Case Report of Skin Lesions in COVID-19 Patient in A Private Hospital, Thailand in April 2020

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บทคัดย่อ

รายงานฉบับนี้เกี่ยวข้องกับผื่นในผู้ป่วย COVID-19 โดยการยกตัวอย่างผู้ป่วยจริง ดังนี้ ผู้ป่วยหญิงอายุ 28 ปี ไม่มีประวัติโรคประจำตัว หลังจาก 2 วันที่มีไข้ได้ตรวจพบว่าติดเชื้อ SARS-CoV-2 และวันที่ 2 ของวันที่มีไข้พบว่ามีผื่นบริเวณต้นแขนและต้นขา ไม่มีอาการคัน ปวดกล้ามเนื้อ ถ่ายเหลว 3 ครั้งใน 1 วัน จากการตรวจร่างกายพบ There were multiple discrete blanchable erythematous macules and papules on the upper and lower extremities (both arms and thighs), no involvement in other parts of the skin area; such as, the conjunctiva, face, oral area, trunk, genitals, palms, and soles. จากอาการและการตรวจร่างกาย ผื่นที่สามารถเป็นได้มากที่สุดคือ ผื่นจาก Coronavirus แต่ก็ควรจะนึกถึงผื่นโรคอื่นๆด้วยเช่นกัน อันได้แก่ Chikungunya, Zika, Measles, Rubella, Infectious mononucleosis, Dengue fever and Dengue hemorrhagic fever, acute retroviral syndrome, Secondary syphilis, Scrub typhus, Lepromatous Leprosy and Candidiasis.และควรตรวจยืนยันทางห้องปฏิบัติการ (lab test) โรคดังกล่าวข้างต้นในกรณีถ้ามีช่วงเวลาการระบาดของโรค ณ เวลานั้น แต่ในผู้ป่วยรายนี้ ไม่ส่งตรวจเนื่องจากเป็นช่วงระบาดของ COVID-19 และควรนึกถึงผื่นจากการแพ้ยา จากการตรวจ lab ไม่พบว่า eosinophil สูง แสดงว่าไม่มีการทำลายเนื้อเยื่อภายใน (internal organ damage) จากการแพ้ยา ไม่แนะนำให้ทำการตรวจชิ้นเนื้อ (biopsy) เพราะไม่ได้ช่วยในการวินิจฉัยการติดไวรัส เว้นแต่สงสัยการแพ้ยาขั้นรุนแรง การรักษาคือทา corticosteroid 2 วัน จากนั้นผื่นหายเอง มีรายงานจากทั่วโลกว่า ผื่นจาก COVID-19 นั้นมีหลายรูปแบบ ดังนี้ maculopapular rash, vesicular, Urticarial lesion, Liveo reticularis, Violaceous rash, COVID toe, petechiae and purpura, papulosuamous ผื่นไม่ได้บ่งบอกถึงความรุนแรงของการติดเชื้อ SARS-CoV-2 ณ ปัจจุบันนี้ไม่มีหลักฐานแสดงอย่างชัดเจนว่าผื่น COVID-19 จะแสดงออกมาในรูปแบบใดอันเนื่องมาจากเป็นโรคอุบัติใหม่ พบว่า maculopapular rash (MP rash) เป็นผื่นที่พบได้บ่อยที่สุด ผื่นจะหายเองภายใน 2 สัปดาห์

โดยไม่ทิ้งรอยดำ อย่างไรก็ตาม การติดตามอาการของผู้ป่วยจะสามารถบอกอาการแสดง และเรียนรู้เกี่ยวกับผื่นชนิดนี้ เพื่อนำความรู้ไปดูแลรักษาผู้ป่วยต่อไป

Key words: โรคโควิด-19. รอยโรคผิวหนัง.ผื่นตุ่มนูนแดง

Abstract

This report examined rash in COVID-19 patients by demonstrating a real case. The participant was a 28-year-old Thai female, who had no food or drug allergies. After having a fever for two days, she was detected with a COVID-19 infection together with muscular pain, rash on the extremities, and watery diarrhea for three times.

Physical examination: There were multiple discrete blanchable erythematous macules and papules on the upper and lower extremities (both arms and thighs), no involvement in other parts of the skin area; such as, the conjunctiva, face, oral area, trunk, genitals, palms, and soles.

Impression: Skin appearance of Coronavirus.

Differential diagnosis: Chikungunya, Zika, measles, rubella, infectious mononucleosis, dengue fever and dengue hemorrhagic fever, acute retroviral syndrome, secondary syphilis, Scrub typhus, lepromatous leprosy and Candidiasis.

