Case 10
A 58-year-old Thai woman from Bangkok.
Chief complaint: Multiple, linear erythematous papules and well-defined scaly plaques over her left flank for 4 days.


Fig.10.1

Present illness:
She presented with multiple pruritic, linear erythematous papules and well-defined scaly plaques over her left flank for 4 days. 3 weeks prior to the appearance of the lesions she had developed herpes zoster over the same site, corresponding to the left thoracic dermatomes T8–T10. She was treated with Acyclovir 800 mg 5 times a day for 14 days.

Past illness: Type 2 Diabetes mellitus (HbA1c 7.26%)

Family history: Her sister has psoriasis

Physical examination: Other systemic examination revealed no abnormality.

Dermatological examination:

- Multiple, linear erythematous papules and well-defined scaly plaques over the left flank (Fig.10.1)

Histopathology (S19-001900, Lt. flank):
- Psoriasiform epidermal hyperplasia, hypogranulosis and confluent parakeratosis with collection of neutrophils
- Dilated and tortuous blood vessels in dermal papillae (Fig.10.2)

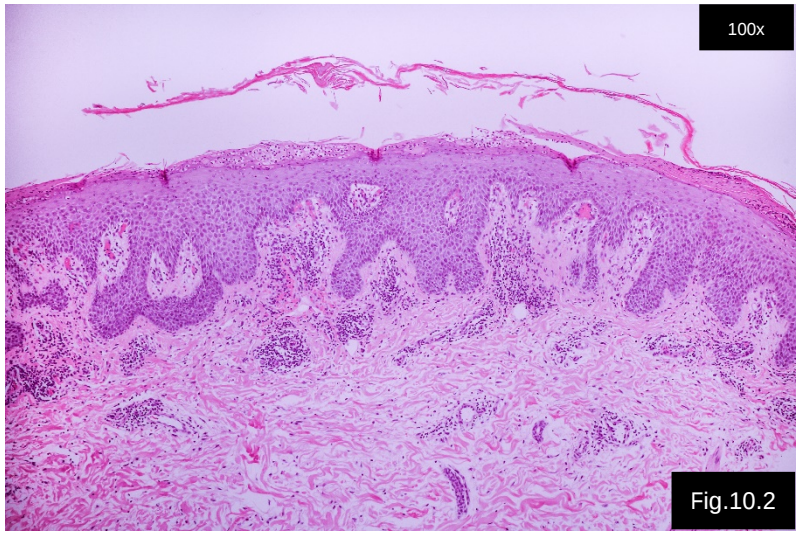

Fig.10.2

Diagnosis: Wolf's isotopic response (Psoriasis)
Treatment:
- Betamethasone dipropionate (0.5 mg/1g) with calcipotriol (5 mcg/1g) ointment apply on lesions b.i.d
- Liquid carbonis detergent 10% with salicylic acid 5% ointment apply on lesions h.s

Presenter: Kuenzang Deki, MD
Consultant: Vipawee Ounsakul, MD

Discussion:

The term “isotopic response”, was first coined by Wolf et al in 1995 to describe the occurrence of a new skin disorder at the site of another, unrelated, and already healed skin disease.[1] Later on the term “Wolf’s isotopic response” was formally accepted and included in Stedman’s Illustrated Dictionary of Dermatology Eponyms.[2] The site of the healed disease determines the site of the second entirely unrelated disease. The healed site includes scars, pigment changes, color changes, or various other minimal changes left by the first disease. The residual changes of the first dermatologic pathology probable cause localization and thus contribute to the pathogenesis of the second one, but it is not its main cause. [3]

From the 176 reported cases, isotopic response most commonly occur after herpes infection. Herpes zoster (156 cases) was the most common initially occurring disease, followed by herpes simplex (20 cases). The most common diseases that occurred as an isotopic response were granulomatous reactions, followed by malignant tumors. [4] Psoriasis occurring as the second dermatosis is rare, with only 4 reported cases in literature. [5-8]

The etiopathogenesis of this response remains unclear. Various hypotheses have been put forward;

I. A neural origin: The most favored hypothesis. Herpes zoster infection causes destruction to the A-delta and C nerve fibers in the dermis, the release of neuropeptides like substance P, vasoactive intestinal peptide, calcitonin-gene-related peptide, and α-melanocyte-stimulating hormone triggers the immunological cascade for the appearance of the second dermatosis.[9]
II. A viral origin: Viral particles remaining in the tissue causes the occurrence of the second disease. [10, 11] But recent studies failed to isolate viral DNA from the second dermatosis after 4 weeks of healed herpes infection.[11]
III. An immunological origin: The immunologically changes occurring after herpes infection makes the area prone to another disease.[12]
IV. A vascular origin: The altered circulation due to the inflammation at the site remembers the experience and localizes future insults to that area.[9]

Our patient is a 58-year-old female who presented with multiple, linear erythematous papules and well-defined scaly plaques over the left flank for 4 days. 3 weeks prior to the appearance of this lesion she developed herpes zoster over the same site, corresponding to the left thoracic dermatomes T8–T10 and was treated with Acyclovir 800 mg 5 times a day for 2 weeks. Skin biopsy was done, and histopathology showed psoriasiform epidermal hyperplasia with superficial perivascular cell infiltration. Neutrophilic microabcess was seen in the stratum corneum and dilated vessels in the papillary dermis with papillary edema, which is compatible with psoriasis. She was diagnosed with Wolf’s isotopic response, with psoriasis as the second dermatosis. To date, there is no literature on the prognosis of psoriasis that appeared as an isotopic response. However, our patient is still undergoing treatment. She has the ongoing psoriatic lesions for 8 months on the previously affected site.

References:

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