ISSN: 2687-8410
DOI: 10.33552/ACCS.2026.05.000611
Archives of Clinical Case Studies
Iris Publishers

Case Report

Clinical Analysis of a Patient with Rhinophyma-like Dermatitis on the Nose and Perioral Area Complicated by Mixed Infection

Fengxia Wang[1], Chenyang Zhao[1], Siying Ma[1], Xichao Xia[1*]

[1]*Pingdingshan University, Henan Province, China*

***Corresponding author:** Xichao Xia, Pingdingshan University, Henan Province, China

Received Date: August 06, 2026

Published Date: August 11, 2026

Abstract

Objective: To investigate the diagnosis and comprehensive treatment strategy for a middle-aged male patient with atypical rhinophyma-like dermatitis complicated by infection.

Methods: We report a 44-year-old male patient admitted to our hospital in September 2025, presenting with "multiple bean-sized pustules on the nose and perioral area for 11 days." His clinical characteristics, Wood's lamp examination findings, treatment course, and follow-up results were analyzed.

Results: The patient received comprehensive anti-inflammatory and antimicrobial treatment, primarily consisting of oral minocycline, ornidazole, and topical levofloxacin cream, supplemented with red and blue light phototherapy. Within three weeks, the pustules substantially subsided, erythema and swelling markedly decreased, and the condition stabilized.

Conclusion: For patients presenting with acute pustules due to rhinophyma-like dermatitis complicated by mixed infection, early diagnosis and timely combination therapy targeting Demodex mites and bacterial infection are essential to establish an immune barrier. During the recovery phase, the therapeutic focus should shift toward reinforcing efficacy and repairing the skin barrier. Inter-individual variability necessitates individualized, syndrome-differentiated management.

Keywords: Rhinophyma-like dermatitis; mixed infection; clinical analysis

Introduction

The patient was a 44-year-old male who presented on September 18, 2025, with "recurrent erythematous papules and pustules on the nose and perioral area accompanied by swelling for 11 days." Eleven days prior, the lesions had developed without obvious precipitating factors, accompanied by mild pain and a burning sensation. Self-application of an "anti-acne cream" (specific composition unknown) proved ineffective, and the lesions progressively increased in number, prompting his visit to our hospital. The patient had been previously healthy, with no history of long-term medication use or cosmetic allergy [1].

a. Physical examination: No remarkable findings on systemic examination.

b. Dermatological examination: The skin of the nose and perioral area showed diffuse erythema and edema, with multiple scattered bean-sized pustules, some with visible pustular heads, and marked tenderness upon palpation (Figure 1). No lymphadenopathy was noted. Body temperature was

normal, and no similar lesions were observed elsewhere on the body. Ancillary examinations: Under Wood's lamp examination, the lesional skin exhibited red and orange-yellow fluorescence (Figure 2).

c. Laboratory examinations: Complete blood count, high-sensitivity C-reactive protein, and fingertip blood glucose were all within normal ranges.

Figure 1: No lymphadenopathy was noted. Body temperature was normal, and no similar lesions were observed elsewhere on the body.

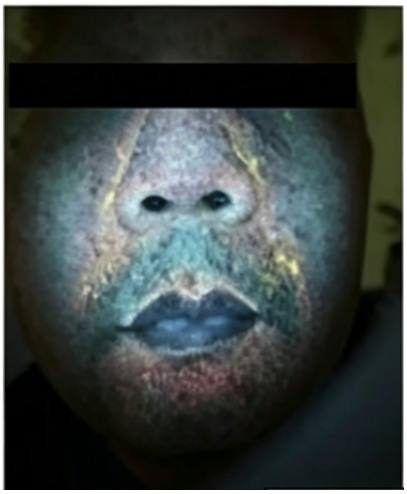

Figure 2: Ancillary examinations: Under Wood's lamp examination, the lesional skin exhibited red and orange-yellow fluorescence.

Differential diagnoses

Bacterial folliculitis/impetigo: Although the clinical presentation was similar, the lesions in this case were strictly confined to the facial "mask area," and the red fluorescence under Wood's lamp more strongly supported a diagnosis of rhinophyma associated with Demodex mite infection [2]. Herpes simplex: Typically presents as clustered vesicles with a short course and tendency for recurrence, which did not match the disease course or morphology of the present case. Acne conglobata: More common in adolescence, often accompanied by comedones, nodules, and cysts, with predilection for the back and chest. The patient's age and the monomorphic nature of the lesions did not support this diagnosis. Diagnosis: Rhinophyma-like dermatitis [3].

