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Case Series

Hand eczema associated with frequent hand washing and use of hand sanitizer during COVID-19 pandemic: A case series

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ABSTRACT

Severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) causes coronavirus disease 2019 (COVID-19). The disease, because of its associated morbidity, mortality, and fast spread, has created panic among all sections of society. Hand washing and hand sanitizers are useful preventive measures against acquisition of SARS-CoV-2. However, overzealous use may be harmful and can cause hand eczema. People with certain occupations have higher risk of hand eczema. In this article, we report six adult patients who developed hand eczema after frequent hand washing and use of hand sanitizers during COVID-19 pandemic. Treatment and outcome of hand eczema in these patients are also discussed.

Keywords: Coronavirus disease 2019, Hand eczema, Hand sanitizer, Hand washing

INTRODUCTION

Hand eczema, a common skin disease, is often related to occupation or regular house work. It may be disabling and/or distressing in some patients.[1-3] During sometime in life, about 2–10% people are likely to develop hand eczema.[1]

Severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) causing coronavirus disease 2019 (COVID-19) spread from China to other countries. Due to its associated morbidity, mortality, and fast spread, the disease created panic among all sections of society. People have been practicing preventive measures including social distancing, use of mask, and hand hygiene to prevent acquisition of virus. COVID-19 has resulted in sharp rise in the demand for hand sanitization products.[4]

Hand washing and hand sanitizers are useful preventive measures against acquisition of SARS-CoV-2. However, frequent hand washing and hand sanitizer may be associated with hand eczema.[5] Similarly, people with certain occupations have higher risk of hand eczema.

There is limited literature from India on hand eczema in COVID-19 pandemic period. In this article, we report six adult patients who developed hand eczema after frequent hand washing and use of hand sanitizers during COVID-19 pandemic. Treatment and outcome of these patients are also discussed.

CASE SERIES

Case 1: Nummular eczema in an adult female

A 35-year-old female housewife presented with the complaints of itching and dryness over both hands for 4–5 days. The patient had a history of frequent (8–10 times in a day) hand wash and use of sanitizer once or twice daily. She was a known case of hypothyroidism. She was receiving levothyroxine tablet 50 mcg/day. On clinical examination, nummular eczema was observed [Figure 1].

She was treated with mometasone (0.1%) cream twice daily and moisturizer as required. Levocetirizine 10 mg/day at the time bed was advised for 7 days. With this treatment, the patient showed significant improvement in the clinical signs and symptoms of hand eczema.

Case 2: Hand eczema in a student

A 20-year-old male student presented with the complaints of burning/itching and red patches over dorsum of hands. He had a history of hand wash 5–7 times a day and sanitizer use twice daily. On examination, eczema was seen on the dorsum of hand [Figure 2]. The patient was also suffering from acne vulgaris for which he was receiving topical anti-acne medication.

Similar to the first patient, he was also treated with mometasone (0.1%) cream twice daily and levocetirizine 10 mg for 7 days. Liberal use of moisturizer was advocated to

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Figure 1: Nummular eczema in a housewife.

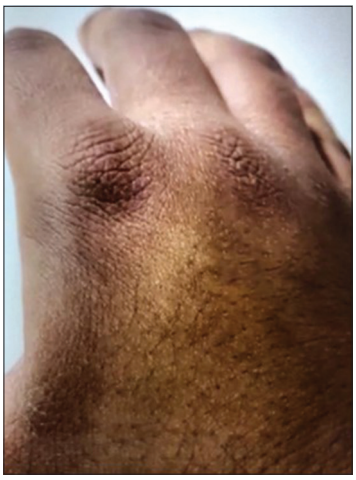

Figure 3: Hyperkeratotic hand eczema.

Figure 2: Hand eczema in a student.

Figure 4: Interdigital hand eczema in a housewife.

the patient. He showed improvement in signs and symptoms with this treatment.

Case 3: Hyperkeratotic hand eczema

A 45-year-old male patient presented with itchy and dry skin over dorsum of hands. He had a history of hand washing 8–10 times a day and use of hand sanitizer for 4–5 times in a day. This patient was not having any comorbidity and was not receiving any concomitant medications. On examination, hyperkeratotic hand eczema was observed [Figure 3].

The patient was treated with clobetasol propionate (0.05%) and salicylic acid ointment for application at the night, cream containing glycolic acid, urea, and cetylated fatty ester complex for morning, and hydroxyzine tablet at bed time for 5 days as itching was interfering his sleep. The patient showed some improvement in the signs and symptoms after few days of treatment.

Case 4: Interdigital eczema

A 33-year-old housewife presented with red and itchy patches in between web spaces and fingers. She also had a history of frequent hand wash (10–12 times a day) and use of hand sanitizer 2–3 times a day as she had a small baby. She had history of atopic dermatitis. On examination, interdigital eczema was observed [Figure 4].

With moisturizer application twice/thrice daily, fusidic acid/betamethasone cream, and tablet fexofenadine 180 mg/day for 7 days, the patient showed significant improvement.

