Photoclinic: Acanthosis Nigricans in an Adolescent With Metabolic Syndrome

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During a routine annual checkup, a 5-ft 8-in, 94.5-kg (210-lb) 13-year-old girl was noted to have a hyperpigmented "dirty" lesion on the back of her neck. The girl's parents were also obese. Her mother had type 2 diabetes mellitus.

During a routine annual checkup, a 5-ft 8-in, 94.5-kg (210-lb) 13-year-old girl was noted to have a hyperpigmented "dirty" lesion on the back of her neck. The girl's parents were also obese. Her mother had type 2 diabetes mellitus. The patient's blood pressure was 135/90 mm Hg. Her waist circumference was 39 in. She had a body mass index of 31.9 kg/m².

Bhagwan Das Bang, MD, of Opp, Ala, writes that the velvety, hyperpigmented, thick skin is diagnostic of acanthosis nigricans. This condition is usually localized to the back of the neck, axillae, areas between the legs, groin, inframammary areas, elbows, knuckles, skin around the umbilicus, or anogenital region.

Acanthosis nigricans indicates insulin resistance and is commonly associated with obesity; diabetes mellitus; other endocrinopathies, such as Addison disease, Cushing syndrome, acromegaly, thyroid disorders, Stein-Leventhal syndrome, and hyperandrogenic or hypogonadal syndrome; and drugs, such as nicotinic acid and corticosteroids. The finding of acanthosis nigricans in a nonobese child or in an uncommon location may be a red flag for an evaluation to exclude malignancy and other rare causes.

This patient had a low high-density lipoprotein cholesterol level (32 mg/dL), which, along with abdominal obesity and hypertension, suggests a diagnosis of metabolic syndrome, or syndrome X. This syndrome is also associated with impaired fasting glucose and increased triglyceride levels. The prevalence of metabolic syndrome is increasing nationwide and has reached almost 50% in severely obese children.¹

The first step in the treatment of this patient is to manage her obesity. This will require a joint effort from family members and all health care providers as well as the community and will involve major lifestyle modifications, including changes in dietary habits, increased physical activity, and reduced sedentary behavior.

In addition to weight-loss management, this patient received antihypertensive therapy with a β-adrenergic blocking agent, and her blood glucose and insulin levels were monitored annually. A topical retinoid (tazarotene) was prescribed for her acanthosis nigricans.

References: Reference:

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