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Diagnosing and Managing Venous Eczema in the Elderly - A Case Report

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Abstract

Eczema and itching are common in the elderly, impacting quality of life. Dry skin and dermatitis due to irritants, allergy and other inflammatory skin diseases are known causes, however non-dermal etiology should also be kept in mind. Chronic venous insufficiency seen in the elderly, can be a cause of skin inflammation, severe itching, and ulceration. Such cases of eczema may not respond satisfactorily to conventional treatment. Underlying venous insufficiency should be evaluated and managed, especially in lower limb eczema and pruritis in the elderly.

Keywords: ***Eczema; Itching; Venous insufficiency; Inflammation; Elderly***

1. Introduction

Itching and eczema are common problems in the elderly. Though often not serious, these cause distress and compromised quality of life [1]. Eczema or dermatitis often necessitates the repeated or prolonged use of topical corticosteroids that can contribute to skin atrophy in the elderly. Use of moisturizers is standard practice, often increasing the economic burden for many elderly people. The itching prolongs the inflammation, increases pigmentation, can cause surface abrasions and ulceration, and lead to secondary bacterial infections [2].

Dry skin is the commonest cause of itching in the elderly. Other common skin causes include contact dermatitis, and less commonly atopic dermatitis, psoriasis, lichen planus, urticaria, or drug hypersensitivity [1,3]. However non-dermal causes should also be kept in mind while evaluating eczema and itching in the geriatric population. This could include venous stasis as an etiology, due to chronic venous insufficiency common in the elderly [4]. This possibility should be kept in mind while evaluating eczema of the lower limbs.

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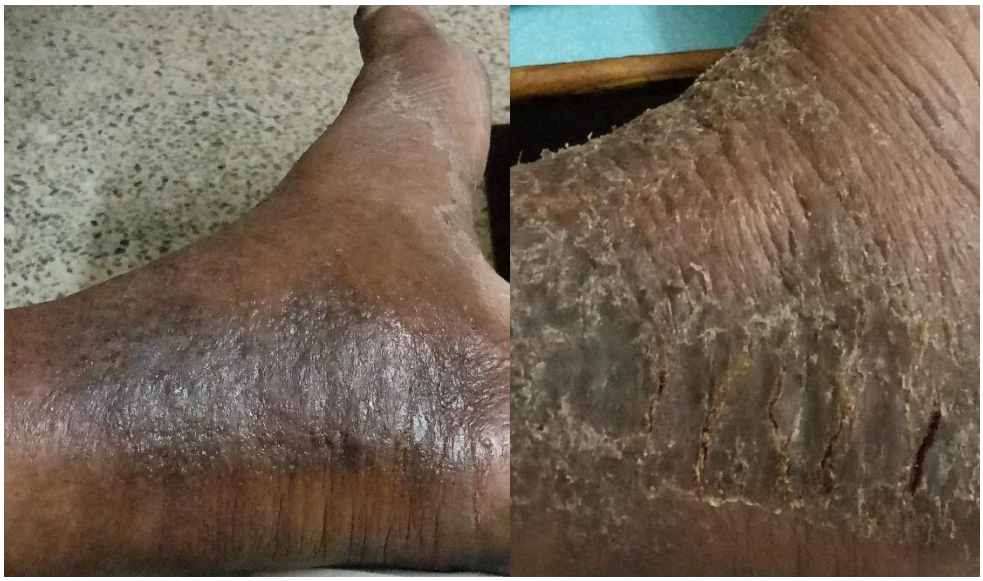
2. Case Report

An 87-year-old male patient presented with severe itching and inflammation of the skin on the medial side of his left ankle. The patient gave history that for the last 2 weeks, he had been scratching the area and applying moisturizer twice a day. He also said that he had been having dry skin for many years (possibly age related) and due to that he often gets itching of skin on his arms and legs, for which he applies moisturizers/emollients. The itching is much worse in the nights and even prevents him from getting good sleep. The patient had hypertension controlled on telmisartan 40 mg once a day. Apart from that the patient was healthy, active and had no other complaints or comorbidities.

On the first examination done by video-consult, the area was found to be eczematous, discolored, and inflamed. (FIG. 1a). The patient was advised to apply a topical corticosteroid ointment twice daily to decrease local itching and inflammation. He was also given levocetirizine (antihistamine) in the evening for relief from worsening of itching at night. However, the patient perceived little relief after a week. The patient then came for an in-clinic consultation. It was found that there was increased pigmentation and the surface of the eczematous area had started to show signs of ulceration (FIG. 1b). The patient complained of a mild ache in his foot on standing. There was also some swelling of the area that was pitting in nature. There were no visible varicose or tortuous veins in the area.



(a) **(b)**

FIG. 1. **a) Eczema on left medial ankle, b) Superficial ulceration in eczematous area.**

Clinical suspicion of venous insufficiency was aroused, and the patient was advised routine blood investigations of complete blood count, blood sugar, HbA1C, kidney and liver function tests, thyroid functions tests, and D-dimer. The patient was started on flavonoid tablets (90% diosmin and 10% hesperdin) 1000 mg/day. The patient was given an oat meal based moisturizer for the eczematous area, along with a colloidal silver hydrogel for application on the areas showing cracks and signs of ulceration. He was advised to take pregabalin 75 mg at bed time. In addition, the patient was advised to avoid prolonged standing, and keep leg elevated during sitting. Compression stocking was not advised due to the eczema and superficial ulceration. The blood

tests were normal, with D-dimer levels of 700ug/L that was normal according to age correction cut-off for D-dimer (age x 10 ug/L) [5].

