Letter to the Editor

[The Editor is not responsible for the views expressed by the correspondents]

An Unusual Case of Flagellate Pigmentation Following Chemotherapy

SIR, — Flagellate pigmentation is a realtively uncommon but specific cutaneous adverse effect of bleomycin observed in clinical practice[1]. A 14 years old female having non seminomatous germ cell tumor of ovary was referred to dermatology out-patient department for some skin lesions after 7 days of taking first dose of chemotherapy. She was given intravenously bleomycin (30 units) single dose, etoposide 100mg/m^2 on day 1 to 5 and cisplatin 20mg/m^2 on day 1 to 5. On examination, the patient had multiple, mild pruritic, non tender, hyperpigmented, linear lesions over trunk, extremities, neck along line of pressure or scratching (Figs 1&2). The lesions ranged from 2to3mm in width and 2cm to10cm in length. Routine blood investigations were normal. Nails and hairs were normal. No clinical features of dermatomyositis, still's disease, no history of shiitake mushroom ingestion, child abuse were present. Dermatographism could not be elicited. Patient was treated with topical steroid and oral antihistamines. Causality assessment was carried out using the World Health Organisation-Uppsala Monitoring Centre criteria and Naranjo's Scale. The scale shows bleomycin was the probable cause of this adverse drug reaction. Other two drugs were not found to be the culprit drug.

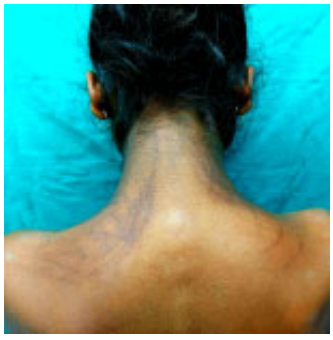

Fig 1 — Flagellate pigmentation over back and neck

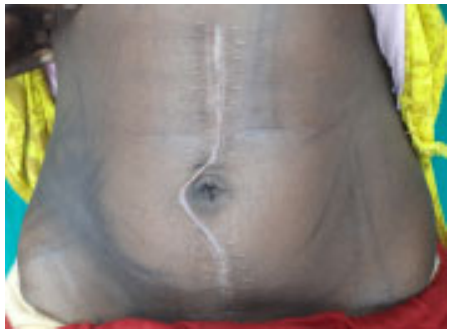

Fig 2 — Flagellate pigmentation over abdomen

Bleomycin is a chemotherapeutic antibiotic. Its mode of action is to block DNA uptake of thymidine in the S-phase of the cell cycle. It was first isolated by Umezawa in 1965 from soil fungus *Streptomyces verticillus* near coal mine in Japan[2]. It has been used for Hodgkin's lymphoma, certain germ cell tumor, sclerosis of recurrent pleural effusion. It has been used in various skin conditions like wart, hemangiomas, vascular malformations, cutaneous malignancies, condyloma accuminata, leishmaniasis cutis[3]. Bleomycin is inactivated by enzyme, bleomycin hydrolase, which cleaves ammonia group from bleomycin. Skin and lung lissue lack this enzyme which may account for most susceptible organ for bleomycin toxicity[4]. Skin toxicity includes Raynaud's phenomenon, hyperkeratosis, nailbed changes, palmoplantar desquamation[5].

Flagellate dermatitis is occurrence of multiple whipped out lesions over multiple body areas. The term flagellate was derived from latin term *flagellum due to its typical presentation*[6]. Flagellate pigmentation due to bleomycin is specific but rare cutaneous adverse effect which appears 12-24 hours to 6 months after first exposure. Other drugs like peplomycin, docetaxel, bendamustine, trastuzumab can also cause flagellate dermatitis[6]. The exact pathogenesis is still unknown and different theories like accumulation of toxic level of bleomycin due to low level of hydrolase, microtrauma due to scratching, increased melanogenesis, heat recall and reduced epidermal turnover allowing prolonged melanocyte -keratinocyte contact are proposed. It is usually dose dependant and occurs irrespective of route of bleomycin administration or malignancy being treated. It usually occurs after 90 to 285 units cumulative dose of bleomycin but very few cases have been reported with dose as low as 15 units given perenterally[5,6]. In this case the patient developed flagellate pigmentation after 30 units of intravenous bleomycin which is a rare occurence. So, physician must be aware of this characteristic cutaneous adverse effect of bleomycin even in low dose perenteral administration. We are reporting this case due to its rarity in a very low dose of bleomycin.

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