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Case Report

Docetaxel-induced ichthyosiform eruption following third cycle of chemotherapy in oropharyngeal carcinoma: a case report

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ABSTRACT

Docetaxel is a taxane chemotherapeutic agent associated with various dermatologic adverse effects. Ichthyosiform eruption is a rare and often underrecognized cutaneous manifestation of docetaxel therapy. We report the case of a 61-year-old female patient with oropharyngeal carcinoma who developed a generalized ichthyosiform eruption after receiving her third cycle of docetaxel-based chemotherapy. The patient presented with widespread dry, scaly skin resembling a fish-scale pattern. Laboratory investigations including thyroid function tests and lipid profile were within normal limits. The patient was not on statin therapy or other medications known to cause ichthyosiform eruptions. A diagnosis of docetaxel-induced ichthyosiform eruption was established based on clinical presentation, temporal relationship with chemotherapy, and exclusion of other etiologies. The patient was managed conservatively with intensive emolliation and keratolytic agents with subsequent improvement. Ichthyosiform eruption is a rare but clinically significant adverse effect of docetaxel chemotherapy that can impact patient quality of life. Clinicians should be aware of this presentation to facilitate early recognition and appropriate management. This case adds to the limited literature on this uncommon dermatologic toxicity and emphasizes the importance of systematic evaluation to exclude metabolic and drug-induced causes of acquired ichthyosis.

Keywords: Docetaxel, Ichthyosiform eruption, Acquired ichthyosis, Chemotherapy-induced skin toxicity, Taxanes, Oropharyngeal carcinoma

INTRODUCTION

Docetaxel is a semisynthetic taxane derivative widely utilized in the treatment of various solid malignancies including breast, lung, prostate, gastric, and head and neck cancers.[1,2] Its mechanism of action involves stabilization of microtubules, thereby inhibiting cell division and inducing apoptosis in rapidly dividing cells.[3] While docetaxel demonstrates significant antineoplastic efficacy, it is associated with a spectrum of adverse effects, among which cutaneous toxicities are particularly common, occurring in 50–80% of patients.[4,5] The dermatologic adverse effects of docetaxel are diverse and include alopecia, nail changes (onycholysis, subungual hemorrhage, paronychia), hand–foot syndrome, hyperpigmentation, radiation recall dermatitis, and various types of rashes.[6,7] However, ichthyosiform eruption remains a rare and inadequately characterized manifestation of docetaxel therapy, with limited case reports in the medical literature.

Ichthyosiform eruptions are characterized by generalized dry, scaling skin resembling fish scales (from the Greek word ichthys, meaning fish). While hereditary ichthyoses

are well-described genetic disorders, acquired ichthyosis can occur secondary to various systemic conditions including malignancy, metabolic disorders such as hypothyroidism, nutritional deficiencies, medications (particularly statins and nicotinic acid), and inflammatory diseases.

Recognizing chemotherapy-induced ichthyosiform eruptions is clinically important because of their impact on quality of life, implications for treatment continuation, and the need for appropriate supportive management. We present a case of docetaxel-induced ichthyosiform eruption in a patient with oropharyngeal carcinoma, diagnosed after systematic exclusion of other etiologies, and review the relevant literature on this uncommon adverse effect.

CASE REPORT

A 61-year-old postmenopausal woman presented to the outpatient dermatology clinic with progressively worsening dry, scaly skin involving multiple body areas. She had been diagnosed with squamous cell carcinoma of the oropharynx three months earlier and was receiving palliative chemotherapy with docetaxel (80 mg in 500 mL normal saline).

Cutaneous manifestations developed approximately one week after the third cycle of docetaxel. The patient reported diffuse skin dryness that evolved into prominent scaling with a characteristic fish-scale appearance. The distribution was generalized, involving the trunk and extremities. She reported mild-to-moderate pruritus without preceding erythema, vesiculation, or mucosal involvement.

