Face mask - induced itching during the COVID-19 pandemic: Are we heading towards a silent epidemic?

Dear Editor,

The COVID-19 pandemic came with many lifestyle modifications such as social distancing, hand hygiene, regular usage of personal protective equipment (PPE), including face masks, eye goggles, and gloves.\textsuperscript{[1]} Changes in everyday routines, work cultures, and new lifestyle adaptations have unwanted sequelae like reduced physical activities, obesity, worsening glycemic controls, anxiety-related issues, digital eye strain, and myopia.\textsuperscript{[2]} Few of these have been intensively studied and researched worldwide. But there are some issues as simple as itching, which are often ignored and considered insignificant. Mask-related problems like breakthroughs, rashes, acne, allergies, worsening dermatosis, xerosis, nasal bridge scarring have been reported.\textsuperscript{[3]} The question is, aren’t we neglecting all these mask-related issues, which have been a significant complaint, especially among medical professionals. Are we seeing a silent epidemic of mask-related itching? In the pre-COVID era, surgical masks were mainly meant for health care workers, especially surgeons, to prevent pathogens in the surgical area. In the current COVID-19 period, face masks have taken a front role in preventing viral transmission from human to human.\textsuperscript{[4]} The prolonged and regular use of PPE can harm the skin. Limited research has concentrated on prolonged use of PPE, especially of face masks. Itching is a pervasive dermatological disorder, and people with dry skin or underlying allergies are more predisposed to such issues.\textsuperscript{[5]} Itching, if severe, can lead to a negative psychosocial impact. According to the International Forum for the Study of Itch, itching is defined as a sensation leading to scratching.\textsuperscript{[6]} This may be a symptom of both dermatological and systemic disorders.

Literature review shows that although itching in present times is more commonly seen as an adverse effect of face mask use, little is known about the predisposing risk factors and correlations.\textsuperscript{[7]} Han et al.\textsuperscript{[8]} hypothesized that the face covered by the mask leads to high temperature, with each 1°C rise, and increase of sebum excretion by 10%. Berardesca et al.\textsuperscript{[9]} proposed that itching might be induced by mast cell degranulation associated with stress. People with atopic predispositions suffered more from itching. Aerts et al.\textsuperscript{[10]} reported an interesting case of occupational allergic contact dermatitis caused by formaldehyde and 2-bromo-2-nitropropane-1,3-diol (bronopol) contained in a polypropylene surgical mask. Krajewski et al.,\textsuperscript{[3]} in their analysis of 1156 health care workers (HCWs) and 1173 students, found that itching was present in 25.8% (602) of the participants. The prevalence was statistically higher among HCWs than students [365 (31.6%) and 237 (20.2%), respectively] (P < 0.001). Similarly, Szepietowski et al.\textsuperscript{[11]} surveyed 2307 participants from the general public and found that approximately 20% (273) had a complaint of itching. Ständer et al.\textsuperscript{[12]} found that, in comparison to men, women suffer from higher itch intensity with a larger impact on their quality of life. Zuo et al.\textsuperscript{[13]} documented itching due to face masks in 14.9% of HCWs, a burning sensation in 3.7%, and pain/pricking in 3.2% of subjects. Szepietowski et al.\textsuperscript{[14]} in their analysis, found that respirators (50%) were reported to be associated with more itching, as compared to N95 (23.3%) or cloth masks (20%). Krajewski et al.\textsuperscript{[3]} also found that itching was most common among those wearing respirators (N95/FFP2) (32.6%), whereas cloth masks caused itch only in 20% of users (P < 0.001). Roberge et al.\textsuperscript{[14]} reported three-layered surgical mask to be the most convenient and best-tolerated type in regards to itching.

Thus, itching is a prevalent complaint in these COVID times, and the problem is faced more strongly with prolonged hours of use. It is essential to take care as people scratching faces touch the uncontaminated outer surface of the mask and many times lower down their masks, making it highly contagious and thus losing the sole purpose of wearing masks. A few essential tips to prevent mask-related itching are choosing a natural fiber-cloth mask, cotton or polyester blends, such as T-shirt or pillowcase fabrics, using unscented laundry products, ensuring that mask fits appropriately, and it should neither be too loose to cause chafing nor too tight. Oil, nasal mucus, saliva, and sweat can contaminate the face mask wherever it touches the face, so it is crucial to wash the mask with gentle, non-irritating soap and dry it in the dryer after each use. A good, bland moisturizer at night or a barrier cream or spray, such as petroleum jelly or zinc oxide, can also help. Unnecessary cosmetics should be avoided; frequent shaving can also prevent irritation around follicles and ingrown hairs. We believe that these recommendations will help prevent this silent mask-related itching epidemic besides effectively combating the deadly COVID-19 infection.

