Regression of Paraneoplastic Rash after Lung Cancer Chemotherapy

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An early-stage (T2bN0M0) squamous cell lung cancer was diagnosed in a 60-year-old man with a 50-pack-year smoking history and treated with radiofrequency ablation. Five months later, the patient presented with a 6-week history of a diffuse, pruritic nodular rash involving the trunk, legs, and face (Fig. 1A–C). The results of routine blood tests were unremarkable,

Figure 1. Paraneoplastic skin rash showing discrete erythematous nodular elements (A–C). (D) Haematoxylin and eosin sections of the diagnostic skin biopsy showing inflammatory changes with evidence of a CD3-positive infiltrate on immuno-histochemistry (E). (F) Complete resolution of the skin rash following chemotherapy, corresponding to a radiologic partial response (G).

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and a TB Elispot test was nonreactive. Skin biopsy revealed inflammatory changes (Fig. 1D) with dense CD3-positive lymphocytic infiltrate (Fig. 1E) that was consistent with erythema induratum. Despite the use of topical steroids and phototherapy, the rash persisted without improvement. Restaging investigations revealed recurrence of his lung cancer with multiple, bilateral pulmonary metastases. After commencement of carboplatin and gemcitabine chemotherapy, his rash and pruritus quickly improved until complete resolution (Fig. 1F), which coincided with confirmation of a good partial response to chemotherapy (Fig. 1G).

Erythema induratum is a nodular eruption associated with chronic infection, autoimmunity, or malignancy. The typical nodular skin lesions are secondary to a process of hypersensitivity vasculitis triggered by either endogenous or exogenous antigens. The Bazin subtype is thought to be secondary to exposure to mycobacterial antigen, whereas the Whitfield type is secondary to other etiological factors. In our patient, the onset of skin symptoms coincided with relapse of his lung cancer and remission of the rash anticipated an impressive radiologic response to the chemotherapy, further substantiating a pathogenic link between the two entities. Cancer-related dermatoses are rare in lung cancer. However, unlike paraneoplastic neurological syndromes, in which immune-mediated damage can lead to neuronal death and permanent loss of function, cutaneous manifestations can be reversed by the provision of tumor-directed therapies.

The rapid and durable response of the cutaneous symptoms observed in our patient, who was previously unresponsive to best supportive measures including corticosteroids and phototherapy, suggests that the presence of these types of paraneoplastic manifestations of malignancy are an important indication for commencement of systemic anticancer therapy in the palliative setting.

References