Case 5: Fingertip eczema

A 48-year-old female, farmer by occupation, presented with scaly and fissured plaque over fingers [Figure 5]. She had a history of hand wash 4–5 times a day and use of hand sanitizers for 1–2 times in a day. She was a known case of hypertension. The patient was receiving tablet telmisartan-hydrochlorothiazide for the treatment of hypertension.

With halobetasol and fusidic acid combination, moisturizer use twice/thrice daily, and tablet fexofenadine 180 mg once daily for 7 days, the patient showed significant improvement.

Figure 5: Fingertip eczema.

Figure 6: Hand eczema in a health care worker.

Case 6: Hand eczema in a health care worker

A 40-year-old male health care worker presented with the symptoms of hand eczema [Figure 6]. He had a history of frequent hand wash (8–10 times/day) and use of hand sanitizers (8–10 times/day). He was treated with cream containing glycolic acid, urea, and cetylated fatty ester complex (keratolytic cream) and fluticasone cream. With this treatment, he showed improvement in symptoms.

DISCUSSION

Hand hygiene is important in prevention of infection with SARS-CoV-2. However, excessive hand hygiene may prove detrimental.[6] We present a case series of six patients with different occupations presenting with hand eczema in the period of COVID-19 pandemic. Other causes of hand eczema were excluded by careful history and clinical examination.

Out of six, three patients were female. The common link between all six cases was use of alcohol based hand sanitizer and frequent hand washing. In terms of medical history, one of our patients had a history of hypothyroidism which is known to be associated with dryness of skin.[7] Atopic dermatitis is associated with an increased prevalence of hand eczema. In our case series, one patient had a history of atopic dermatitis.[8] In others, no significant history of medical illness to be associated with skin-related changes was noticed. Detergents are known cause of hand eczema in certain occupations, especially housewives, those involved in cleaning activities, and health care workers.[3] In our series, three were housewives and one patient was health care worker. A survey reported high rates of hand skin damage among health care workers. More damage was observed in health care workers who washed their hand more than 10 times.[9]

Different forms of hand eczema, that is, pompholyx (vesicular form), fissured hand eczema (with or without scaling), hyperkeratotic form, nummular type, fingertip eczema, and interdigital eczema are known.[3] In our series, many of these types were observed.

Frequent hand washing with water and soap can result skin damage which may facilitate entry for COVID-19 through the angiotensin-converting enzyme 2 receptors in skin, blood vessels, and hair follicles.[10]

Misuse of alcohol-based sanitizers may be associated with adverse effects related to human health or environment.[11] Use of alcohol sanitizers has increased significantly during COVID-19 pandemic, use of which may cause dryness, roughness, and crusty skin.[12] Patch testing is useful to confirm cause of hand eczema.[3] However, we did not order any investigation considering the restrictions of travel during COVID-19 pandemic.

Similar to ours, some authors from India have also reported increased incidence of hand eczema overzealous hand hygiene.[6,13] Basic skincare after hand washing is required to prevent skin damage.[10] Maintenance of skin hydration is important for the prevention of hand eczema. Emollient and moisturizers are one of the recommended protective measures for hand eczema.[3] Moisturizer use helps to maintain skin hydration. Its use after hand cleaning can prevent further skin reactions. Hence, liberal use of moisturizer, especially immediately after hand washing, should be advised in such patients.[5] For those with highly sensitive skin prone for dermatitis, short courses of topical corticosteroids can help to reduce inflammatory signs.[5] Topical and short-term systemic corticosteroids are also useful in the management of hand eczema.[2] In our cases, improvement in the skin reactions was noted after use of moisturizer, topical steroid, and short-term use of antihistamine. Stepwise approach consisting of basic topical agents, topical corticosteroids, calcineurin inhibitors, phototherapy, and systemic therapy is advised.[14]

Topical alitretinoin, a retinoid with good safety profile, i s also available for use in patients with severe hand eczema who do not show satisfactory response to conventional topical agents.[15] Options for systemic therapy include corticosteroids, alitretinoin, and immunosuppressants such as cyclosporine, methotrexate, and azathioprine.[14] Severe cases may require oral immunosuppressive therapy, but it is advised to be avoided during COVID-19 times.

Hand eczema due to excessive hand wash and alcohol-based sanitizers is preventable condition. Appropriate skin care products are useful for the management of hand eczema.

The cases reported in this series were consulted online and follow-up was also done online. Larger studies are required for confirmation of our observations.

CONCLUSION

In all cases in this series, frequent hand washing and use of sanitizers were associated with hand eczema. Although hand hygiene is important in the prevention of COVID-19, frequent hand washing and use of hand sanitizers should be rationalized. Hydration of skin should be maintained to prevent development of hand eczema. Patients with hand eczema can be effectively managed by appropriate skin care products.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent.

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Conflicts of interest

Author Dr. Anant Patil is the Associate Editor of the journal.

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