Treatment course

Initial treatment (September 18, 2025): The therapeutic principle was anti-inflammatory and antimicrobial. Oral medications included ornidazole tablets (anti-anaerobic, anti-Demodex), vitamin B6 tablets (adjunctive sebum suppression), minocycline hydrochloride capsules (anti-inflammatory, antimicrobial), and berberine hydrochloride tablets (adjunctive anti-inflammatory, oil control). Topical medications included Binghuang ointment (traditional Chinese medicine for heat-clearing and detoxification), clindamycin and metronidazole liniment (anti-Cutibacterium acnes, anti-Demodex), and levofloxacin hydrochloride cream (anti-Gram-positive bacteria). Phototherapy with blue light was administered to inhibit sebum secretion and exert bactericidal effects [4]. First

follow-up (September 23, 2025): Erythema and swelling of the nose and perioral area were markedly reduced; the area of pustules had not expanded, and pustular heads had decreased (Figure 3).

Figure 3: Erythema and swelling of the nose and perioral area were markedly reduced; the area of pustules had not expanded, and pustular heads had decreased.

The treatment regimen was adjusted as follows: ornidazole and berberine were discontinued; oral minocycline capsules and vitamin B6 tablets were continued; Huanglian Shangqing pills (for heat-clearing and fire-purging) were added orally. Topical medications: Binghuang ointment and clindamycin-metronidazole liniment were discontinued; levofloxacin hydrochloride cream was continued; asiaticoside cream (to promote repair and inhibit scarring) was added. Phototherapy was changed to red light therapy (anti-inflammatory, promoting healing). Second follow-up (September 30, 2025): Erythema and swelling of the nose and perioral area were significantly reduced, and pustules had substantially subsided (Figure 4). Minocycline and all topical antibiotics were discontinued [5]. Oral vitamin B6 tablets and Huanglian Shangqing pills were continued; oral asiaticoside tablets were added to further promote tissue repair. Topical treatment with mucopolysaccharide polysulfate cream (anti-inflammatory, scar prevention) was initiated, and gentle cleansing with an amino acid cleansing salt emulsion was begun.

Figure 4: Erythema and swelling of the nose and perioral area were significantly reduced, and pustules had substantially subsided.

Third follow-up (October 7, 2025): Skin lesions continued to improve, with only mild residual erythema; the condition was stable (Figure 5). The treatment plan was adjusted to continue oral Huanglian Shangqing pills and asiaticoside tablets, with the addition of oral vitamin C tablets (antioxidant, promoting collagen synthesis). Topical mucopolysaccharide polysulfate cream was continued, and asiaticoside repair cream (for skin barrier repair) was added. The patient was advised to pay attention to sun protection and avoid spicy and irritating foods and other triggering factors.

Figure 5: Skin lesions continued to improve, with only mild residual erythema; the condition was stable.

Discussion

Rosacea (also known as acne rosacea) is a chronic inflammatory skin disease occurring in the central face, characterized primarily by flushing, telangiectasia, papules, and pustules. Its pathogenesis is complex and involves innate immune abnormalities, neurovascular dysfunction, impaired skin barrier, and microbial infection (e.g., Demodex folliculorum). The diagnosis of typical rosacea is straightforward; however, when it presents with acute, multiple pustules as the predominant feature, it is easily confused with bacterial folliculitis, acne conglobata, and polymicrobial compound infections. This patient was a middle-aged male with lesions localized to the central face, presenting with papules and pustules, consistent with the clinical features of papulopustular rosacea. Wood's lamp examination, as a rapid and non-invasive ancillary tool, played a critical role in the diagnosis of this case. The orange-yellow fluorescence observed under Wood's lamp may suggest concomitant Cutibacterium acnes infection, while the red fluorescence is associated with inflammation and vascular dilation [6].

The clinical presentation and distribution characteristics of this patient supported the diagnosis of rhinophyma. It is noteworthy that rosacea, as a chronic inflammatory skin disease, exhibits significant inter-individual variability in symptom presentation, particularly in compound symptoms and disease progression, due to differences in individual physiological status, living environment, immune competence, and synergistic mechanisms between the exterior and interior. Therefore, in clinical practice, syndrome differentiation between the exterior and interior is essential, and individualized management with specific analysis for each patient during medication is required. The 2023 Chinese Guideline for the Diagnosis and Treatment of Rosacea states that for papulopustular rosacea, systemic antibiotics (such as doxycycline and minocycline) combined with topical agents (such as azelaic acid and ivermectin) constitute first-line treatment. Minocycline possesses dual anti-inflammatory and antimicrobial effects and can effectively suppress inflammatory responses [7].

