International Journal of Research in Dermatology
Vamja CJ et al. Int J Res Dermatol. 2017 Jun;3(2):293-295
http://www.ijord.com

DOI: http://dx.doi.org/10.18203/issn.2455-4529.IntJResDermatol20172215

Case Report

Erythroderma: a marker for visceral malignancy: rare case report

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Received: 16 February 2017
Accepted: 23 March 2017

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ABSTRACT

Skin can provide a vital clue to diagnosis of internal disease. Exfoliative dermatitis (erythroderma) is an uncommon potentially serious inflammatory skin disorder characterized by an intense, widespread erythema and variable scaling. It results from aggravation of pre-existing skin disease, or may be caused by drugs or neoplasms. Although various paraneoplastic dermatoses may occur in association with carcinoma lung, erythroderma as the sole presenting feature is infrequently reported in literature. Herein we describe an elderly male in whom recalcitrant erythroderma led to the diagnosis of squamous cell carcinoma lung with fatal outcome.

Keywords: Erythroderma, Lung cancer

INTRODUCTION

Erythroderma, first described by Hebra in 1868, refers to erythema and scaling involving more than 90% body surface area.[1] It may be primary occurring due to drugs, hematological malignancies, cutaneous T cell lymphoma/ Sezary syndrome or rarely, solid organ tumors. However, erythroderma secondary to exacerbation of an underlying skin disease like psoriasis, lichen planus, pityriasis rubra pilaris, atopic and seborrhoeic dermatitis etc. is more common. Determining specific etiology is often challenging but essential as it impacts disease course and management options.[1,2]

CASE REPORT

A 55 years old male presented with complaints of severe progressive itching, redness and scaling over body since seven months. History of significant weight loss, anorexia and smoking (four cigarettes per day) since five years was elicited. He denied appearance of any skin lesions or drug intake or any respiratory complaints prior to onset of current rash. He had been treated with topical and systemic corticosteroids, emollients, cyclosporine, acitretin and weekly methotrexate since four months without any improvement. General examination revealed bilateral pitting pedal edema and inguinal lymph node enlargement (1.5 ×1.5 cm discrete firm, non-tender, with normal overlying skin). Systemic examination was unremarkable. Dermatological examination showed diffuse erythema and fine scales over face, trunk, extremities, and scalp (Figure 1). Ebonisation and Beau`s lines on nails were noted with ectropion, epiphora and bilateral conjuctival congestion on ocular examination. Clinical differential diagnosis of erythroderma due to some internal malignancy, cutaneous T cell lymphoma and idiopathic erythroderma (red man syndrome) were considered and investigated accordingly. All routine investigations were within normal and, serial skin biopsies from multiple sites for histopathology and immunohistochemistry for T and B cell markers were inconclusive. Fine needle aspiration cytology of inguinal lymph node did not show any atypical lymphocytes. HRCT (chest and abdomen) revealed lobulated heterogenous enhancing mass within apical segment of right lower lobe of lung suggestive of neoplastic etiology. Bronchoscopy guided lung tissue biopsy (Figure 2 and 3)

was suggestive of moderately differentiated squamous cell carcinoma (Grade II) with tumor composed of sheets of neoplastic squamous cells having abundant pink cytoplasm and large anisokaryotic nuclei. Thus final diagnosis of paraneoplastic erythroderma associated with squamous cell carcinoma lung was reached. Patient was treated with chemotherapy regimen constituting Injection Etoposide 100 mg and Injection Cisplatin 40 mg in normal saline administered as a 3 day cycle given 3 weeks apart. Unfortunately he succumbed during the third cycle due to chemotherapy related complications (renal failure).

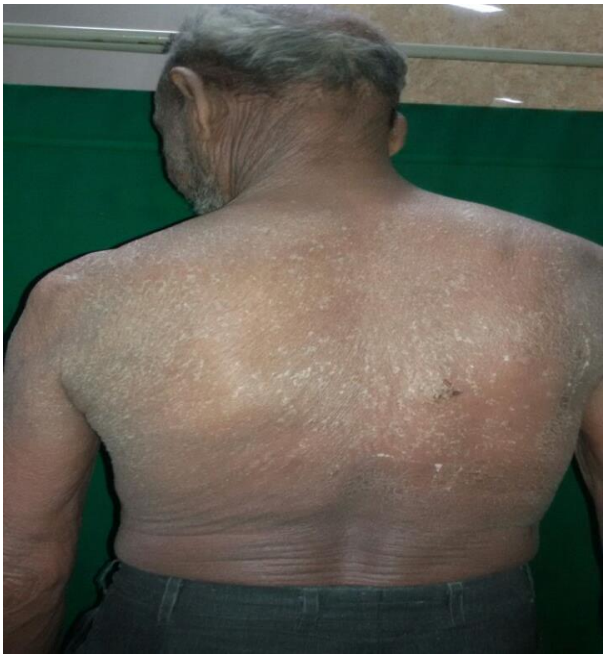

Figure 1: Patient of erythroderma showing generelaised erythema and scaling.

