

LETTER

Localized mid face miliaria in a healthcare worker due to N95 respirator use: A case report and management strategies

Dear Editor,

The novel COVID-19 pandemic is rapidly evolving and has become a great challenge to the global health care system. Health care workers across the world are adapting to an entirely new way of working, which mandates frequent donning, doffing and hand hygiene procedures. Personal protective equipment (PPE) has become indispensable in this new normal life. While it is absolutely necessary in prevention of transmission of infections like COVID-19, it also causes various dermatoses, which are often troublesome. Here we report a case of localized mid face miliaria in a health care worker as a consequence of N95 respirator.

A 28-year-old resident doctor, working as a front-line worker in a COVID-19 hospital, presented with multiple pustules on his nasal bridge of 2 days duration. The lesions started as erythema confined to the area under N95 respirator, after a 6 hour-long shift, followed by pustular eruptions the next day. Lesions were grossly asymptomatic except for minimal pain. He did not give history of any preexisting dermatoses. Cutaneous examination revealed crops of 1-2 mm sized pustules over an erythematous base on the mid portion of the nasal bridge (Figure 1). There was no tenderness or rise in local temperature. Rest of the examination was normal. A diagnosis of localized mid face miliaria was made. Gram stain revealed predominantly inflammatory cells and occasional gram-positive cocci. He was prescribed a topical antibiotic ointment along with emollient and the eruption subsided within 1 week without any sequelae.

Miliaria is an inflammatory condition caused due to obstruction of eccrine ducts and resulting sweat retention. It clinically presents as superficial clear vesicles (miliaria crystallina), erythematous papules/pustules (miliaria rubra/pustulosa), or deep papules (miliaria

profunda).¹ It is usually seen in bedridden/febrile patients or in persons working in hot/humid environments. Most common sites involved are the occlusive areas such as back, flexures and extremities. Localized miliaria of mid face is a recently described entity in relation to N95 respirator use in health care workers involved in managing of COVID 19 patients.² Characteristically, lesions are localized to the nose bridge, ala of nose and cheeks where there is maximal occlusion due to the respirators. Lesions start as localized erythema associated within 1 or 2 days, followed by appearance of crops of 1-2 mm pustules in the following days. Deep tenderness, comedones, nodules or cyst formation are typically absent differentiating it from occlusive folliculitis and acne. Strategies to prevent mid face miliaria are control of perspiration and limit occlusion time by provision of proper fitting PPE, frequent rotations and breaks in duty hours and washing face with cold water before and after duty. Once the precipitating factor has been removed, lesions will heal spontaneously or with supportive therapies such as cold sponging and emollients.

Recently, there has been a surge in reports on PPE induced dermatoses in healthcare workers. Majority of these results from the increased perspiration, occlusion, and pressure induced by the PPE. This is particularly relevant in tropical countries with high environmental temperature and humidity. Irritant contact dermatitis followed by frictional dermatoses were the most common facial dermatoses observed in a study from north India.³ Goggles and N95 respirator were the most common culprit and nose bridge was the most common site affected.³

These dermatoses often create a constant discomfort to the health care worker, resulting in repeated touching of the affected areas in an attempt to relieve the distress. This along with the epidermal barrier defect may increase the risk of exposure to the novel corona virus. The study from north India reported, 21% of work absenteeism in healthcare workers due to PPE induced facial dermatoses.³ Hence, a proper education of skin care and the hazards of barrier defects are important in decreasing the incidence of PPE related dermatoses.⁴

CONFLICT OF INTEREST

The authors declare no conflicts of interest.

AUTHOR CONTRIBUTIONS

Soufila Kudukkil Thazhathuveetil and Anwin Joseph Kavanal: had full access to all the data in the study and take responsibility for the integrity of the data and the accuracy of the data analysis and were responsible for the study concept and design. Soufila Kudukkil




FIGURE 1 Crops of pustules with background erythema over dorsum of nose

Thazhathuveetil and Anwin Joseph Kavanal: drafted the manuscript. Keshavamurthy Vinay, Swapanjeet Sahoo, Vikas Suri, and Pankaj Malhotra: contributed to the critical revision of the manuscript for important intellectual content and supervised the study. All authors contributed to the acquisition, analysis and interpretation of data.

DATA AVAILABILITY STATEMENT

Data sharing is not applicable to this article as no new data were created or analyzed in this study.

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