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REVIEW

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Special types of folliculitis which should be differentiated from acne

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ABSTRACT

Because both acne vulgaris and folliculitis can present as inflammatory erythematous papules, pustules or nodules, they are often hard to distinguish. The importance to distinguish between these 2 shall be stressed as their pathogenesis and therapies are different and misdiagnosis or missed diagnosis may lead to improper treatment. We will introduce several special types of folliculitis that should be differentiated from acne to increase our knowledge of the disorders with an acne-like manifestation.

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Introduction

Acne vulgaris is a common and chronic cutaneous disorder that primarily affects face, chest and back of adolescents and young adults, which can thus result in multiple levels of psychological trauma. It is an inflammation of the pilosebaceous unit, which results from the proliferation of *Propionibacterium acnes* (*P.acnes*), and it can be presented as inflammatory papules, pustules, and nodules. Folliculitis refers to inflammation of the hair follicle, aroused by *staphylococcus aureus* (*S.a*) or other noninfectious factors. Follicular erythematous papules and follicular pustules on hair-bearing skin are a feature of superficial follicular inflammation. And the classic manifestation of deep folliculitis is nodules. Because of the similar clinical manifestation, it is often hard to distinguish acne vulgaris from folliculitis, and that can cause misdiagnose or missed diagnose, and thus delay correct treatment. Therefore, we need to understand and differentiate skin diseases with acne-like manifestation to help us with diagnosis and treatment. In this article, we introduce several special types of folliculitis which should be differentiated from acne, including superficial pustular folliculitis(SPF), folliculitis barbae and sycosis barbae, perifolliculitis capitis abscedens et suffodiens, folliculitis keloidalis nuchae, actinic folliculitis, eosinophilic pustular folliculitis (EPF), malassezia folliculitis and epidermal growth factor receptor (EGFR) inhibitor-induced papulopustular eruption.

Superficial pustular folliculitis

SPF, the result of inflammatory changes confined to the follicle orifice, is also known as follicular impetigo or Bockhart impetigo and is always caused by *S.a.* SPF is common on the scalp and limbs, but it can also be seen on the face, especially the perioral. The infection may secondarily arise from insect bites, scratches, or other skin injuries. Clinically, it manifests as pinhead-size, fragile, yellowish white, domed pustules (Fig. 1) with mild itching or burning. It develops in crops and heals in a few days without scar formation. Keeping the local area clean and topical antibiotics may be helpful.

Folliculitis barbae and sycosis barbae

Folliculitis barbae, a perifollicular chronic staphylococcal infection of the bearded area, is a medical term for persistent irritation caused by shaving and commonly occurs in men aged 20 to 40. It most frequently presents as superficial pustules pierced by hairs on an erythematous base and can be asymptomatic or painful and tender. If untreated the infection and inflammation can gradually progress leading to a more deeply seated infection known as sycosis barbae[1] (Fig. 2). An atrophic scar bordered by pustules and crusts may result in this case. Besides, in severe cases of sycosis, marginal blepharitis and conjunctivitis can be present. Topical antibiotics are the most commonly

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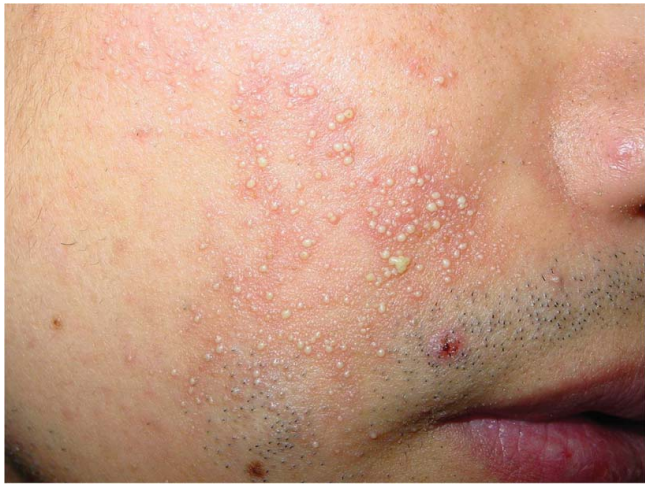

Figure 1. Superficial pustular folliculitis (SPF).

used treatments, while more extensive cases may require systemic antibiotics.

