

## CASE REPORT

# A Unique Drug Rash: Bleomycin-induced Flagellate Erythema in a Patient with Hodgkin Lymphoma

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### Summary

Flagellate erythema is characterized by “whiplike” linear streaks, usually following bleomycin chemotherapy or is associated with consumption of shiitake mushrooms, dermatomyositis, adult onset still disease as well as human immunodeficiency disease. Here, we describe a case of bleomycin-induced flagellate erythema in a patient with Hodgkin lymphoma.

**Key words:** *Bleomycin-induced flagellate rash, flagellate erythema, Hodgkin lymphoma*

### Introduction

Flagellate erythema is a unique patterned eruption, which is described as “whiplike” linear streaks, usually following bleomycin chemotherapy or is associated with consumption of shiitake mushrooms, dermatomyositis, adult onset still disease as well as human immunodeficiency disease.<sup>1,2</sup> In severe cases, it may cause intolerable pruritus. The onset of the eruption is between 1 day to 9 weeks after the administration of bleomycin in a dose dependent manner.<sup>3</sup> During the recovery phase, the lesions may have a brown appearance, commonly known as flagellate pigmentation.

### Case Report

We herein report a case of a 44-year-old man with refractory Hodgkin lymphoma stage IV, having completed 4 cycles of ABVD chemotherapy (adriamycin, bleomycin, vinblastine, dacarbazine) and post autologous stem cell transplant. He presented with multiple hyperpigmented, haphazard, linear streaks over his back (Fig 1a and 1b).

The lesions appeared 2 weeks after the first cycle of chemotherapy. He denied any pruritus or pain. His presentation was compatible with the diagnosis of bleomycin-induced flagellate

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erythema. No treatment was given as the patient was asymptomatic.

**Figure 1.** (a&b) Multiple hyperpigmented, haphazard, linear streaks over his back



### Discussion

Bleomycin is an antitumor drug, commonly used in the treatment of Hodgkin lymphoma and squamous cell carcinoma.<sup>4</sup> Adverse effects of bleomycin predominantly occur in the lungs and skin due to bleomycin hydrolase, which is a cytosolic cysteine proteinase enzyme for inactivation of bleomycin.<sup>5</sup> Bleomycin-induced

flagellate erythema was first reported by Moulin et al in 1970 with the reported incidence rate of 8-22%.<sup>6</sup> However, it is infrequently reported in clinical practice.

The appearance of bleomycin-induced flagellate erythema can occur irrespective of any routes of administration: intravenously, intramuscularly, subcutaneously or even intrapleurally.<sup>7</sup> The exact pathogenesis of bleomycin-induced flagellate erythema remains uncertain. A number of theories have been postulated with regards to the etiology of bleomycin-induced flagellate erythema. Heat-recall and reduced epidermal turnover allowing prolonged melanocytes and keratinocytes contact may contribute to the appearance of the rash.<sup>7</sup> One of the theories is that scratching causes vasodilatation with local bleomycin accumulation in the skin leading to subsequent fixed drug eruption.<sup>8</sup>

The rashes are self-limiting and normally improve 3-4 months following discontinuation of bleomycin.<sup>9</sup> However, permanent post-inflammatory hyperpigmentation is a common complication.<sup>10</sup> Antihistamines and topical corticosteroid can be used for symptomatic relief.<sup>11</sup>

### Conclusion

Bleomycin-induced flagellate erythema is a rare and unique adverse effect. This report emphasizes the significance of awareness and early recognition of this classical rash by the clinician in order to make an appropriate judgment on modifying or discontinuing the chemotherapy regime.

### Conflict of Interest Declaration

The author have no conflict of interest to declare.

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