Bleomycin-Induced Flagellate Pigmentation

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We report a case of bleomycin-induced flagellate pigmentation. The salient features of this dermatitis are reviewed.

Although bleomycin-induced flagellate pigmentation is not a rare occurrence, there have been few reports on it in the literature. Because the etiology of the eruption is usually apparent and the symptoms are self-limiting, patients rarely present to the dermatologist for evaluation and treatment. We report a patient with bleomycin-induced flagellate pigmentation.

Case Report

A 51-year-old Latin American woman with a 27-year history of psoriasis was diagnosed with breast cancer. She was started on chemotherapy with 5-fluorouracil, cyclophosphamide, and methotrexate. One month later, she developed a pleural effusion, and a pleural catheter was placed for 3 bleomycin injections. Three days after the last injection, the patient developed a severely pruritic linear eruption on the trunk that was erythematous and edematous.

One week after the onset of this eruption, the patient presented to our dermatology clinic. Results of a physical examination revealed multiple linear brown streaks on her back (Figure), chest, and proximal upper extremities. The eruption was diagnosed as bleomycin-induced flagellate dermatitis. No treatment was given because the eruption was no longer symptomatic. At follow-up 6 months later, the eruption had completely cleared.

Flagellate pigmentation on the back.

Comment

Bleomycin-induced flagellate pigmentation is not a rare occurrence. It was first reported by Moulin et al[1] in 1970. Subsequent studies showed an incidence rate of 8% to 66% in patients treated with bleomycin for various reasons.[2] A study by Yagoda et al[3] revealed that one third of 274 patients treated with bleomycin developed hyperpigmented streaks on the skin, mainly on areas of pressure and trauma. The eruptions were considered to be dose dependent.

Bleomycin is a cytostatic, antineoplastic antibiotic derived from *Streptomyces verticillus*. Developed in Japan in 1965 by Umezawa,[4-6] it inhibits the incorporation of thymidine into DNA and is widely distributed throughout the body. Hydrolase inactivates bleomycin in all organs except the skin and the lungs, which do not possess this enzyme. This is considered to be the reason why most side effects of bleomycin occur in the lungs and on the skin.[4]

Some authors believe that the linear lesions could be induced by rubbing or scratching, which causes the drug to leak out of blood vessels.[5] Other authors have tried unsuccessfully to reproduce the lesions by these means.[7-9]

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The histopathology of the eruption in its acute phase shares similar findings with a fixed drug eruption. They both include vacuolation of basilar epidermis, melanin incontinence, and scattered dyskeratotic keratinocytes.[4] Later on, the eruption shows only postinflammatory changes.[10] Studies indicate that the number of melanocytes do not increase, although electron microscopy identified increased melanosomes.[6]

There is no treatment available for this condition. The eruption generally clears within 6 to 8 months; however, it may recur with increased intensity on rechallenge.[4]

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