Her medical history was otherwise unremarkable only for the recently diagnosed oropharangeal malignancy. There was no personal or family history of dermatologic disease, ichthyosis, psoriasis, or atopy. She denied thyroid disease, dyslipidemia, diabetes mellitus, renal disease, or autoimmune disorders. Concomitant medications included cisplatin and standard antiemetic prophylaxis; she was not receiving statins, retinoids, nicotinic acid, hydroxyurea, or other drugs associated with ichthyosiform eruptions.

Physical examination

Dermatologic examination revealed generalized xerosis with fine to medium-sized, polygonal, adherent fishlike scales predominantly involving the trunk and extensor surfaces of the extremities, producing a classic ichthyosiform pattern. There was no erythema, excoriation, lichenification, or evidence of secondary infection. Mucous membranes were normal.

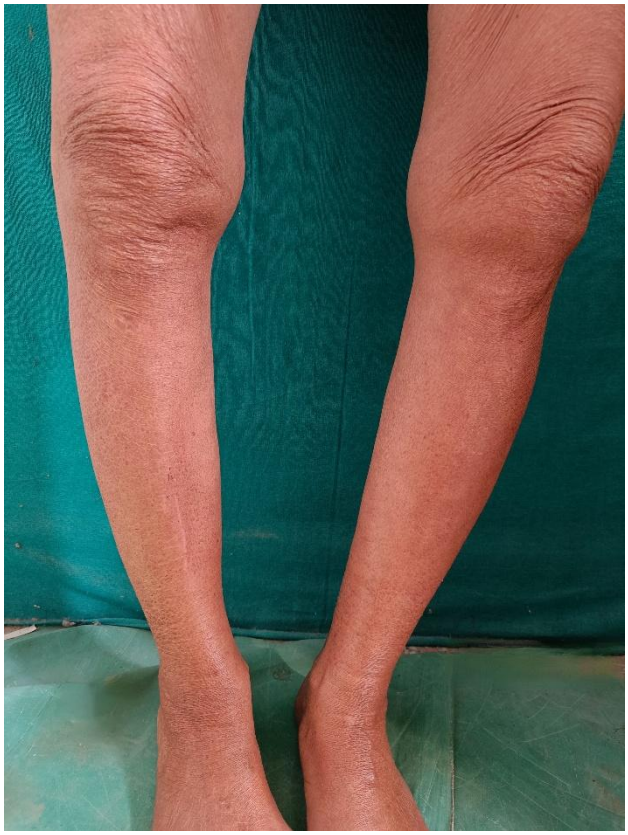

Figure 1: Clinical photograph demonstrating generalized ichthyosiform eruption with a fish-scale pattern.

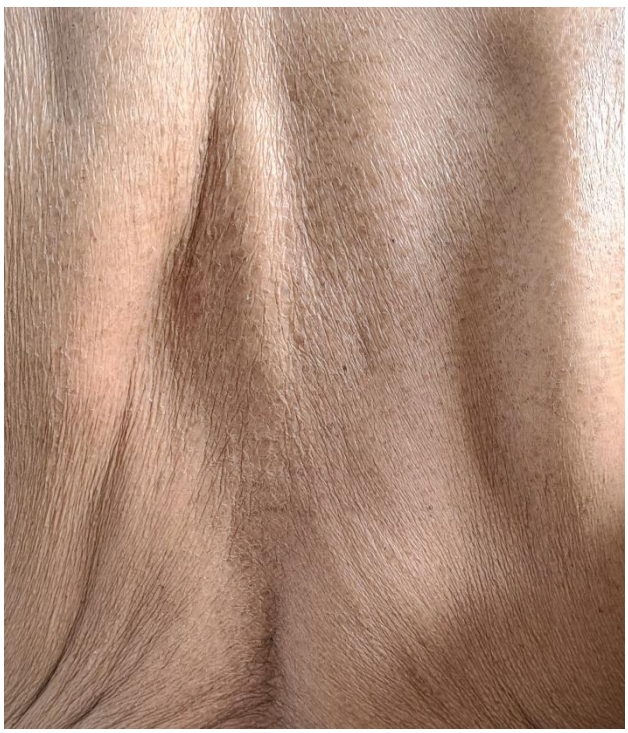

Figure 2: Close-up view of INTERSCAPULAR skin showing characteristic ichthyosiform scaling.