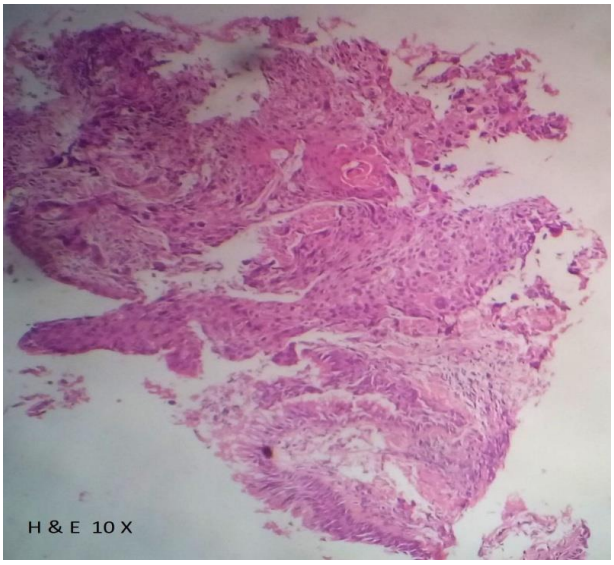

Figure 2: Histopathology [H & E stain] (10X) – showing tumor composed of sheets of neoplastic squamous cells.

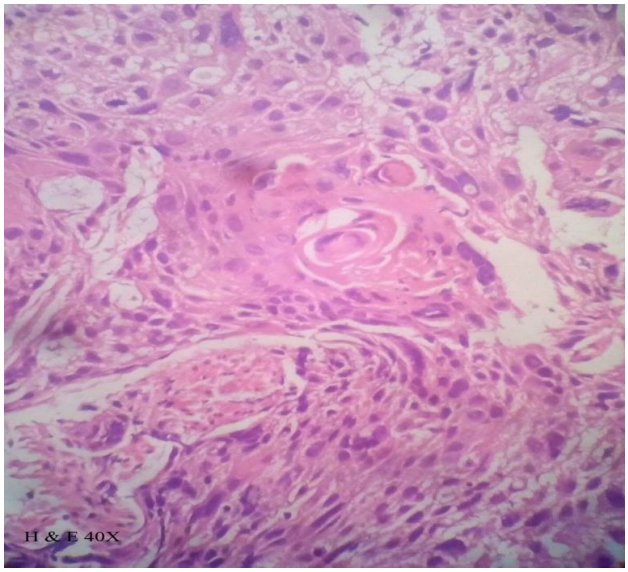

Figure 3: Histopathology [H & E stain] (40X) – showing sheets of tumor cells having abundant pink cytoplasm and large anisokaryotic nuclei in lung biopsy.

DISCUSSION

The incidence of erythroderma is relatively high in the Indian sub-continent, although epidemiological data on a global scale are lacking. It usually presents in the fifth and sixth decades of life with a male preponderance. Despite an exhaustive list of skin and systemic diseases and adverse cutaneous drug reactions which can potentially lead to exfoliative dermatitis up to 20% of patients may have an unrecognized cause at initial presentation. This extensive inflammatory skin disorder may be associated with an underlying malignancy in 1% to 11% of patients.[3-10] The most common malignancy in this setting is cutaneous T-cell lymphoma comprising mycosis fungoides and Sezary syndrome. Although case reports of erythroderma in association with carcinoma of liver, prostate, colon, breast and thyroid have been infrequently described, its occurrence as a presenting feature of solid tumors of the lung is extremely rare.[6-12] Gupta et al reported a case of erythroderma secondary to carcinoma lung with presenting features of pain in lower extremities with thickening and desquamation of skin in palms.[13]

Paraneoplastic dermatoses usually become apparent at the same time as the tumor and run a parallel course. However in some cases in which the cancer remains asymptomatic for many years (as seen in our patient), the skin changes may appear long before the cancer is diagnosed.[14] The pathophysiology of this manifestation is poorly understood; it is believed to be immune-mediated. Most tumor associated cutaneous lesions including erythroderma do not show neoplastic cells on histopathology and are attributed to a complicated interaction of cytokines (Interleukins 1, 2, 8) and adhesion molecules (VCAM, ICAM, e-selection) causing

binding, transmigration and infiltration of lymphocytes resulting in increased epidermal turnover.[15,16] Alternatively, tumor induced host immune response or antigenic cross-reactivity between tumor and skin may cause skin changes.[17] Other cutaneous paraneoplastic syndromes documented with lung cancer include acanthosis palmaris, dermatomyositis, erythema gyratum repens, migratory thrombophlebitis (trousseau sign), paraneoplastic acrokeratosis (bazex syndrome), hypertrophic pulmonary osteoarthropathy, and leucocytoclastic vasculitis.[11]

