

A Case of Davener's Dermatositis: A Variant of Friction Hypermelanosis

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Davener's dermatosis is a variant of friction hypermelanosis first described in 2000. The disorder is characterized by an elongated, vertical, midline, hyperpigmented patch with indistinct borders, which was distributed along the skin overlying bony protuberances of inferior thoracic and lumbar vertebrae. Histologic study shows marked diffuse hyperkeratosis and hyperplastic epidermis with diffuse basal hyperpigmentation. We report a case of Davener's dermatosis which has never before been reported in Korea.
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Key Words: Friction hypermelanosis, Davener's dermatosis

INTRODUCTION

Davener's dermatosis is a pigmentation disorder of progressively elongated, vertical, midline hyperpigmented patch with indistinct borders, distributed along the skin overlying the bony protuberances of the lower back. It was first described as a new variant of benign friction hypermelanosis in 2000 by Naimer et al.¹. They attributed the phenomenon to friction from the rigid backrests against the skin of the lower back generated by the characteristic swaying activity that traditionally accompanies Torah study or "davening" (praying) and termed it Davener's dermatosis. Thus, we, herein, report a case of a 24-year-old male patient who experienced a typical clinical finding of Davener's dermatosis for six years.

CASE REPORT

A 24-year-old male patient of a lean body type presenting hyperpigmented patches with blurred borders extending over the lower lumbar vertebrae without any subjective symptoms for six years visited our clinic (Fig. 1). No abnormalities in his past or family history were found. On physical examination, there were no abnormal findings except the skin. He was busy preparing for an examination. Most of the activity was performed in the sitting position on rigid chairs for up to 5 hours a day. After six years, a skin lesion developed. No blood test was taken, however, a skin biopsy was done on the lesion. Histopathology revealed marked diffuse hyperkeratosis, acanthosis and clubbing and fusion of the rete ridges in the epidermis. In addition, diffuse hyperpigmentation was present at the base of the epidermis (Fig. 2). However, there were no abnormal findings in the dermis. Davener's dermatosis was diagnosed with both characteristic clinical and histopathologic findings. Correction of the patient's lifestyle was prescribed and monitored on an outpatient basis.

DISCUSSION

Pigmentation disorders have a variety of causes, ranging from focal localized mechanical to systemic

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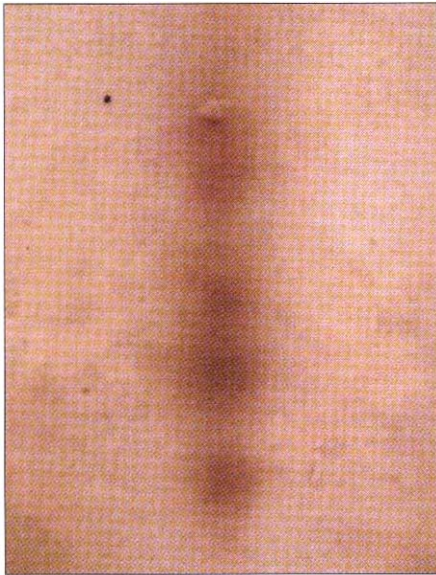


Fig. 1. Several ill-defined, elongated, vertical, mid-line, hyperpigmented patches on the overlying bony protuberances of lumbar vertebrae.

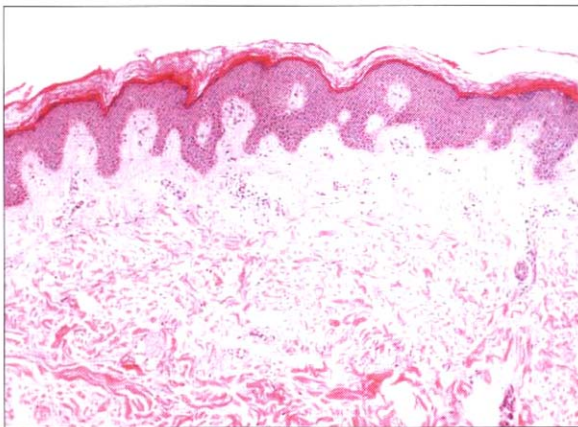


Fig. 2. Diffuse hyperkeratosis, acanthosis, elongation and fusion of rete ridge, and marked basal hyperpigmentation in epidermis.

endocrinologic factors². It is classified to "diffuse" and "circumscribed" by its clinical distribution or to "epidermic", "dermic" and "mixed" by its histopathologic findings³. Secondary hyperpigmentation may originate from mechanical factors or other dermatologic disease and postinflammatory hypermelanosis is the typical example. The frictional hypermelanosis also belongs to this category.

Frictional hypermelanosis is caused by prolonged

exposure to physical stress such as pressure, friction or chronic irritation⁴. Therefore, it is mostly developed on the skin overlying the bony protuberances but it can occur on any part of the body⁵. Moreover, it is more predominated in the skin type III-V^{6,7}. Epidermal atrophy, vacuolar degeneration and pigment incontinence in the dermis are characteristic histopathologic findings⁴. Naimer *et al.*¹ described a unique hyperpigmentation disorder similarly developed in 13 male students at Orthodox Jewish Talmudic Seminaries and termed it Davener's dermatosis. The repeated rubbing of the lower back against a rigid backrest in subjects with a lean body type was considered to induce changes that promote hyperpigmentation. Clinically, a longitudinal hyperpigmented lesion extended over the spinous processes of the lower spine with two distinguished forms, firstly the "cobblestone" form and secondly the "continuous" form. Histopathologically, diffuse hyperkeratosis, acanthosis, clubbing and fusion of the rete ridges and basal hyperpigmentation in the epidermis were observed. S-100 protein and HMB-45 immunostains demonstrated regular morphology and quantity of melanocytes.

Mechanical rubbing can induce hyperkeratosis of the skin; therefore, hyperkeratotic change in the histology of our cases was expected as a response to repeated rubbing⁸. After studying more examples of friction melanosis during the last several years, Magana⁹ elucidated that the histologic changes are variable ranging from early stages resembling the description by Naimer *et al.* (which is characterized by no melanophages in the papillary dermis and no interface changes or inflammatory infiltration) to late stage characterized by postinflammatory pigmentary alterations because this is a dynamic process. Therefore, Davener's dermatosis may belong to the early stage in this spectrum of friction melanosis, although they may also represent a distinct variant of it.

Davener's dermatosis should be diagnosed by the history of exposure to the chronic friction, clinically indistinct bordered hyperpigmented patch on the lumbar area and histopathologic findings. Differential diagnosis should include postinflammatory hyperpigmentation clinically and Becker's nevus and lentigo histopathologically which shows hyperplastic epidermis and hyperpigmentation. However, Postinflammatory hyperpigmentation is presented with preceding dermatological disorders and differs in

histopathology. Becker's nevus and lentigo convey similar histopathology and yet differences in clinical manifestation. There has been no report on the course and treatment of Davener's dermatosis, however, it is considered to be similar to the postinflammatory hyperpigmentation or friction dermatosis. Herein, we prescribed to avoid the cause and follow the progression.

In conclusion, this report describes a unique localized hyperpigmentation on the lumbar area known as Davener's dermatosis that is probably the result of mechanical trauma with other literature cited.

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