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Case Report

Dyshidrosis

Muh. Yusuf Ashadin Ahmad [1], Aryanti Suardi [2,*]

[1] Universitas Muslim Indonesia, Makassar, Indonesia, ashadinahmad1@gmail.com
[2] Universitas Muslim Indonesia, Makassar, Indonesia, aryantisuardi@gmail.com

Correspondence should be addressed to Aryanti Suardi; aryantisuardi@gmail.com

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Abstract:

Background: Dyshidrosis, also known as pompholyx or dyshidrotic eczema, is a vesicular type of dermatitis that commonly affects the palms, fingers, and soles. Although not life-threatening, this condition often leads to significant discomfort, recurrent episodes, and impaired quality of life. The etiology is multifactorial, involving genetic predisposition, environmental triggers, stress, and hypersensitivity reactions. Case Presentation: We report a case of an 18-year-old female presenting with multiple vesicular lesions on both palms associated with itching and burning sensation for four days. The vesicles were grouped, clear, and non-rupturing, with pain on palpation. The patient had no history of atopy, allergies, or systemic illness. Physical examination revealed multiple tapioca-like vesicles measuring 1–3 mm on an erythematous base. Vital signs were stable, and no systemic abnormalities were detected. The patient was treated with topical corticosteroids (betamethasone cream), topical antibiotic (gentamicin cream), oral corticosteroid (methylprednisolone), and vitamin C supplementation. Supportive measures such as hand hygiene, moisturization, and avoidance of excessive sweating were emphasized. The patient showed gradual improvement with reduction in itching and lesion healing. Conclusion: This case highlights the clinical features and management of dyshidrosis in a young adult. Early recognition and appropriate treatment are essential to relieve symptoms, prevent complications, and improve quality of life. Patient education regarding hygiene and lifestyle modifications plays a crucial role in preventing recurrence.

Keywords: Dyshidrosis; Pompholyx; Vesicular Eczema; Corticosteroid Therapy.

1. Introduction

Dyshidrosis, also known as pompholyx or dyshidrotic eczema, is a vesicular form of hand and foot dermatitis that can manifest in acute, recurrent, or chronic forms (1,2). Clinically, it is characterized by sudden onset of multiple, deep-seated, pruritic vesicles resembling tapioca grains, which may progress to fissures and lichenification in prolonged cases (3,4). The terminology “dyshidrosis” originated from the assumption of impaired sweat gland function; however, subsequent studies demonstrated that sweat gland dysfunction is not the underlying cause. Instead, the association with palmar hyperhidrosis explains why the term remains in use.

The global prevalence of dyshidrosis varies between 5–20% of all cases of hand eczema, with higher incidence reported in warm climates such as during the summer months in Turkey (5). The disease predominantly affects young adults between 20–40 years of age, but it can also be seen in adolescents and the elderly. Epidemiological data suggest that women are more frequently affected than men, with a ratio of approximately 2:1. Although dyshidrosis does not increase mortality, severe and recurrent episodes may disrupt daily activities and diminish quality of life.

The etiology of dyshidrosis is multifactorial. Various triggers have been reported, including contact dermatitis (especially nickel sensitivity in women), "id" reactions due to fungal or bacterial infections, drug eruptions, dermatophytid reactions, and idiopathic causes (6). Emotional stress, certain foods, excessive sweating, and environmental changes may further exacerbate symptoms. The disease burden is clinically significant as it may result in chronic discomfort, recurrent relapses, and secondary infections if not properly managed (7).

In this report, we present the case of an 18-year-old female with dyshidrosis who attended a primary care setting. This case aims to illustrate the clinical presentation, diagnostic considerations, management strategies, and highlight the importance of patient education and environmental modification in preventing recurrence.

2. Case Presentation

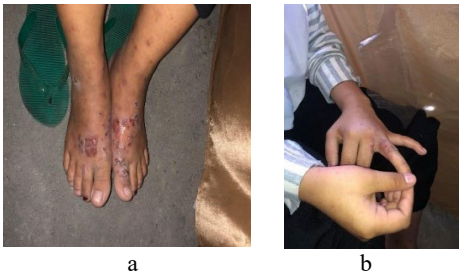
An 18-year-old female high school student presented to Puskesmas Jumpandang Baru, Makassar, with a chief complaint of fluid-filled blisters on both palms that had appeared four days prior to consultation. The lesions were preceded by itching and a burning sensation, after which small, clear vesicles developed in groups. These vesicles did not rupture easily but were painful when pressed. The patient reported that the condition often recurred, particularly when her hands were sweaty. She denied fever, cough, dyspnea, or gastrointestinal symptoms. There was no history of atopic disease, asthma, food or drug allergy, nor any family history of similar conditions.

On examination, the patient appeared moderately ill but was fully conscious (E4M5V6). Vital signs were stable, with blood pressure 90/60 mmHg, pulse 80 beats per minute, respiratory rate 22 breaths per minute, temperature 36.3°C, and oxygen saturation 99%. Her weight was 48 kg and height 146 cm. Local examination revealed multiple grouped vesicles measuring 1–3 mm in diameter, containing clear fluid with an erythematous base, located on the palms and dorsal aspects of both feet. No systemic abnormalities were detected on cardiopulmonary or abdominal examination. The clinical findings and management are summarized in Table 1.

