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Paediatrics Section

Images in Medicine of Davener's Dermatosis: Frictional Hyperpigmentation of the Spine

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Friction-induced dermatoses are a distinct group of skin conditions resulting from chronic mechanical pressure or repetitive trauma over bony prominences. Among these, Davener's dermatosis is an under-recognised entity that presents as benign, midline hyperpigmentation secondary to prolonged friction and posture-related stress [1].

An 11-year-old boy with a lean physique presented to the paediatric outpatient department with a concern of discoloured patches overlying his lower spine for the past nine months. He denied any cutaneous symptoms such as pain, itching, burning sensation, trauma and medication intake. The patient reported spending prolonged durations of 4-6 hours daily studying at a desk with a rigid wooden chair at school. Past medical history was non-contributory. Physical examination revealed three ill-defined ovoid hyperpigmented patches, each measuring approximately 3 cm in length and 1.5 cm in breadth overlying his thoracolumbar spinous process in a linear distribution [Table/Fig-1a]. The patch was non-tender. The dermoscopy revealed diffuse, light-to-medium brown pigmentation with an ill-defined, pseudo-reticular pattern. There was an absence of melanocytic criteria, such as globules, dots, streaks, or pigment network irregularities. No vascular structures were identified. Fine superficial scaling was present [Table/Fig-1b]. The patient's Body Mass Index (BMI) was 16.4 kg/m^2, lower than the general population average, potentially increasing friction over bony prominences.

[Table/Fig-1]: a) Clinical image of Davener's dermatosis; b) Dermoscopic image of the hyperpigmented lesion (polarised, ×10). (Images from left to right)

Based on history, physical examination and dermoscopy, a clinical diagnosis of Davener's dermatosis was made. The differential diagnoses considered included post-inflammatory hyperpigmentation, macular amyloidosis, lichen planus pigmentosus, and localised acanthosis nigricans. Post-inflammatory hyperpigmentation was excluded as there was no history of preceding inflammation, trauma, or rash. Macular amyloidosis, which typically presents with pruritic, rippled pigmentation and amyloid deposition on histology, was unlikely due to the absence of itching and the smooth dermoscopic pattern. Lichen planus pigmentosus was ruled out as the lesions were asymptomatic, midline, and located over bony prominences rather than flexural or sun-exposed areas. Localised acanthosis nigricans was excluded based on the flat morphology of lesions, lack of velvety thickening, and absence of metabolic associations. Dermoscopy showing diffuse light-to-medium brown pigmentation with fine scaling and absence of melanocytic or vascular structures supported the diagnosis of friction-induced hypermelanosis consistent with Davener's dermatosis. No further treatment or biopsy was required. The patient was provided counselling and reassurance on the benign nature of this pigmentary disorder.

Davener's dermatosis, first described in 2000, is a benign, friction and pressure induced under recognised skin condition that presents as midline, hyperpigmented macules with ill-defined borders mainly over thoracolumbar spine over the bony prominences [1]. The condition may be more prevalent in students or individuals engaging in prolonged sitting, as seen in this Denver-based case. It is often associated with repetitive mechanical trauma, such as from rigid backrests during activities like studying or praying [1]. This condition was first named by Naimer SA et al., after the term "davening" (synonymous with praying) when they discovered hyperpigmentation in multiple patients who spent hours swaying in wooden chairs praying [1]. This case presents a patient where prolonged sitting and sleeping on hard surfaces, reduced outdoor activity may contribute to its occurrence.

The histopathological features, including diffuse hyperkeratosis, acanthosis, clubbing and fusion of rete ridges and basal hypermelanosis [1-3]. Clinical differential diagnosis include post-inflammatory hyperpigmentation, macular amyloidosis, lichen planus pigmentosus, and localised acanthosis nigricans which can be distinguished by histopathology and clinical presentation. This case underscores the importance of a thorough history to identify frictional triggers, onset of lesions, pre-existing lesions, posture habits, and exposure to external factors.

Identifying the chronic friction and avoiding it is the main treatment. Other modalities of treatment that can be considered are chemical peels, topical keratolytics, topical retinoic acid analogues, hydroquinone and Q switched lasers. [4] Though under recognised, it is increasingly relevant in the paediatric population due to rising sedentary behaviours associated with screen time, online schooling, and digital entertainment. It is a clinical diagnosis, typically requiring no invasive investigations. Early recognition by paediatricians or dermatologists prevents unnecessary treatments and alleviates parental anxiety [5]. Management is focussed on behavioural modification, emollients, and occasionally mild topical steroids. Davener's dermatosis is entirely benign, preventable, and reversible, with excellent outcomes through lifestyle changes alone [6]. Increased awareness among clinicians is a key to early diagnosis and effective counselling in both children and adults.

Declaration of patient consent: The authors certify that they have obtained all appropriate consent forms, duly signed by the parent(s)/guardian(s) of the patients. In the form, the parent(s)/guardian(s) has/have given his/her/their consent for the images and other clinical information of their children to be reported in the

journal. The parents understand that the names and initials of their child/ children will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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