Laboratory investigation: A complete blood count (CBC) showed no surging eosinophil, which inferred that there was no internal organ damage from any medication. A biopsy was not recommended because this would not help to indicate the viral infection apart from suspecting a severe drug allergy. The liver function and urine analysis were also normal in this case.

Treatment: Topical corticosteroid; oral antihistamine. In this case, topical corticosteroid was applied two times per day then the rash faded within two days without postinflammatory hyperpigmentation.

Conclusion: As COVID-19 is a new emerging disease, the information about skin lesions in this viral infection is still limited. Furthermore, many articles have reported different types of skin rash as part of COVID-19, including maculopapular rash (MP rash), vesicular, urticarial lesion, liveo reticularis, violaceous rash, COVID toe, petechiae and purpura, and papulosquamous lesions. MP rash is the most common skin lesion from COVID-19; conversely, the rash was not the indicator for the severity of the infection. Hence, further study would still be needed.

Key words: Skin lesions in COVID-19. Skin appearance of Coronavirus. Maculopapular eruption. COVID-19 disease.

Introduction

The COVID-19 pandemic has been spreading around the world since the end of 2019. Moreover, the situation in each country has been different. Thailand is also one of those countries that has been affected by the pandemic.

In addition, skin lesions during COVID-19 have gained some interest due to limited information. Many articles from around the world have reported about skin lesions with different types of appearance. Therefore, this report focused on skin lesions in a detected COVID-19 patient in a private hospital inThailand.

Due to the patient's request for confidentiality, a similar photo to this case was used instead.

Source: https://dermnetnz.org/topics/exanthems/(1)

General case information

The participant was a 28-year-old female Thai nurse. 11 April, 2020, (onset date): The patient developed a shivering sensation. 13 April 2020 (hospital date): The participant had a fever, rash on the proximal arms and legs that faded after two days, watery diarrhoea for three times, and muscular pain. The result of a nasal swab detected COVID-19 (tested date: 14 April, 2020) then an investigation for close contact was implemented.

The result found that the participant had been working as a private nurse taking care of one of the patients who had tested positive for COVID-19 from a swab result. Nonetheless, the case index was unable to express who had initially developed the symptoms.

Examination: The participant had no evidence of paleness and jaundice.

Skin lesion: There were multiple discrete blanchable erythematous macules and papules on the upper and lower extremities (both arms and thighs), no involvement in other parts of the skin area; such as, the conjunctiva, face, oral area, trunk, genital, palms and soles.

Lymph node: The participant had no superficial lymphadenopathy.

Abdomen: The liver and spleen could not be palpated.

Differential diagnosis

1. *Skin appearance of Coronavirus.*

There was blanchable erythematous rash on the upper and lower extremities (arms and legs); therefore, maculopapular rash (MP rash) was used to describe the skin lesions on this patient. Itchiness is generally not found in this type of rash. However, this characteristic of skin lesions could be found in other viral infections, which are called viral exanthem. The rash was found in this patient while detecting the COVID-19 infection and the pandemic period of the Coronavirus, which tended to be the main type of rash from COVID-19.[2-8]

2. *Viral exanthemas or other agents.*

Maculopapular rash can be found in viral infections or other agents; such as, Chikungunya, Zika, measles, rubella, infectious mononucleosis, dengue fever and dengue haemorrhagic fever, acute retroviral syndrome, secondary syphilis, Scrub typhus, lepromatous leprosy, and Candidiasis. Those above-mentioned viral infections should be further investigated individually for the case of the pandemic together with other symptoms; such as, conjunctivitis and arthritis. A laboratory investigation may be needed for the differential diagnosis.[2-8]

3. *Drug eruption results in maculopapular rash*

The participant had no evidence of taking any medication during the previous 14 days apart from paracetamol for fever, and the patient had no history of any drug allergies, especially paracetamol. However, an investigation should also be done to confirm for drug allergies.[2-8]

Laboratory investigation

- A complete blood count (CBC) was done to indicate the severity of any drug allergies and indicate any internal organ damage, which showed a normal level of absolute eosinophil. A liver function test and urinary examination also displayed normal results in this patient.
- In case of other viral infections resulting from the pandemic, further laboratory tests should be done for confirming those infections; such as, polymerase chain reaction(PCR) for Chikungunya, PCR for Zika, dengue IgM/IgG and dengue NS1 antigen. In this case, the above laboratory tests were not conducted, as this period was not the pandemic of those viral infections.
- A skin biopsy was not recommended for the diagnosis of the viral infections apart from suspecting severe drug allergies.

Conclusion of the diagnosis: Maculopapular rash due to the Coronavirus.