Table 1. Summary of patient demographic and clinical data

Parameter	Findings / Interventions
Age/Sex	33 years / Female
Chief Complaint	Chronic itching on both dorsal feet (1 year)
Past Medical History	No history of atopy, asthma, allergy, or family history of similar illness
General Condition	Moderately ill, conscious (E4M5V6)
Vital Signs	BP: 90/60 mmHg; HR: 80 bpm; RR: 22/min; Temp: 36.3°C; SpO_2: 99%
Local Examination	Multiple grouped vesicles (1–3 mm) with clear fluid, erythematous base, on palms and dorsal feet
Systemic Examination	No abnormalities in cardiopulmonary or abdominal findings
Diagnosis	Dyshidrosis (pompholyx)
Treatment	Oral methylprednisolone 4 mg bid; topical betamethasone cream bid; topical gentamicin cream bid; vitamin C 250 mg daily
Patient Education	Keep hands dry; avoid prolonged glove use; moisturize after handwashing; avoid excessive sweating; return if symptoms worsen
Outcome	Gradual improvement with reduced itching and healing of vesicles at follow-up

Clinical documentation further supported these findings. On the dorsal aspects of both feet, grouped vesicles with surrounding erythema and crusting were observed, consistent with dyshidrosis (Figure 1a). Similar vesicular eruptions were also found on the hands, particularly the palms and fingers, with symmetrical distribution, further supporting the diagnosis of dyshidrotic eczema (Figure 1b).



a b

Figure 1. Clinical presentation of dyshidrosis.

The patient lived in a nuclear family of four members. The demographic characteristics of her family are presented in Table 2.

Table 2. Family demographic characteristics

No	Name	Relationship	Sex	Age (year)	Education	Occupation	Clinical Condition
1	Tn. F	Father (Head of family)	M	54	High school	Entrepreneur	-
2	Ny. R	Mother	F	48	Elementary	Entrepreneur	-
3	Nn. R	Sibling (1st child)	F	22	High school	Entrepreneur	-
4	Nn. F	Patient (2nd child)	F	18	High school	Student	Dyshidrosis

Based on these findings, the patient was diagnosed with dyshidrosis (pompholyx). No additional laboratory or imaging investigations were required, as the diagnosis was made clinically. The treatment consisted of oral methylprednisolone 4 mg twice daily, topical betamethasone cream applied twice daily, topical gentamicin cream applied twice daily, and vitamin C supplementation. The patient was advised to keep her hands dry, avoid prolonged glove use, wash hands only when necessary, moisturize after handwashing, and remain in a cool environment to reduce sweating. She was also instructed to return if the lesions increased, became purulent, or if pruritus was uncontrolled. At follow-up, the patient demonstrated gradual improvement with reduced itching and healing of the vesicles.

3. Discussion

Dyshidrosis, also referred to as pompholyx or dyshidrotic eczema, is a chronic and often recurrent vesicular dermatitis that primarily affects the palms and soles (8–10). It is characterized by the sudden appearance of deep-seated, pruritic vesicles resembling tapioca grains (11). The condition may present in acute, subacute, or chronic forms, and in advanced stages, fissures, lichenification, and secondary infection can occur. Although the exact etiology remains uncertain, the disease is considered multifactorial, involving both endogenous and exogenous factors. Studies have reported associations with atopic predisposition, hypersensitivity to nickel and other allergens, fungal or bacterial infections, drug reactions, and idiopathic causes (6). Environmental triggers such as hot and humid climates, emotional stress, and excessive sweating are also frequently implicated in disease exacerbation.

Epidemiologically, dyshidrosis accounts for approximately 5–20% of all cases of hand eczema, with peak incidence between 20 and 40 years of age. However, adolescent cases, such as the present report of an 18-year-old female, have also been documented. The disease is more common in women, with a female-to-male ratio of about 2:1 (2,5,12). This gender distribution has been linked to occupational and environmental exposures, as well as hormonal influences. Dyshidrosis does not increase mortality but can substantially reduce quality of life due to chronic discomfort, functional impairment, and cosmetic concerns.

The diagnosis of dyshidrosis is usually clinical, based on the characteristic vesicular eruptions on the palms, soles, and lateral aspects of the fingers. Histopathological examination or patch testing may be considered in atypical cases or when contact dermatitis is suspected. In this case, the clinical findings of grouped vesicles on the palms and dorsal aspects of the feet, combined with the absence of systemic involvement, were sufficient to establish the diagnosis.

Management of dyshidrosis is often challenging because of its recurrent nature. First-line therapy includes topical corticosteroids to reduce inflammation and pruritus, with systemic corticosteroids reserved for severe or widespread disease (13–15). Topical calcineurin inhibitors, such as tacrolimus or pimecrolimus, have also been reported as effective alternatives, particularly in recurrent or steroid-resistant cases. In the present case, the patient responded favorably to a combination of oral methylprednisolone, topical betamethasone cream, topical gentamicin cream, and supportive therapy, leading to gradual improvement. Previous studies have also highlighted the role of antihistamines, phototherapy, botulinum toxin for hyperhidrosis, and systemic retinoids such as alitretinoin in refractory cases.

This case underscores the importance of a holistic approach to treatment, which not only addresses pharmacological management but also emphasizes patient education on hygiene, avoidance of irritants, and

lifestyle modifications. In this patient, counseling on hand care, minimizing excessive sweating, and maintaining environmental comfort were integral to preventing recurrence. Ultimately, early recognition and comprehensive management are essential to improving outcomes and quality of life in patients with dyshidrosis.

4. Conclusion

Dyshidrosis is a recurrent vesicular dermatitis that, although not life-threatening, can significantly impair daily activities and quality of life. This case of an 18-year-old female illustrates the typical clinical presentation of dyshidrotic eczema, characterized by grouped, tapioca-like vesicles on the palms and feet, accompanied by pruritus and burning sensations. The favorable response to corticosteroid-based therapy highlights the importance of early recognition and prompt management to relieve symptoms and prevent complications. Equally important, patient education regarding hand care, avoidance of exacerbating factors, and lifestyle modification plays a central role in preventing recurrence. This case reinforces the clinical relevance of dyshidrosis in young patients and emphasizes the need for a comprehensive, holistic approach in its management.

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