Case Report

Erythroderma secondary to chronic plaque psoriasis: A case report

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ABSTRACT

Erythroderma is characterized by erythema with a variable degree of scaling, which is a rare and often potentially life-threatening condition. A case of a 60-year-old female patient with erythroderma secondary to chronic plaque psoriasis is presented here. Itching, dryness, and irritation were present, and the patient presented with widespread erythematous, scaly plaques. Diabetes mellitus and hepatitis C Virus infections are known to have contributed to the severity of her condition. Systemic corticosteroids, antihistamines, emollients, and supportive care combined with glycemic control constituted treatment. The clinical presentation, diagnostic, and management issues of the disease are illustrated in this case. This case highlights the importance of recognizing and treating erythroderma associated with psoriasis at an early time and with multimodality treatment in patients who are comorbid. Improving outcomes requires routine follow-ups.

Key words: Chronic plaque psoriasis, Dermatitis, Erythematous plaques, Erythroderma, Scaling

Chronic plaque psoriasis is a long-term inflammatory skin condition that is characterized by distinct, scaly, erythematous plaques on the scalp and body's extensor surfaces. When wounded, the lesions may bleed and occasionally itch or sting [1]. More than 80% of cases of psoriasis are chronic plaque psoriasis, making it the most prevalent type. More than 90% of the body's surface is covered in erythema and scaling, which are symptoms of erythroderma [2]. Erythroderma is an uncommon but severe complication of psoriasis, occurring in about 1–2% of psoriatic patients. It is an uncommon but serious syndrome that can have life-threatening consequences and cause severe systemic symptoms. It typically results from a number of illnesses, including skin disorders, drug use, and, less frequently, secondary to certain cancers [3] In order to facilitate its care, it is crucial to understand the etiology. An aggravation of an underlying dermatitis, most frequently psoriasis (23%), atopic dermatitis, or contact dermatitis, is the most frequent cause of erythroderma [4]. It is a severe form of skin irritation that affects all or most of the skin's surface. The condition poses a serious risk to the patient's life because the majority of patients are older, and skin involvement is common [5].

We are reporting this case because of its rarity and complexity due to associated comorbid diabetes mellitus and hepatitis C virus (HCV) infection. Awareness of such complex cases might lead to more effective clinical planning and outcomes.

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CASE PRESENTATION

A female patient of age 60 years was admitted to the dermatology ward with chief complaints of red, raised, scaly lesions over both upper and lower limbs, the trunk, and the scalp for 6 months. There was a history of swelling of the feet up to the ankle joint for 3 months, which was the pitting type. The patient had a history of diabetes mellitus for 9 months and is on regular medication with Tab. Metformin 500 mg.

The vitals of the patient are shown in Table 1. Clinical findings revealed multiple well-defined erythematous plaques of size 1 × 1 cm–9 × 10 cm present over both upper and lower limbs, trunk, buttocks, and scalp. The patient was apparently normal 6 months back, and the complaint started as red, raised lesions of pea size, which gradually increased in size and attained the present size, which initially started on the scalp and then progressed to involve bilateral upper limbs and lower limbs, the trunk, and sparing of the palms, soles, and genitals associated with scaling, which is silvery white scales with a bed full of scales (copious) associated with itching, dryness, and irritation (Fig. 1).

The physician advised some lab investigations, where it was shown that she was reactive to HCV. Her blood sugar levels were

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Table 1: Vitals of the patient since admission

Vitals	Value					
	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6
Temperature (F)	98.2	96.2	98.2	92.6	97.8	97.8
Respiratory rate (min)	20	18	20	18	18	18
Pulse rate (bpm)	80	80	86	101	88	90
Blood pressure (mm/Hg)	140/80	140/90	130/90	140/90	140/90	130/90
GRBS (mg/dL)	517	380	380	180	222	101

GRBS: Glucose random blood sugar

Figure 1: (a-c) Erythroderma secondary to chronic plaque psoriasis

increased. The lipid profile test revealed a slight increase in low-density lipoprotein level. The patient was finally diagnosed with erythroderma secondary to chronic plaque psoriasis.

