International Journal of Research in Medical Sciences
Pasande S. Int J Res Med Sci. 2022 Sep;10(9):2011-2015
www.msjonline.org
pISSN 2320-6071 | eISSN 2320-6012

DOI: https://dx.doi.org/10.18203/2320-6012.ijrms20222083

Case Report

Psoriasis in resource-limited setting: a case report in a remote area in Indonesia

Suspina Pasande*

General Practitioner, Nabire Regional General Hospital, Nabire, Central Papua, Indonesia

Received: 26 July 2022
Revised: 06 August 2022
Accepted: 09 August 2022

***Correspondence:**
Dr. Suspina Pasande,
E-mail: suspinapasande@gmail.com

ABSTRACT

The diagnosis and treatment of psoriasis may be challenging in resource-limited setting. We report a 54-year-old male with the diagnosis of psoriasis vulgaris in the rural area of Papua, Indonesia. The diagnosis was made clinically by a general practitioner due to the absence of diagnostics testing and dermatologists around the area. The patient showed improvements after applying combined ointment of glucocorticoids, emollients, and moisturizers.

Keywords: Psoriasis, Rural, Topical treatment

INTRODUCTION

Psoriasis is a chronic inflammatory skin disorder mediated by the immune system. It is characterized by skin inflammation, epidermal hyperplasia, increased vascular morbidity, and psychosocial challenges. Psoriasis is referred as polygenic condition which can be triggered by trauma, infection, medication, or psychological stress.[1,2] This skin disorder can be found across the globe. The prevalence of psoriasis is estimated to be 2% of the world population, but may diverse on each countries, from <1% in the United States up to 8.5% in Norway.[1,2] However, psoriasis is reported to be rarely found in Asia. A variance of the prevalence of this disease was observed within Indonesia, ranging from 0.19% to 1.73%. In most regions, women and men are affected equally. While psoriasis can appear at any age, there is a bimodal age distribution for psoriasis between the age group of 18-39 years and 50-69 years old. The age of onset may be influenced by genetical and environmental factors.[3-5]

Psoriasis commonly manifests as lesions found around the scalp, extensors, extremities, trunk, and nail. Some patients may develop extracutaneous manifestation of psoriasis, commonly in the form of psoriatic arthritis. In addition, some patients may also develop cardiovascular morbidity and mortality. The diagnosis of psoriasis is usually based on clinical features. In few cases, histopathological examination may be needed if the diagnosis of psoriasis could not be made solely from clinical history and examination. Regardless, professional dermatologists who can diagnose psoriasis early and correctly is insufficient in Indonesia, especially in the rural areas.[1,6] A smart approach system to identify psoriasis in rural areas depend highly in the clinical manifestation observed by general practitioners residing in the rural areas.

The chronic disease course of psoriasis has a significant impact on the patient's quality of life, particularly on the patient's psychosocial well-being. Avoidance and denial of the condition are major daily stressors in psoriasis patients. Furthermore, patients with lesions on functional areas such as the face, palms and soles, and even genitalia are said to have a greater impact. Patients with psoriasis have a higher rate of depression compared to the general population, ultimately leading to thoughts of suicide attempts.[4] Parallel to the psychological burden, psoriasis also carries a heavy financial burden for both the patient and to the country. In the United States, up to 63 million

dollars are spent to treat psoriasis annually. Nevertheless, studies report that the recurrence of the disease can be prevented by descripting general information such as the number of cases, triggering factors, and management options to the patients with psoriasis.[3,7,8]

We report a case of psoriasis vulgaris diagnosed in the resource-limited setting in the rural area of Indonesia. We hope that this report may emphasize the importance of clinical manifestations of psoriasis to quickly identify and treat psoriasis to prevent the high prevalence of morbidity and mortality due to psoriasis.

CASE REPORT

A 54-year-old male came to a rural clinic in Papua, Indonesia, with the chief complaint of red plaques on head, chest, abdomen, upper and lower back, some covered with white scales for 3 months prior to examination. The lesions initially started with a single lesion on the head, with the size of a coin, scales in the form of dandruff-like if scratched. One month after the initial lesion, new lesions appear at the head, chest, abdomen, and persist for 2 months. The lesions are accompanied with painless itch. The patient had never experienced the same symptoms before. History of the same complaints among the family members were denied. History of asthma, allergy, diabetes, and hypertension were denied. The patient had applied betamethasone cream and miconazole cream twice daily, but no improvement was seen. The patient works as a teacher. The patient stated that he has been under a lot of stress at work for the past 3 months prior to examination. The patient does not smoke or consume alcohol.

