Prurigo Pigmentosa Associated with Diabetic Ketoacidosis

Sir,

Prurigo pigmentosa, reported mostly in Japan, is a distinct clinical entity which indicates characteristic clinical pictures: symmetrically distributed pruritic erythematous papules on the trunk and subsequent reticulate hyperpigmentation. Only 20 cases of non-Japanese patients have been reported (1, 2). Because several cases were associated with fasting, dieting to lose body weight and diabetes mellitus (DM), ketosis may contribute to the pathogenesis of prurigo pigmentosa (3–8). We report here a case of prurigo pigmentosa which triggered a diagnosis of associating diabetic ketoacidosis, and review the patients associated with DM.

CASE REPORT

A 20-year-old Japanese female came to our department in February 1998 with pruritic eruptions on her chest and back region which had appeared 7 days previously. She had lost 5 kg in weight during the past month. Although her past history was unremarkable, her family history revealed that her father had suffered from DM. Physical examination revealed numerous rice-sized red papules distributed in a reticulate pattern mainly on the central region of her chest and back. From the characteristic clinical picture, a diagnosis of prurigo pigmentosa was made and general laboratory tests, including examination for DM, were performed. On the day after her visit, she started to suffer from fever, nausea and appetite loss. At the second visit, 4 days after the initial visit, the previous laboratory examination revealed a high value of glycohemoglobin (HbA_{Ic} 13.8%), urinary glucose (3+) and ketone (4+). Immediate blood and urinary tests at her second visit showed blood glucose at 533 mg/dl, urinary glucose at 3+ and ketone at 4+ , in addition to the findings of hemoconcentration. She was immediately admitted to hospital for the treatment of diabetic ketosis. After administration of continuous drip infusion of insulin, the eruptions gradually reduced in accordance with an improvement in her general condition and disappearance of urinary ketone. Seven days after her admission, a biopsy specimen was obtained from the brownish erythema on her back, which revealed slight basal pigmentation and perivascular mononuclear infiltration, including a small number of melanophages, in the dermal papillae and superficial reticular dermis. These histological findings were compatible with prurigo pigmentosa.

DISCUSSION

Teraki et al. (5) suggested that ketosis may contribute to the pathogenesis because ketosis was observed in 8 of 10 cases in their series. The present case was also associated with diabetic ketoacidosis, and the disappearance of urinary ketone correlated well with the clinical course, namely, improvement of the eruptions.

We investigated all case reports of prurigo pigmentosa associated with DM, including the Japanese literature, and found 18 cases of prurigo pigmentosa associated with DM (Table I). All cases were Japanese (5–19). There were no reports of any non-Japanese patients associated with DM in the Western literature. These 18 patients ranged in age from 12 to 44 years, and the mean age was 22.9 years old. No significant differences between genders were observed in these cases; the female to male ratio was 10:8, while the dermatosis was more common in young women. In 8 cases which were treated only with insulin injection, a spontaneous resolution of the eruptions was observed. The relationship between prurigo pigmentosa and DM was thus supported. Of 14 cases of DM which were described in detail, 10 cases were insulin-dependent DM (IDDM), in spite of a high prevalence of non-insulin-dependent DM (NIDDM) in the total cases of DM. It was confirmed that prurigo pigmentosa occurred more frequently in IDDM, which progresses more easily to ketoacidosis, than in NIDDM. We therefore speculate that ketosis contributes to the pathogenesis in some cases of prurigo pigmentosa. In 7 of 10 patients associated with unnoticed and untreated DM, the eruptions occurred with pre-existing general symptoms: extreme thirst, polyuria and/or general fatigue. Onset of the eruptions was simultaneous with

Table I. *Prurigo pigmentosa associated with insulin-dependent (ID) and non-insulin-dependent (NID) diabetes mellitus*

Ref. no.	Age (years)	Gender	Type of diabetes	General treatment	For eruptions
9	21	F	ID	Insulin	Dapson
10	12	M	ID	Insulin	Dapson
10	40	M	NID?	Unknown	Dapson
11	16	F	Unknown	Unknown	Minocycline
12	44	M	ID	Insulin	None
13	14	F	ID	Insulin	None
14	19	F (twin)	ID	Insulin	None
14	19	F (twin)	ID	Insulin	None
15	17	M	NID	Insulin	Topical corticosteroid
5	15	M	ID	Unknown	Unknown
6	16	F	ID?	Insulin	None
7	30	M	NID?	Low-carbohydrate diet	Minocycline
8	32	M	NID	Glibenclamide	Minocycline
16	18	F	NID	Insulin	None
17	18	F	ID	Insulin	None
18	20	F	ID	Insulin	Minocycline
19	41	M	NID	Insulin	Minocycline
Present case	20	F	ID	Insulin	None

F= female; M= male. Although the clinical course in the case of Ref. 5 is unknown, eruptions in all other cases improved.

the symptoms, or appeared within 6 weeks after the symptoms. Therefore, attention should be paid to the pre-existing general symptoms as listed above, and urinary ketone should be examined when making a diagnosis of prurigo pigmentosa from its characteristic clinical appearance.

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