Within one week, the patient reported significant relief in itching, with improved sleep. The eczema also showed improvement, with no signs of swelling or ulceration (FIG. 2). The patient said he was comfortable and had resumed his daily walk and all activities. The treatment was continued for 2 more weeks after which pregabalin and flavonoid was gradually withdrawn. Patient was asked to continue the moisturizer twice daily. He was referred for a Doppler venous ultrasound to evaluate for venous insufficiency, and also a 2-D echocardiography to assess cardiac function. The 2-D echocardiography showed normal age-related cardiac function. The colour Doppler of both lower limb venous system showed small incompetent perforators in both limbs mid and lower calf, with no evidence of venous thrombosis.

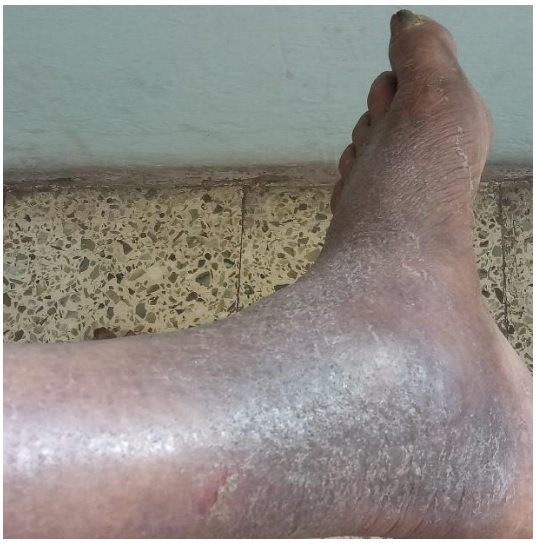


FIG. 2. **Improvement in eczema after management of venous insufficiency, inflammation, itching, and ulceration.**

3. Discussion

Itching and eczema or dermatitis are common problems in the elderly [1]. Dry skin is the commonest cause, and the itching can often lead to or perpetuate the inflammation (itch-scratch cycle), and also cause wounds and ulceration as well as secondary bacterial infections [2,3]. The diagnosis is often made as a primary dermal condition, and topical corticosteroids are prescribed. However, it is important to keep chronic venous sufficiency (CVI) and venous stasis as a possible cause for itching and eczema in elderly patients especially in the lower limb.

Eczema due to CVI, also called stasis dermatitis or venous dermatitis, is thought to affect 20% of those aged 70 and over [4]. It occurs due to poor circulation and fluid buildup in leg veins due to weak vessel walls and impaired functioning of venous valves, commonly seen in the elderly. The veins become stretched and dilated, causing back pressure and capillary distension, leading to plasma leaking into the tissues, which provokes an inflammatory reaction resulting in venous eczema and skin irritation. Often the superficial veins may not show visible tortuosity or varicose features, however an eczema present in the lower limb in an elderly person that is non responsive to moisturizers and topical steroids, should arouse a suspicion of an underlying venous cause.

Flavonoids act by enhancing *venous* tone, reducing capillary permeability, and improving lymphatic circulation, and therefore are useful agents for managing chronic venous insufficiency [6]. Pregabalin has been seen to reduce severe itching and improve sleep, especially in cases non responsive to antihistamines and corticosteroids [7]. Gabapentinoids like pregabalin have been seen to safely relieve chronic pruritis due to mixed etiology in the elderly. Though topical steroids are often prescribed along with moisturizers for eczema in the elderly, their long term and repeated use is associated with adverse effects like skin atrophy and infections [2]. Oat meal based creams offer a combination of moisturizing, anti-inflammatory, and anti-pruritic properties in addition to improving skin nourishment and hydration, therefore are a useful option for managing eczema and pruritis in the elderly [8]. In case of ulceration or development of superficial skin wounds in the eczematous areas due to itching, colloidal silver hydrogels are an alternate choice to using antibiotics [9]. These hydrogels form a protective semi-occlusive coating, maintain hydration, and prevent contact with irritants. They also impart antimicrobial action without problems of resistance, and thus act as effective healing agents when used timely.

D-dimer levels should be done in these patients to help rule out venous thrombosis. Such patients should be evaluated for kidney, liver and thyroid function, and diabetes to rule out comorbidities. CVI maybe associated with the presence of cardiovascular disease or risk factors [10]. After management of eczema, and a laboratory work up with blood tests, this patient was recommended to be taken up for venography with Doppler ultrasound for assessment and treatment of venous insufficiency, and assessment of cardiac function with echocardiography.

4. Conclusion

Venous insufficiency should be kept in mind as a possible cause of lower limb eczema and pruritis in the elderly. The response to conventional treatment with moisturizers and topical corticosteroids may be poor in such cases. The inflammation, and itching can be severe so as to cause significant pigmentation, superficial ulceration, and secondary infection, as well as impair sleep and routine physical activities. Comorbidities, and possibility of venous thrombosis should be ruled out or managed. Treatment should be directed at addressing the underlying venous insufficiency, as well as controlling the inflammation and itching.

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