Follicular Psoriasis

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Psoriasis is a common chronic inflammatory papulosquamous dermatosis of unknown etiology. The prototype – psoriasis vulgaris – is characterized by erythematous, scaly plaques, typically occurring on the extensor surfaces including the scalp. Other clinical subtypes such as guttate, pustular, erythrodermic, verrucous, inverse, and palmoplantar psoriasis are also well recognized.[1] In contrast, follicular psoriasis is an uncommon diagnosis and probably the least well-known subtype of psoriasis. It has only been reported in two small case series in the English literature.[2,3] Herein, we report a case of follicular psoriasis to raise awareness of this rare entity.

Our patient is a 46-year-old diabetic African-American woman who presented with a two-year history of pruritic, follicularly-based, hyperkeratotic papules on the scalp, neck, back, and extremities (Figures 1 and 3). The papules measured less than 0.3 cm in diameter, and occurred both singly and in small clusters. No significant erythema was observed; however, some lesions were associated with post-inflammatory hyperpigmentation. The patient had no history of psoriasis and lacked other classical lesions of psoriasis. Her renal function was normal. Screening for anti-nuclear and anti-ENA (extractable nuclear antigens) antibodies was negative. The clinical differential diagnosis included perforating disorder, sarcoidosis, and verrucous lupus erythematosus.

Multiple biopsies were obtained and showed the primary pathologic process to be localized to the follicular infundibula (Figure 4), which were distended by excrescent layers of parakeratotic scale admixed with neutrophils (Figure 2). The perifollicular epidermis showed mild psoriasiform hyperplasia, while the rest of the epidermis was unremarkable (Figure 4). The infundibular epithelium demonstrated mild acanthosis and hypogranulosis, and contained no perforating material within hematoxylin-eosin, trichrome, and Movat stains (Figures 5–7). Brown-Hopps and Gomori methenamine silver (GMS) stains were negative for bacterial and fungal organisms, respectively. The surrounding dermis revealed a scant perifollicular and superficial perivascular lymphocytic infiltrate. Although initial consideration was given to acute folliculitis, it was not felt to be compatible with the clinical presentation. A final diagnosis of follicular psoriasis was rendered upon clinicopathologic correlation.

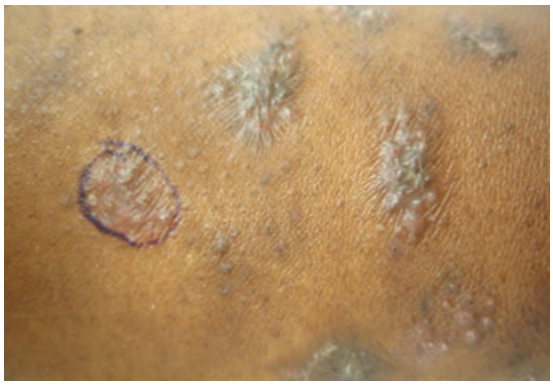

Fig. 1. There are grouped papules on the forearm. Many lesions appear to contain a central keratotic plug. (Courtesy of Dr. Thy Thy Do, Department of Dermatology, University of Michigan, Ann Arbor, MI)

In 1981, Stankler and Ewen[2] reported ten patients with follicular psoriasis (four children less than 10-years-old, and six adults from 18- to 69-years-old) and subdivided the cases into two distinct clinical types: an adult form affecting mainly females in whom the follicular lesions primarily involved bilateral thighs, and a childhood form presenting as isolated asymmetrical plaques of aggregated follicular lesions

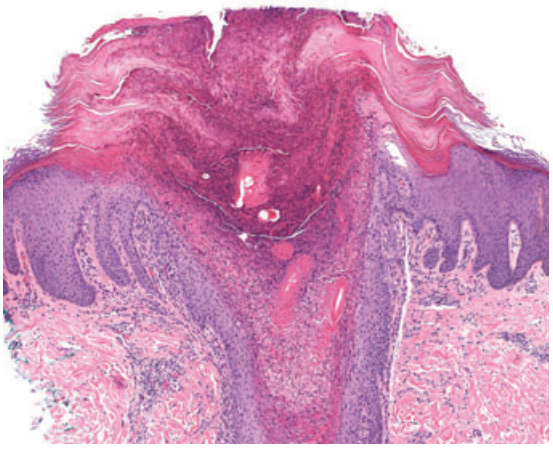

Fig. 2. A punch biopsy from the medial back demonstrates that a follicular infundibulum is distended by a large neutrophilic parakeratotic plug. The perifollicular epidermis shows mild psoriasiform hyperplasia (hematoxylin/eosin, ×30).

over the trunk, axillae, and bony prominences. Less commonly, the childhood form presented as a diffuse eruption resembling pityriasis rubra pilaris (PRP).

