagnosis of prostatic malignancy was made and, also, it occurred while the patient was on hormonal therapy which had cleared the rash in previous cases. The response to oral steroids is interesting: the patient reported by Ota et al. also received oral prednisolone for pemphigus, which could have contributed to clearing his annular erythema. It would support an immunopathological mechanism as suggested by Holt in a patient with erythema gyratum repens (11) perhaps via a breakdown in self-tolerance, as can be seen in neoplasia or the presentation of a tumour-associated antigen.

In conclusion, we report a third patient who developed

EAC in association with prostatic malignancy. Although this association may be coincidental, the correlation between onset of the rash and recurrence of malignancy as evident by rising PSA levels in the serum suggests a causal link in this individual.

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