In recent years, the application of photoelectric technologies such as intense pulsed light and red light in rosacea treatment has become increasingly widespread. Intense pulsed light can effectively close dilated vessels and reduce erythema, while red light primarily promotes repair through its anti-inflammatory and biostimulatory effects. In the management of this case, a multi-target, multi-dimensional, staged treatment strategy was adopted in accordance with the patient's symptom presentation at different time points. Acute phase (Week 1): Minocycline is the core therapeutic agent for papulopustular rosacea, possessing both anti-inflammatory and antimicrobial properties. Combined with ornidazole, it effectively targets Demodex mite overgrowth [8]. Topical levofloxacin and clindamycin-metronidazole cover possible secondary bacterial infections. During the acute onset, robust anti-inflammatory and antimicrobial measures were employed to establish an immune

barrier, thereby preventing deep infection. Recovery phase (Weeks 2–3): Some antibiotics were promptly discontinued, and agents such as asiaticoside and mucopolysaccharide polysulfate were introduced.

As pustules were controlled, the therapeutic focus shifted toward reinforcing efficacy and repairing the skin barrier. During this process, post-inflammatory hyperpigmentation and scarring risks were minimized, and the damaged skin barrier was restored. Effective consolidation of treatment outcomes during the recovery phase prevents rosacea recurrence and potential complications. The treatment strategy embodies foresight and hindsight, ensuring a holistic approach to the diagnostic and therapeutic system. Rational application of phototherapy: Early use of blue light for bactericidal and oil-control purposes, followed by switching to red light for anti-inflammatory and reparative effects as inflammation subsided-this sequential phototherapy enhanced efficacy while being non-invasive and safe [9]. This case report suggests that for facial dermatitis presenting as atypical rhinophyma, due to individual physiological status and environmental differences, patients may exhibit additional concomitant symptoms beyond the underlying presentation, necessitating individualized management in clinical practice.

Furthermore, Wood's lamp examination serves as a valuable diagnostic adjunct for verification and confirmation of diagnostic conclusions during clinical practice. During pharmacological treatment, individualized, staged combination therapy targeting Demodex mites, bacterial infection, and skin barrier repair can effectively control the disease, promote lesion healing, and potentially reduce recurrence rates, warranting clinical reference. For a skin disease with multiple precipitating factors and polymorphic manifestations, clinicians must thoroughly analyze underlying problems behind the symptoms, identify the principal contradiction, and consider an integrated Chinese and Western medicine treatment model when necessary.

Acknowledgment

None.

Conflict of Interest

No conflict of Interest.

References

1. Gallo RL, Granstein RD, Kang S, Mannis M, Steinhoff M, et al. (2018) Standard classification and pathophysiology of rosacea: The 2017 update by the National Rosacea Society Expert Committee. J Am Acad Dermatol 78(1): 148-155.
2. (2021) Chinese Society of Dermatology, Rosacea Research Center. Chinese guideline for the diagnosis and treatment of rosacea (2021 edition). Chin J Dermatol 54(4): 279-288.
3. (2023) Chinese Dermatologist Association. Expert consensus on the diagnosis and treatment of rosacea (2023). J Clin Dermatol 52(5): 321-327.
4. Geng RSQ, Bourkas AN, Mufti A, Sibbald RG (2024) Rosacea: Pathogenesis and therapeutic correlates. J Cutan Med Surg 28(2): 178-189.
5. Manfredini M, Barbieri M, Milandri M, Longo C (2025) Probiotics and diet in rosacea: current evidence and future perspectives. Biomolecules 15(3): 411.
6. Schaller M, Almeida LMC, Bewley A, Cribier B, Del Rosso J, et al. (2020) Recommendations for rosacea diagnosis, classification and management: update from the global ROSacea COnsensus 2019 panel. Br J Dermatol 182(5): 1269-1276.
7. van Zuuren EJ, Arents BWM, van der Linden MMD, Vermeulen S, Fedorowicz Z, et al. (2021) Rosacea: new concepts in classification and treatment. Am J Clin Dermatol 22(4): 457-465.
8. Boaretto Netto JC, Cardoso Borges AJ, Gomes Farias T, de Souza da Fonseca A (2025) Could photobiomodulation be used for treatment of rosacea. Lasers Med Sci 40(1): 250.
9. Thiboutot D, Anderson R, Cook-Bolden F, Draelos Z, Gallo RL, et al. (2020) Standard management options for rosacea: The 2019 update by the National Rosacea Society Expert Committee. J Am Acad Dermatol 82(6): 1501-1510.