Several years later, Ployangam and Mutasim[3] described five additional adult patients (four females and one male, 23- to 73-years-old) with follicular psoriasis. Clinically, the patients presented with erythematous scaly follicular papules located on the trunk and extremities. The lesions were either grouped or scattered. Two of the patients also had plaque-type psoriasis of the scalp. Notably, three of the five patients had diabetes mellitus and four were of African ancestry. The authors proposed that follicular psoriasis is similar to certain follicular dermatoses (follicular lichen planus, follicular atopic dermatitis, and infundibulofolliculitis) in its predilection for dark-skinned patients.

The findings of these studies suggest that the adult form of follicular psoriasis has a higher incidence in females and appears to be associated with diabetes mellitus and African descent. Patients may or may not have coexisting plaque-type psoriasis. Microscopically, both case series described psoriasiform changes confined to the hair follicles, including marked follicular plugging by parakeratotic scale containing neutrophils, and acanthosis of the infundibular epithelium with loss of the granular layer.[2,3] Taken together, our patient – an African American woman with diabetes mellitus – presented with a discrete and grouped, hyperkeratotic follicular eruption that fits best with follicular psoriasis both clinically and histopathologically.

Several relatively common dermatologic conditions may be considered in the differential diagnosis of follicular psoriasis. Perforating disorders (including reactive perforating collagenosis, Kyrle disease, perforating folliculitis, and elastosis perforans serpiginosa) present with multiple papules with central cores of keratinous material and thus can resemble follicular psoriasis clinically. An association with diabetes mellitus has also been established.[4] Microscopically, the central cores in perforating disorders contain abundant keratin and cellular debris that may be folliculocentric and therefore may resemble the follicular plugs in follicular psoriasis. However, the microscopic hallmark of perforating disorders is perforation and transepidermal elimination of collagen, elastic fibers, or keratinous debris.[5] As the perforating channel may be focal, multiple step sections may be required to exclude a perforating disorder.

One may also consider an acute suppurative folliculitis in the histopathologic differential diagnosis of follicular psoriasis. The absence of organisms on special stains speaks against folliculitis but does not absolutely exclude it. While the microscopic distinction may be extremely difficult if not impossible, we propose the following clues that support follicular psoriasis: minimal spongiosis, lack of significant serum in the parakeratotic scale, and scant perifollicular inflammation. Whereas formation of frank pustules, follicular disruption, and greater surrounding suppurative perifollicular inflammation are features more in keeping with an acute suppurative folliculitis.[6] The lack of response to antimicrobials further helps in excluding bacterial folliculitis.

As mentioned in the study by Stankler and Ewen,[2] follicular psoriasis may clinically resemble PRP in children. While follicular plugging is seen in the follicular lesions of PRP, it typically lacks intracorneal neutrophils. In addition, PRP with non-follicular lesions would display alternating parakeratosis (both perpendicular and parallel to the skin surface), increased granular layer, broadened rete ridges, and thickening of the suprapapillary plate, which are not seen in follicular psoriasis. Significant dermal inflammation also favors PRP over follicular psoriasis.[7,8]

Follicular psoriasis tends to run a chronic course ranging from 6 months to 23 years.[2,3] In our patient, previous biopsies had been diagnosed as nonspecific acute folliculitis, and the lesions were unresponsive to treatment with oral antibiotics, ultraviolet therapy, and hydroxychloroquine. With the diagnosis of follicular psoriasis, the patient has been managed with modified Goeckerman therapy and low dose oral methotrexate and has experienced gradual improvement of her eruption.

In summary, follicular psoriasis is an underrecognized condition in which conventional lesions of psoriasis may be absent, making diagnosis more difficult. Our case shares many similarities with the previous reports, including an association with diabetes, female gender, and African ancestry. In

patients without an established history or classical lesions of psoriasis, biopsy is required for diagnosis and guidance of appropriate treatment. We posit that the accurate histopathologic diagnosis of follicular psoriasis rests upon identification of the distinctive, follicularly-centered, excrescent layers of parakeratotic scale admixed with neutrophils. Similar to other more common subtypes of psoriasis, follicular psoriasis appears to follow a chronic course.

Fig. 3. Clinically, there were small, follicularly-based, hyperkeratotic papules on the back. Many lesions were associated with mild post-inflammatory hyperpigmentation. (Courtesy of Dr. Scott Paviol, Department of Dermatology, University of Michigan, Ann Arbor, MI)

Fig. 4. Scanning magnification of the punch biopsy reveals a large follicular plug. Other than mild perifollicular acanthosis, the rest of the interfollicular epidermis and the dermis are unremarkable (hematoxylin/eosin, ×10).

Fig. 5. High-power view of the follicular plug demonstrates abundant parakeratotic keratin and neutrophils. Intracorneal serum is notably absent. The infundibular epithelium shows mild hyperplasia and minimal spongiosis (hematoxylin/eosin, ×80).

Fig. 6. Trichrome staining revealed no evidence of perforating collagen fibers. (×50)

Fig. 7. Movat staining revealed no evidence of perforating elastic fibers. (×50)

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