Perifolliculitis capitis abscedens et suffodiens

Perifolliculitis capitis abscedens et suffodiens, also known as dissecting cellulitis of the scalp (DCS) or Hoffman disease, is a chronic inflammatory disorder of the scalp characterized by fluctuating, interconnecting nodules (Fig. 3). It most commonly occurs in young men and is often associated with patchy hair loss.[2] Secretion culture of bacteria and fungi is always negative but secondary infection can occur. Perifolliculitis capitis abscedens et suffodiens, acne conglobata, hidradenitis suppurativa are associated with a condition called follicular occlusion triad. Oral antibiotics and oral isotretinoin treatment are the main treatment methods.

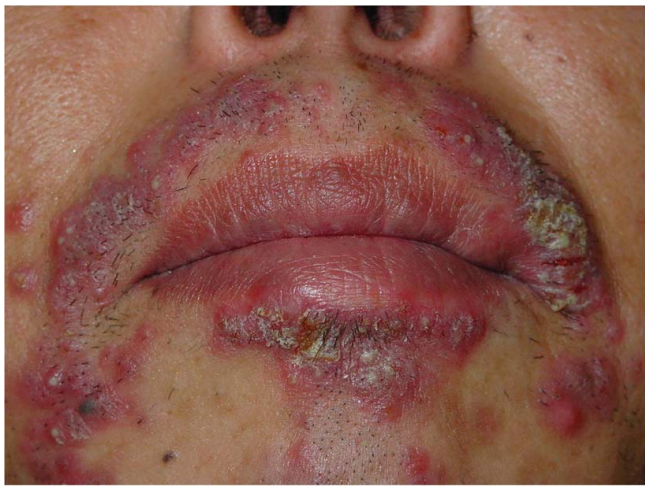

Figure 2. Sycosis barbae.

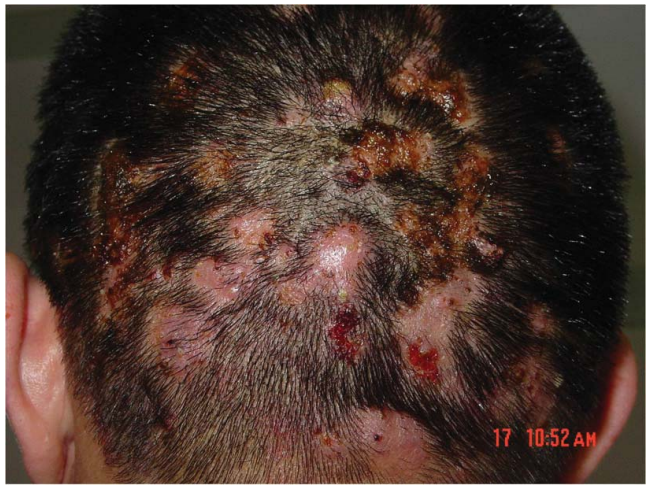

Figure 3. Perifolliculitis capitis abscedens et suffodiens.

Folliculitis keloidalis nuchae

Folliculitis keloidalis nuchae, also known as acne keloidalis, is a rare, idiopathic, inflammatory condition of the posterior neck. Occasionally, it extends onto the scalp. Approximately 90% of patients are males younger than 40 y old.[3] It presents as follicular papules coalescing into plaque associated with fibrosis and keloid formation (Fig. 4). Control of the exacerbating factors such as rubbing, scratching or wearing high-collared shirts and topical corticosteroids/antibiotics may help. Surgery is sometimes required to manage the condition.

Actinic folliculitis

Actinic folliculitis, a rare photodermatosis, usually appear between 4 and 24 hours after exposure to sunlight.[4] The mechanism by which exposure to ultraviolet light results in folliculitic lesions remains unclear. It is characterized by apruritic, erythematous, pustular eruption appearing over exposed positions such as cheeks, sides of neck, shoulders and arms (Fig. 5), which falls into the same spectrum as acne aestivalis and actinic superficial folliculitis, and should be differentiated from acne vulgaris aggravated by sunlight. Therapeutically, limiting sun exposure is necessary, and other treatments are similar to those used for acne vulgaris.

Eosinophilicpustular folliculitis

EPF is characterized by recurrent crops of sterile, intensely pruritic follicular papules and pustules with central clearing and peripheral extension (Fig. 6).