Diagnostic assessment

Laboratory investigations, including thyroid function tests and lipid profile, were within normal limits, effectively excluding common metabolic causes of acquired ichthyosis.

Diagnosis

Based on the characteristic clinical presentation, temporal relationship with docetaxel administration, exclusion of metabolic causes, and absence of other causative medications, a diagnosis of docetaxel-induced ichthyosiform eruption was established.

Therapeutic intervention and outcomes

Management was conservative and focused on restoration of the skin barrier. The patient was treated with frequent application of thick emollients containing ceramides, petrolatum, hyaluronic acid, and 5% urea, applied at least three to four times daily. She was advised to take brief lukewarm baths, use gentle soap-free cleansers, and apply emollients immediately after bathing. Oral antihistamines were prescribed for pruritus, and adequate hydration was encouraged.

After multidisciplinary discussion, chemotherapy with docetaxel was continued at the same dose.

DISCUSSION

This case illustrates docetaxel induced ichthyosiform eruption, a rare dermatological manifestation of taxane chemotherapy. Cutaneous adverse effects occur in up to 80% of patients receiving docetaxel, but ichthyosiform eruptions remain a rare and underreported manifestation.[4,5] The delayed onset after multiple cycles suggests a cumulative toxic effect rather than an acute hypersensitivity reaction.

The pathophysiology is not fully understood but may involve direct keratinocyte toxicity, disruption of epidermal differentiation leading to retention hyperkeratosis, interference with ceramide synthesis and lipid processing affecting the stratum corneum barrier and leading to increased transepidermal water loss, altered eccrine sweat gland function, and cytokine-mediated inflammatory effects on keratinocyte differentiation and proliferation.[8,12]

Management is primarily supportive and focuses on restoration of skin barrier. Aggressive emolliation, keratolytic therapy, and patient education regarding gentle skincare and bathing practices. Systemic retinoids may be considered in severe refractory cases but were not required in our patient. The decision to continue, modify or discontinue docetaxel should be individualized based on severity and impact on quality of life, response to supportive measures, onconlogic benefit, availability of alternative regimens, patient preference and functional status.[13,14]

Recognition of docetaxel-induced ichthyosiform eruption has important clinical implications. Distinguishing it from paraneoplastic or metabolic causes prevents unnecessary investigations or interventions. Severe xerosis and scaling can significantly impact patient comfort and quality of life during cancer treatment. Early recognition and aggressive management can mitigate this burden. Adequate management of cutaneous features may improve patient tolerance of chemotherapy and adherence to treatment protocols. These cases underscore the value of collaboration between oncology and dermatology in managing complex cutaneous adverse effects of cancer therapy. Patients receiving docetaxel should be counseled regarding potential dermatologic toxicities and instructed on preventive skincare measures including regular emollient use.

CONCLUSION

We report a case of docetaxel-induced ichthyosiform eruption in a 61-year-old woman receiving chemotherapy for oropharyngeal carcinoma, diagnosed after systematic exclusion of metabolic and drug-related causes. This rare dermatologic adverse effect typically develops after multiple cycles of docetaxel and presents with generalized dry, scaly skin resembling acquired ichthyosis. Recognition of this entity is clinically important to avoid misdiagnosis as paraneoplastic manifestation or metabolic disorder and to facilitate appropriate supportive management.

Oncologists and dermatologists should maintain awareness of this uncommon complication of taxane chemotherapy. Management consists primarily of intensive emolliation and keratolytic therapy, with most patients able to continue chemotherapy with aggressive supportive dermatologic care. This case contributes to the limited literature on docetaxel-induced ichthyosiform eruption and emphasizes the importance of multidisciplinary collaboration in managing cutaneous toxicities of cancer therapy.

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