Financial support and sponsorship
Nil.

Conflicts of interest
There are no conflicts of interest.

References

1. Chiu NC, Chi H, Tai YL, Peng CC, Tseng CY, Chen CC, et al. Impact of wearing masks, hand hygiene, and social distancing on influenza, enterovirus, and all-cause pneumonia during the coronavirus pandemic: Retrospective national epidemiological surveillance study. J Med Internet Res 2020;22:e21257. doi: 10.2196/21257.

2. Kaur K, Kannusamy V, Gurnani B. Knowledge, attitude, and practice patterns related to digital eye strain among parents of children attending online classes in the COVID-19 era: A cross-sectional study. J Pediatr Ophthalmol Strabismus 2021:1-12. doi: 10.3926/01913913-20211019-01.

3. Krajewski PK, Matusiak L, Szepietowska M, Białynicki-Birula R, Szepietowski JC. Increased prevalence of face mask-induced itch in health care workers. Biology (Basel) 2020;9:451. doi: 10.3390/biology9120451.

4. Schünemann HJ, Akl EA, Chou R, Chu DK, Loeb M, Lotfi T; et al.
Letters to the Editor

Use of facemasks during the COVID-19 pandemic. Lancet Respir Med 2020;8:954-5.

5. Barnawi GM, Barnawi AM, Samarkandy S. The association of the prolonged use of personal protective equipment and face mask during COVID-19 pandemic with various dermatologic disease manifestations: A systematic review. Cureus 2021;13:e16544. doi: 10.7759/cureus.16544.

6. Welz-Kubiak K, Reszke R, Szepeitowski JC. Pruritus as a sign of systemic disease. Clin Dermatol 2019;37:644-56.

7. Sim SW, Moey KS, Tan NC. The use of facemasks to prevent respiratory infection: A literature review in the context of the Health Belief Model. Singapore Med J 2014;55:160-7.

8. Han HS, Shin SH, Park JW. Changes in skin characteristics after using respiratory protective equipment (medical masks and respirators) in the COVID-19 pandemic among healthcare workers. Contact Dermatitis 2021. doi: 10.1111/cod.13855.

9. Berardesca E, Farage M, Maibach H. Sensitive skin: An overview. Int J Cosmet Sci 2013;35:2-8.

10. Aerts O, Dendooven E, Foubert K, Stappers S, Ulicki M, Lambert J. Surgical mask dermatitis caused by formaldehyde (releasers) during the COVID-19 pandemic. Contact Dermatitis 2020;83:172-3.

11. Szepietowski JC, Matusiak L, Szepietowska M, Krajewski PK, Biaynicki-Birula R. Face Mask-induced itch: A self-questionnaire study of 2,315 responders during the COVID-19 pandemic. Acta Derm Venerol 2020;100:adv00152. doi: 10.2340/00015555-3356.

12. Ständer S, Stumpf A, Osada N, Wilp S, Chatzigeorgakidis E, Pfeiderer B. Gender differences in chronic pruritus: Women present different morbidity, more scratch lesions and higher burden. Br J Dermatol 2013;168:1273-80.

13. Zuo Y, Hua W, Luo Y, Li L. Skin reactions of N95 masks and medial masks among health-care personnel: A self-report questionnaire survey in China. Contact Dermatitis. 2020;83:145-7.

14. Roberge RJ, Coca A, Williams WJ, Powell JB, Palmiero AJ. Physiological impact of the N95 filtering facepiece respirator on healthcare workers. Respir Care 2010;55:569-77.

This is an open access journal, and articles are distributed under the terms of the Creative Commons Attribution-NonCommercial-ShareAlike 4.0 License, which allows others to remix, tweak, and build upon the work non-commercially, as long as appropriate credit is given and the new creations are licensed under the identical terms.