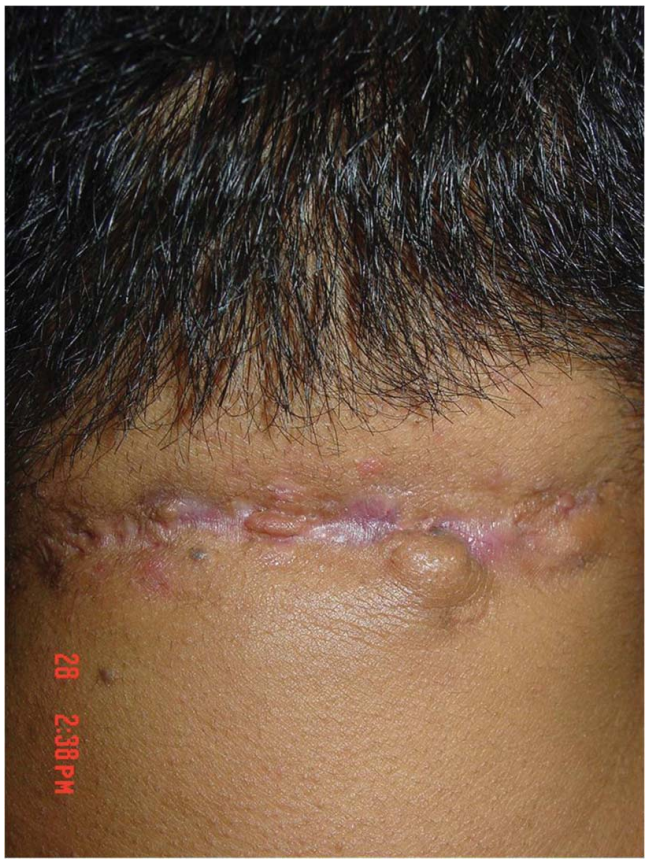

Figure 4. Folliculitis keloidalis nuchae.

Men are affected more frequently than women. In some special cases, this can also be seen in infants in a self-limited form.[5] The most common areas of involvement are the face, back, and trunk. It is found primarily in HIV-positive patients, patients undergoing treatment of hematologic malignancies and bone marrow transplant recipients.[6] To confirm the diagnosis, skin biopsy is needed.

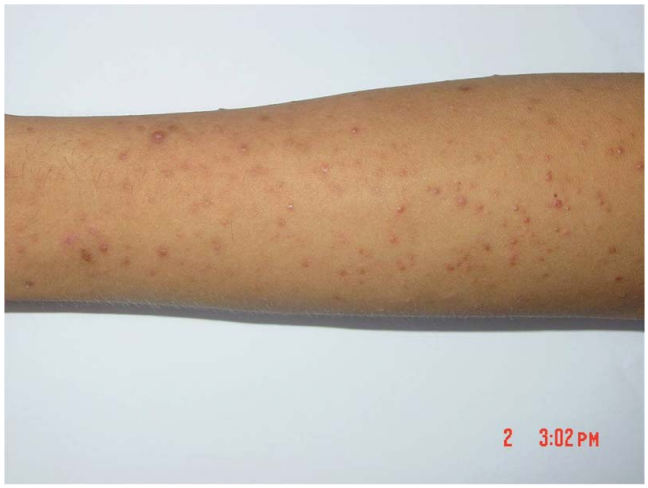

Figure 5. Actinic folliculitis.

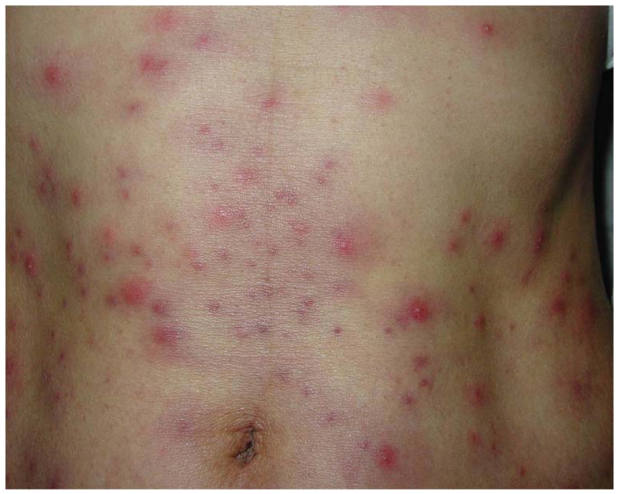

Figure 6. Eosinophilic pustular folliculitis(EPF).

We can see infiltration of eosinophils and lymphocytes focused at the level of the follicular isthmus. And follicular eosinophilic abscesses may be observed. Treatment is difficult. High-potency or superpotent topical corticosteroids are the most effective treatment.