Physical examination showed consciousness of compos mentis, blood pressure 130/80 mmHg, axillary temperature 36.8°C, pulse rate 92 times per minute, respiratory rate 20 times per min, visual analogue scale 0 of 10. On general status, the head was found to be normocephalic, no anaemic conjunctivae and icteric sclerae were seen on both eyes. Ear, nose, and throat examination appeared to be normal. There were no lymph node enlargements found on the neck. On thorax examination, heart sound was S1 and S2 normal, regular, without any murmur or gallop. Vesicular breathing was heard on pulmonary auscultation, without any rhonchi or wheezing. On abdominal examination, bowel sound was within normal limits, no distention and hepatosplenomegaly were found. Both upper and lower extremities were warm, without accompanied by oedema.

Dermatologic status on head, anterior and posterior thoracoabdominal regions were found multiple erythematous plaques, well defined margin, geographical shape, size varies from 0.2×0.5 cm to 3×5 cm, some are covered with silver scale. BSA 7%, PASI 8.2, DLQI 6. No additional laboratory or supporting examinations were conducted to the resource-limited setting (Figure 1).

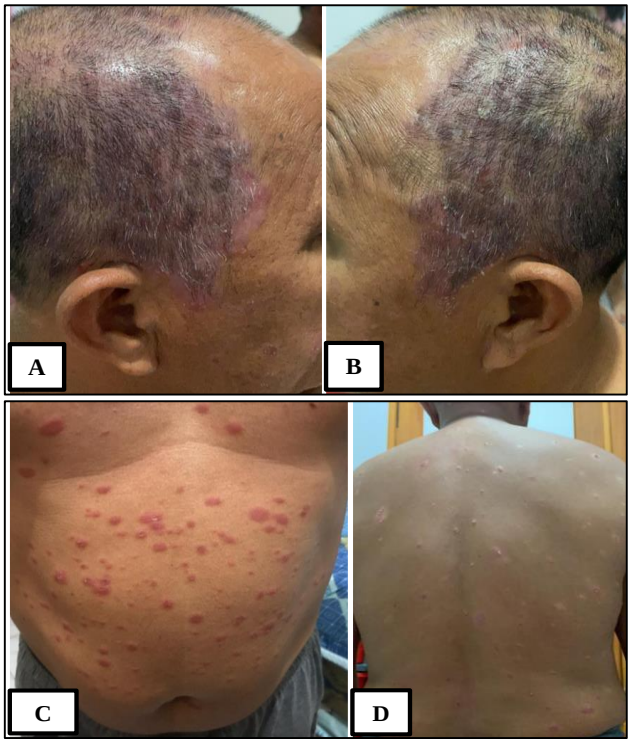

Figure 1: Clinical picture of the patient when the diagnosis was made. Note the red plaques covered with silver scale found on head, anterior thoracoabdominal, and posterior thoracoabdominal regions.