COVID-19 is an infection of acute respiratory syndrome coronavirus 2 (SARS-CoV-2), which is an RNA virus. Moreover, it can be transmitted to humans from a droplet in the nostril, saliva to a mucous membrane, including the mouth, nose, and eye. Some evidence also reports of the spreading of this virus via the gastrointestinal system. Most of the symptoms comprise fever, difficulty to breath, bloody cough, arthritis, arthralgia, nausea, vomiting, or diarrhea. In addition, the virus can be spread during both the symptomatic and asymptomatic periods. Furthermore, the incubation period of SARS-CoV-2 is around four days to two weeks; however, some reports have shown an incubation period of 27 days. Most patients also show symptoms after approximately 11 days. Even though the laboratory test was initially negative after the treatment, the follow-up for the PCR test was positive again, which could not indicate that the patient could still spread the virus to others or not. As a consequence, self-quarantine had to be done after the last day of discharge from the hospital. [2-9]

Conclusions of skin lesions as part of COVID-19 have been reported from around the world as follows:

- Erythematous rash, including maculopapular rash and morbilliform rash have the greatest number of case reports with no or mild itchiness. The rash was found on the trunk and could eventually fade by itself. [1]

Source: https://dermnetnz.org/topics/exanthems/

- **Urticarial lesion.**[10]

Source: https://dermnetnz.org/topics/urticaria-and-urticaria-like-conditions/

- Vesicular lesion.[11]

Blistering diseases

Vesicles

A bulla

Crust

Source: https://dermnetnz.org/topics/blistering-skin-conditions/

- The violaceous rash on the palms and feet, especially the distal area due to the inflammation of the vessels in cold weather, which are called COVID toe or chilblains or perniosis. There have been several rashes; such as, bleb, blister, and edematous.[12]

Chilblains

Perniosis

Perniosis

Perniosis

Source: https://dermnetnz.org/topics/chilblains/

- Livedo reticularis was also found in both the unilateral and bilateral forms.[13]

Livedo racemosa

Livedo reticularis

Livedo racemosa

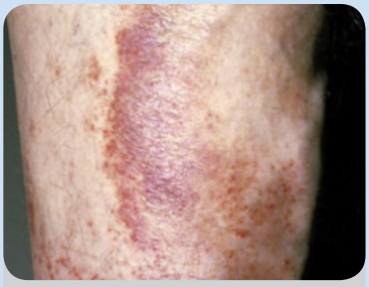
Source: https://dermnetnz.org/topics/livedo-reticularis/

- Petechiae and purpura due to vasculitis.[14]

Purpura

Suction bruise

Injury



Venous stasis

Vasculitis

Steroid purpura

Disseminated intravascular coagulation

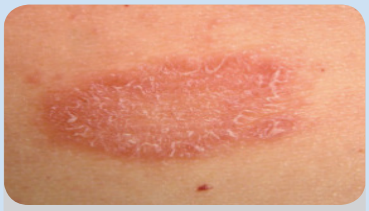
Source: https://dermnetnz.org/topics/purpura/

- Papulosquamous which is similar to Pityriasis rosea.[15]

Pityriasis rosea: herald patch


Pityriasis rosea


Pityriasis rosea


Pityriasis rosea

Source: https://dermnetnz.org/topics/pityriasis-rosea/

The existing evidence showed that the rash in COVID-19 patients was not relevant to the severity of the infection of Coronavirus. There was also no evidence to support about the mechanism in each type of rash in COVID-19 patients, as the virus was a new emerging disease.[1-8]

Treatment

There is no specific treatment for rash in COVID-19. Supportive treatment is also required; such as, topical corticosteroid and oral antihistamine.[2-8]

Prognosis

Presently, there is no existing evidence that shows the duration of the rash in COVID-19. Some articles have reported that the rash would fade within one-two weeks without any specific treatment, which would be similar to other viral rashes. Additionally, there was no post inflammatory hyperpigmentation after recovery.[2-8]

In this case, the most likely possibility of rash from COVID-19 would occur at the beginning when a patient had a fever within two days together with a detected COVID-19 test. The laboratory showed no eosinophil surge, which would indicate any drug allergies. Topical corticosteroid was also applied two times per day then the rash disappeared within two days without any post inflammatory hyperpigmentation.[2-8]

What can be learned from this scenario?

- COVID-19 is a new emerging disease; therefore, up-to-date information is necessary for physicians for the effective treatment of patients.
- Several types of skin lesions have developed in COVID-19 cases; such as, maculopapular rash, papulosquamous, livedo reticularis, purpura, chilblain, vesicle, urticaria. The rash would be self-fading within two weeks.[2-9]

Suggested citation for this article

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