Our patient had exfoliative dermatitis for seven months without other signs and symptoms of underlying systemic disease. He did not have any pre-existing skin lesion or drug intake that could be implicated as causative factors. Another feature which pointed to paraneoplastic etiology was the complete lack of response to conventional treatment modalities like steroids, methotrexate and cyclosporine. Generally skin biopsy is a useful tool for identifying the cause of erythroderma and can demonstrate characteristic findings in cutaneous lymphomas, keratinization and vesiculobullous disorders. Here, the non-specific findings on histopathology and negative immunohistochemistry further strengthened our suspicion of systemic malignancy.

Management of erythroderma is largely supportive and includes maintenance of ambient temperature, hydration, nutrition and prevention of sepsis and electrolyte imbalance. Specific treatment, course and prognosis depend on the cause. Removal of inciting factors (drugs and tumors) usually results in improvement. However, in our case the unresectable nature of the lung tumors and poor tolerance to chemotherapy culminated in fatal outcome.

In conclusion, this case illustrates the key clinical features of exfoliative dermatitis and emphasizes that dermatoses with unclear etiologies warrant thorough evaluation with an age-appropriate workup for malignancies. A high index of suspicion in patients with prolonged, rapidly extending erythema and scaling may facilitate early diagnosis of a potentially treatable malignancy and improve outcomes.

Funding: No funding sources
Conflict of interest: None declared
Ethical approval: Not Required

REFERENCES

1. Hebra F. On Diseases of the Skin. London, UK: New Sydenham Soceity; 1868.
2. Milavec-Puretić V, Zorić Z, Zidanić M, Drčelić A, Štajminger G. Exfoliative erythroderma. Acta Dermatovenerologica Croatica. 2007;15:103–7.
3. Li J, Zheng HY. Erythroderma. A clinical and prognostic study. Dermatol. 2012;225(2):154–62.
4. Akhyani M, Ghodsi ZS, Toosi S, Dabbaghian H. Erythroderma: a clinical study of 97 cases. BMC Dermatol. 2005;5:5.
5. Chakraborty. Lymphoma as a cause of exfoliative dermatitis. Indian J Dermatol. 1983;28(3):121–3.
6. Curth HO. Dermatoses and malignant internal tumors. AMA Arch Derm. 1955;71:95-107.
7. McGaw B, McGovern VJ. Exfoliative dermatitis associated with carcinoma of the lung. Aust J Dermatol. 1956;3:115-9.
8. Nicolis GD, Helwig EB. Exfoliative dermatitis: a clinicopathologic study of 135 cases. Arch Dermatol. 1973;108:788-97.
9. Rosen T, Chappell R, Drucker C. Exfoliative dermatitis: presenting sign of internal malignancy. South Med J. 1979;72:652-3.
10. Gentele H, Londin A, Skog E. Dermatitis exfoliativa. Acta Derm Venereol. 1958;38:296-302.
11. Lomholt H, Thestrup-Pedersen K. Paraneoplastic skin manifestations of lung cancer. Acta Derm Venereol. 2000;80:200-2.
12. Protopsaltis I, Droussou A, Katsantonis I, Roussous N, Manoludaki K, Arvanitis M, et al. Breast cancer presenting as paraneoplastic erythroderma: an extremely rare case. Case Rep Med. 2014;2014:351065.
13. Gupta A, Gupta S, Awad OAA, Estrada-y-martin RM. Case In Point: Exfoliative dermatitis: A presenting sign of lung cancer. Lung Cancer. 2005.
14. Chung UQ, Moscella SL, Zembowicz A, Liu V. Clinical and pathological findings of paraneoplastic dermatoses. J Am acad Dermatol. 2006;54:745-62.
15. Sigurdsson V, de Vries IJM, Toonstra J, Bihari IC, Thepen T, Bruijnzeel-Koomen CAFM, et al. Expression of VCAM-1, ICAM-1, E-selectin, P-selectin on endothgelium in situ in patients with eryhtroderma, mycosis fungoides and atopic dermatitis. J Cutan Pathol. 2000;27(9):436-40.
16. Ramos –E Silva M, Carvalho JC, Carneiro SC. Cutaneous paraneoplasia. Clinics in Dermatol. 2011;29(5):541-7.
17. John N, Ahern E, Chakraborty A. Paraneoplastic rash as the presenting feature of squamous cell carcinoma of the lung. Age Ageing. 2007;36(4):468-9.

Cite this article as: Vamja CJ, Belgaumkar VA, Deshmukh NS, Tolat SN. Erythroderma: a marker for visceral malignancy: rare case report. Int J Res Dermatol 2017;3:293-5.