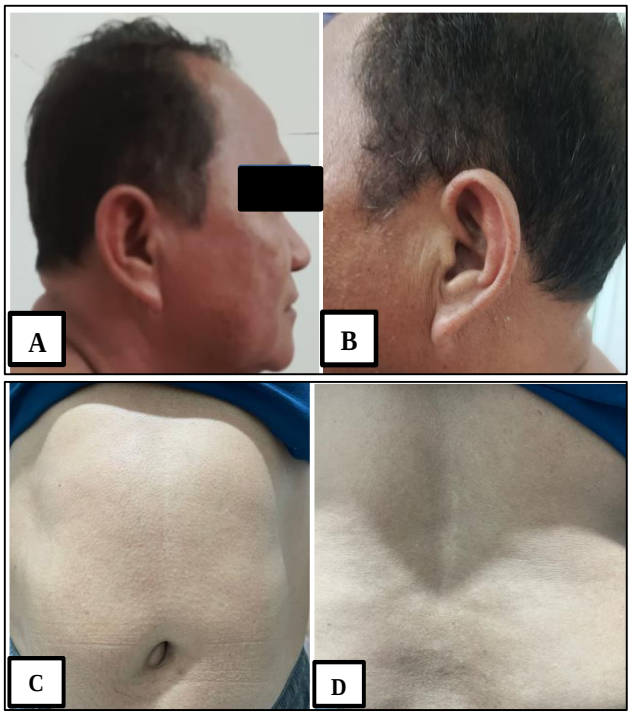

Figure 2: Clinical picture of the patient 1 month after the initiation of the treatment. Note the improvements of the lesions on head, anterior thoracoabdominal, and posterior thoracoabdominal regions.

Differential diagnoses of psoriasis vulgaris and seborrheic dermatitis were made. Based on the anamnesis and physical examination, working diagnosis of psoriasis vulgaris was made. Management of clobetasol propionate 0.05% cream, urea 40% and Vaseline topically twice a day and cetirizine 10 mg once a day orally were given to the patient. On a follow up examination 2 weeks after the treatment, the symptoms are improving and the lesions are heading towards resolution. The lesions have resolved almost completely 1 month after the initiation of the treatment (Figure 2).

DISCUSSION

Psoriasis is a common, immune-mediated inflammatory disease characterized by skin inflammation, epidermal hyperplasia, and increased risk of arthritis as well as cardiovascular morbidity and psychological challenges. This disease leaves a heavy economic and health burden not only to the patients but also to the country.[1]

Psoriasis can be found worldwide. The global prevalence of psoriasis is estimated to be 2%, although the exact prevalence may differ from each country.[2] Psoriasis is less commonly found in Asia. In Indonesia, the prevalence of psoriasis is reported from 0.19% to 1.73%. Reports show that there is no sex predilection for psoriasis. It may begin at any age, but there is a bimodal age distribution for psoriasis between the age group of 18-39 years and 50-69 years old. The age of onset may be influenced by genetical and environmental factors.[3-5]

This skin disorder can be found across the globe. The prevalence of psoriasis is estimated to be 2% of the world population,[2] but may diverse on each countries, from <1% in the United States up to 8.5% in Norway.[1] However, psoriasis is reported to be rarely found in Asia. A variance of the prevalence of this disease was observed within Indonesia, ranging from 0.19% to 1.73%. In most regions, women and men are affected equally. While psoriasis can appear at any age, there is a bimodal age distribution for psoriasis between the age group of 18-39 years and 50-69 years old. The age of onset may be influenced by genetical and environmental factors.[3-5] In this case report, we report a 54-year old male diagnosed with psoriasis.

Both intrinsic and extrinsic factors are associated with the onset and exacerbation of psoriasis. Intrinsic risk factors of psoriasis include obesity, diabetes mellitus, dyslipidaemia, hypertension, and mental stress. In addition, extrinsic factors of psoriasis include mechanical stress, air pollutants, sun exposure, medications, vaccinations, infections, and lifestyle causes such as smoking and alcohol consumption.[9,10] This patient is suspected to have triggering factor of mental stress due to his work as a teacher. The COVID-19 pandemic as taken a toll to an extent of some occupations, including teachers. During the state of emergency, all citizens including children were forbidden to leave their homes except to cover basic needs. As a consequence, all teaching activities were transformed to an online modality. Confusion and stress are mostly complained by teachers due to the rapid mandatory use of technology for the teaching situation.[11] In addition, this patient works in a rural area of Papua, Indonesia, in which not every children had equal access to internet and technology to support and continue their education.

Psoriasis vulgaris is the most common type of psoriasis, which can be found in 90% of psoriasis patients. Psoriasis vulgaris is often found locally on the extensors (elbows and knees), scalp, inferior lumbosacral, buttocks, and genitalia. Skin lesions usually appear symmetrically scattered, confluent to form multiple plaques. In some cases central clearing can be found, forming an annular lesion. This form usually indicates a better prognosis. The classic lesions of psoriasis are described as reddish, well-circumscribed plaques that are covered with a fine white scale on top. The size of the lesions can vary from small papules to plaques that can cover most of the patient's body. The skin under the scales shows a homogeneous erythema. When the scales are removed, you will see bleeding points indicating trauma to the underlying dilated capillaries (Auspitz sign). Psoriasis tends to show a symmetrical eruption pattern. This symmetry helps to establish the diagnosis and exclude other differential diagnoses. However, psoriasis lesions can also appear unilaterally.[1] In this case report, we found multiple erythematous plaques, well defined margin, geographical shape, size varies from 0.2×0.5 cm to 3×5 cm, some are covered with silver scale on head, anterior and posterior thoracoabdominal regions.

