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Short Report

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Supravenous serpiginous hypermelanosis: Docetaxel induced; A rare occurrence

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Abstract

Serpentine Supravenous Hyperpigmentation (SSH) was the term coined by Hrushesky to describe cutaneous hypermelanosis overlying the venous network noticed following intravenous infusion of chemotherapeutics like 5-Fluoracil commonly and also rarely with other drugs like docetaxel. This starts as red linear eruptions commonly over the injected veins followed by increased pigmentation. This is a benign and self-limiting condition which does not require active intervention. We describe an elderly male who developed linear serpentine erythematous eruption over the superficial veins after treatment with intravenous Docetaxel (DCX) for metastatic hormone sensitive prostatic carcinoma.

Keywords: Drug eruptions; Skin changes; Taxanes.

Case report

A 69-year-old man with Type 2 diabetes & Systemic hypertension was diagnosed with metastatic hormone sensitive metastatic prostatic acinar carcinoma with raised prostate specific antigen (more than 100 ngm/mL). There was H//O orichiectomy 13 months ago. He also had leucopenia, raised blood sugar / CRP levels. MRI revealed multiple diffuse osteloytic lesions. He was treated with monthly chemotherapeutic regimen of intravenous Docetaxel (DCX) injection.

After receiving his initial dose of docetaxel infusion along the right upper limb, he experienced pain around the injection site which subsided in few days. Following this, he noticed a red line spreading along the line of drug infusion. The erythematous line was gradually replaced by dark-colored streaks (Figures 1 and 2). The next doses of the drug (100 mg/m^2 in a 250 ml polyvinyl chloride-free sodium chloride 0.9% bag over 1 hour) were subsequently administered along the veins of the left forearm and similar flow of events were observed. Cutaneous examination revealed linear streaks of hyperpigmentation along the tributaries of antecubital vein of right and left upper limb. Few lichenoid papules were observed overlying the recently infused left forearm. They were neither painful nor pruitic. No regional adenopathy. Examination of the palms, soles and available mucosa was within normal limits.

Routine investigations revealed neutropenia, raised CRP with other blood and biochemical parameters being unremarkable. Histopathology of a punch biopsied specimen of the involved skin revealed basal layer degeneration, pigment incontinence, dermal melanophages, focal band-like and peri vascular mononuclear infiltrate. Based on the clinical findings and histopathological features, a diagnosis of docetaxel-induced supravenous serpentine dermatitis was made. The patient was prescribed topical mometasone furoate cream, bland emollients with oral vitamin C 1000 mg per day.

Taxanes are drugs used in many types of cancer, including breast and lung cancer. The most common side effects of these drugs are neutropenia and mucositis. Signs of skin toxicity are observed in about 65% of cases and include alopecia, hypersensitivity reactions, persistent supravenous erythematous eruption, nail changes, scleroderma reactions and others. Su-

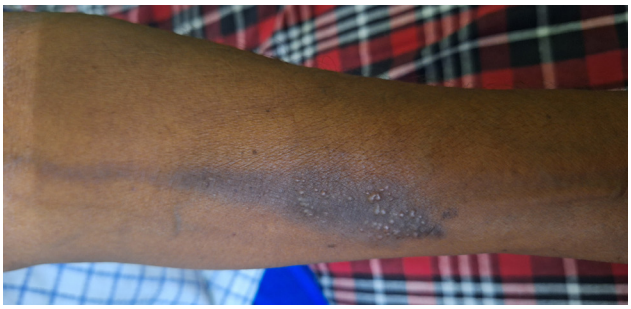

Figure 1: Linear streaks of hyperpigmentation studded with papules along the antecubital vein of left upper limb.

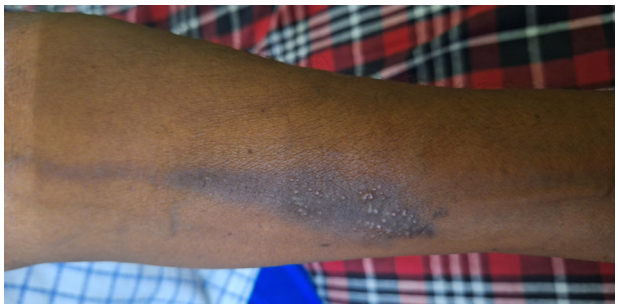

Figure 2: Resolving linear hyperpigmentation along the tributaries of right median cubital vein

pravenous serpentine hyperpigmentation described by Hrushesky is a uncommon sequel of infusion of variety of cytotoxic drugs such as nitrogen mustard, cyclophosphamide, actinomycin, doxorubicin, vinca alkaloids, taxanes, and bortezomib [1-3]. Also called as Persistent Supravenous Erythematous Eruption" (PSEE), "Persistent Serpentine Supravenous Hyperpigmented eruption" (PSSHE), and "persistent serpentine supravenous hyperpigmentation [4]. The exact mechanism of pigment induction is unknown but it has been postulated that these anti - malignancy drugs cause loss of integrity of vascular endothelium. This leads to leakage of the drug from the vessel to the overlying epidermis leading to hyperpigmentation by causing direct toxicity to the keratinocytes and melanocytes. According to another theory, the incriminated drugs accumulates within the skin overlying the vasculature thereby inducing a localized and rarely generalized hypersensitivity reaction.

Histopathologically, the condition may show vacuolar interface dermatitis with isolated occasional necrotic keratinocytes, papillary dermal edema, and superficial perivascular inflammatory infiltrates. Based on the pattern of the disease, the differential diagnosis include thrombophlebitis, cutis marmorata, erythema ab igne, livedo reticularis, and lichen planus seen along the superficial skin veins. The underlying vessels of serpentine supravenous hyperpigmentation remain patent and non-tender unlike thrombophlebitis where the underlying vein is occluded by thrombotic clot and is tender. The above mentioned differential diagnoses can be excluded by thorough history taking and complete clinical examination. Docetaxel may cause an array of side effects such as alopecia, acral erythrodysesthesia, onycholysis, discolouration of the nail plate, urticaria, angioedema and persistent erythematous rash that follows the venous pathway [5,6]. These skin lesions may appear between 24 hours and 15 days after infusion of the cytotoxic drug and disappear spontaneously in weeks or months. Important drugs that are incrminated in this reaction include 5-Fluorouracil, docetaxel, vinorelbine and dacarbazine [7,8]. Physicians should be aware of this cutaneous side effect of cytotoxic agents owing to their widespread use in the treatment of malignancies. Some articles defend the use of oral corticosteroids before and after chemotherapy, with the objective of suppressing the inflammatory response [9]. Prevention of this eruption can be achieved through a saline infusion before and after chemotherapy. In long chemotherapeutic sessions, lasting over one hour with vesicant drugs like DCX, peripheral venous access should be replaced by central access. Topical or systemic corticoids along with antihistamines has been found to be useful [10]. This case is presented here to familiarize cutaneous physicians regarding adverse effects of taxanes and measures to be adopted.

Declarations

Patient consent: The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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Conflicts of interest: There are no conflicts of interest.

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