Malassezia folliculitis

Malassezia folliculitis, formerly known as pityrosporum folliculitis, is a fungal acneiform condition. More commonly occurred on males than in females, Malassezia folliculitis results from overgrowth of yeast present in the normal cutaneous flora.[7] The eruptions often appear after sun exposure or antibiotic or immunosuppressive treatment.[8] It is characterized by small, scattered, itchy, follicular papules that develop on the back, chest, posterior arms, and sometimes the neck, which slowly enlarge to become pustular (Fig. 7). Pruritus and lack of comedones

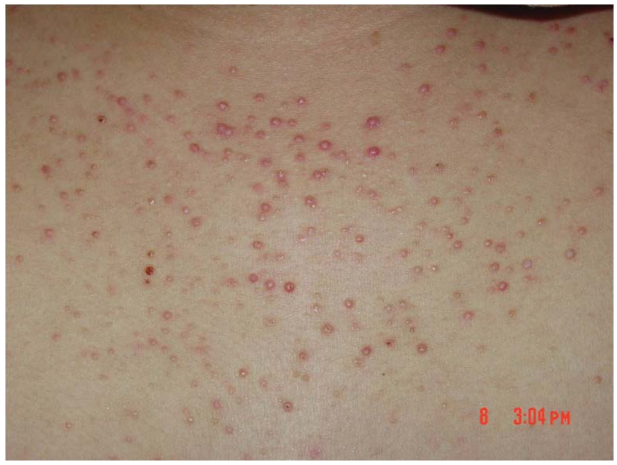

Figure 7. Malassezia folliculitis.

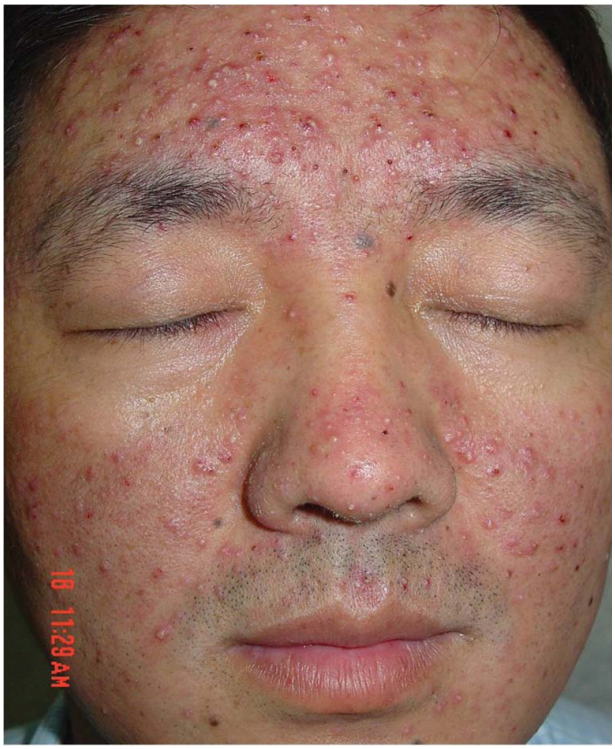

Figure 8. EGFR inhibitor-induced papulopustular eruption.

differentiate the condition from acne vulgaris. Treatment with topical azole antifungal agents may be effective, but oral therapy with itraconazole is often necessary and results in rapid improvement.

EGFR inhibitor-induced papulopustular eruption

EGFR inhibitors such as gefitinib, cetuximab are increasingly used for the treatment of advanced lung, pancreatic, colorectal, and head and neck cancers.[9] Because of the abundant expression of EGFR in the skin and adnexal structures, cutaneous adverse events including papulopustular eruptions are frequent.[10] Usually, the onset of the eruption typically occurs 1–3 weeks after beginning treatment with an EGFR inhibitor. Patients present with an eruption of follicular pustules and papules over the seborrheic areas, such as the scalp, face, upper chest and back (Fig. 8). Multiple treatments have been tried including antibiotics, corticosteroids, and retinoids. Prophylaxis with oral doxycycline or minocycline may also be of benefit.

Conclusion

It's very important to study special types of folliculitis which can be differentiated from acne. It has helped us to diagnose and treat skin diseases with acne-like manifestation accurately and effectively. Besides the diseases we mentioned in this review, there are other acne-like skin disorders that should be noticed in the clinical practice.

Disclosure of potential conflicts of interest

No potential conflicts of interest were disclosed.

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