The diagnosis of psoriasis is usually based on clinical features. In the few cases in which clinical history and examination is not diagnostic, biopsy is indicated to establish the correct diagnosis. Features supporting a diagnosis of psoriasis include symmetry of lesions, extensor distribution, sharp demarcated lesions, and silvery scale, all of which were found in this case report. The most common type is plaque psoriasis (psoriasis vulgaris) which is described above.[1] Other types of psoriasis include guttate psoriasis, commonly in children after an upper respiratory tract infection characterized with erythematous, scaly, raindrop-shaped lesions over the trunk and back; pustular psoriasis which presents with small non-infectious pus-filled lesions surrounded with erythema; erythrodermic psoriasis, presenting as widespread inflammation covering more than 90% of body surface area; inverse psoriasis, found in flexural or intertriginous areas; and psoriatic arthritis.[12-14]

In this case report, the diagnosis of psoriasis was made solely depending on the clinical features of the patient, resembling a classical pattern of psoriasis, due to the resource-limited setting. There were no laboratory and supporting diagnostics centres within the proximity. The diagnosis was also made by a general practitioner due to the absence of dermatologists around the area.

Histopathological examination can help establish a doubtful diagnosis of psoriasis. Histopathological findings can be different depending on the process of development of psoriatic lesions. In the early stages where the lesion is only a small macula, oedema and mononuclear cell infiltrate may be found in the upper dermis. If the lesion becomes larger, it can be seen thickening of the epidermis, increased metabolic activity of epidermal cells, increased number of mast cells and dermal macrophages, increased mast cell degranulation, and increased immune cells such as T cells and dendritic cells. Laboratory tests are usually not required to make a diagnosis of psoriasis. However, in severe psoriasis vulgaris and erythroderma, decreased serum albumin levels can be found. Patients with psoriasis may also exhibit an elevated lipid profile. Serum uric acid levels can increase and have a correlation with the severity of the disease. Several systemic inflammatory markers such as C-reactive protein, alpha-2-macroglobulin, and erythrocyte sedimentation rate may show an increase.[1]

Treatment of psoriasis depends on the severity of the disease, mostly calculated with psoriasis area severity index (PASI) and/or body surface area (BSA). Mild psoriasis (<10% BSA) is usually treated with topical agents of emollients, glucocorticoids, and vitamin D_3 analogues. Moderate (11-30% BSA) and severe (>30% BSA) psoriasis require an additional phototherapy and/or systemic treatment. Emollients and moisturizers may help improving barrier function and retain the hydration of the stratum corneum, while glucocorticoids help aid the inflammation process.[15-17] In this case report, the patient was given the ointment combination of clobetasol propionate 0.05% cream as glucocorticoid, with an additional of urea and Vaseline as emollient and moisturizers. The patient also takes cetirizine 10 mg once daily orally. After two weeks of treatment, the lesions are recovering and healed completely after one month of treatment.

CONCLUSION

Psoriasis is mainly diagnosed clinically. Limited-resource settings may be a burden to diagnosis and treatment of psoriasis, due to the lack of dermatologists and diagnostics centres in which laboratory examination can be done. We report a 54-year-old male with psoriasis vulgaris, diagnosed clinically by a general practitioner in a rural area in Papua, Indonesia, showing improvements after two weeks treatment of ointment combination of glucocorticoids, emollients, and moisturizers.

ACKNOWLEDGEMENTS

Author would like to thanks to everyone for the support and for making this literature review possible to publish.

Funding: No funding sources
Conflict of interest: None declared
Ethical approval: Not required

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Cite this article as: Pasande S. Psoriasis in resource-limited setting: a case report in a remote area in Indonesia. Int J Res Med Sci 2022;10:2011-5.