The patient was treated with Inj. Decadron 1 cc IV OD, Inj. Pantop 40 mg IV OD, Tab. Atarax 10 mg OD, Cap. Maxepa OD, moyzen liquid TID, and proteinex powder BD (2 tablespoons in 1 glass of milk). The patient was referred to general medicine due to an increase in random blood sugar levels, and the physician prescribed Tab. Metformin 500 mg BD, Inj. H. Actrapid, and Inj. H. Mixtard according to glucose random blood sugar. Later, CLOP-S nano lotion BD was added to the treatment, and Tar-18 shampoo was recommended.

DISCUSSION

Although chronic plaque psoriasis is a common dermatological disease, erythroderma, a severe complication, is still rare and potentially fatal. Erythroderma is characterized by widespread erythema and scaling, involving more than 90% of the body's surface area, as in this patient. Infections, drugs, or environmental factors can precipitate exacerbations of this disease, which is typically secondary to other skin diseases such as psoriasis. Our patient was suffering from the chronic plaque form of psoriasis, which for 6 months now had been intensifying. The severity of the patient's psoriasis may have been exacerbated by serious underlying medical diseases such as diabetes mellitus and HCV positive. Chronic viral infections like HCV and diabetes both impair immune responses and may cause heightened inflammatory reactions, which may exacerbate psoriasis and trigger erythroderma.

Treatment of erythroderma due to psoriasis includes treatments for the skin disease itself as well as treatments aimed at other systemic symptoms that may develop. Supportive treatments were initiated with antihistamines (ATARAX) and emollients in the form of CLOP-S nanolotion to hydrate the skin and smoothen scale on cutaneous lesions, as well as systemic corticosteroids, dexamethasone (DECADRON), to induce anti-inflammatory responses. Comorbidities at times have to be adequately addressed for better treatment of patients with psoriasis. As an illustration, she needed to have controlled elevated blood sugar levels. Still, the medication's response on the patient's part was not prompt, meaning that the fight against this condition will involve patience and perseverance.

Differential diagnoses for erythroderma include drug-induced erythroderma, atopic dermatitis, sezary syndrome, and pityriasis rubra pilaris. Erythroderma causes disruption of the skin barrier, resulting in such complications as fluid and electrolyte disturbance, hypothermia, and secondary infection. One may encounter serious morbidity and even mortality, particularly among elderly patients or those with comorbidities.

Miyashiro *et al*. documented erythroderma in leprosy, highlighting the manner in which immune modulation can lead to extensive skin involvement [2]. Khaled *et al*. mentioned worse prognoses in erythroderma with systemic comorbidities, which is similar to the present case [3]. A case study by Joe *et al*. pointed out the difficulty in treating erythrodermic psoriasis in a resource-constrained environment. A 31-year-old male patient received standard treatments such as methotrexate and topical corticosteroids because of restricted access to biologics. Against all odds, the patient improved clinically with supportive care and simple pharmacologic measures [6]. Teran *et al*. presented a rare pediatric case of nail and joint-involving erythrodermic psoriasis, and they stressed the need for early systemic treatment. Our case, too, demonstrated extensive erythema and scaling with added complications of diabetes and infection with HCV. In contrast to Teran's case, our patient had no joint or nail manifestations

but needed systemic steroids and supportive therapy. Both cases underscore the need for early diagnosis and treatment of comorbidities to achieve better outcomes [7]. Wu *et al*. highlighted the importance of caution in the management of moderate-to-severe plaque psoriasis, especially with comorbidities and biologic therapy, because of the risks of acute erythrodermic flares. In our scenario, erythroderma in a patient with diabetes and HCV most probably exacerbated systemic inflammation. Unlike Wu's patient who developed niacin deficiency, in our patient, the flare seemed to be more of a consequence of underlying comorbidities. Both scenarios reinforce the importance of thorough care and timely intervention [8].

CONCLUSION

This case presents the severity of erythroderma due to chronic plaque psoriasis and emphasizes the need for early diagnosis and treatment. Early application of systemic steroids and supportive management can mitigate complications. Careful management of comorbid diseases such as diabetes and hepatitis C is also important because these conditions have the potential to worsen psoriasis. A multidisciplinary care plan ensures full care. Proper therapy allows significant relief from symptoms and a good quality of life. Regular follow-up is important for long-term care, and more studies are required to improve the knowledge about the disease and its best management.

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