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1. Acanthosis nigricans

Acanthosis nigricans (AN) is a dermatosis characterized by velvety thickening and darkening of the skin, typically in the neck fold and on the intertriginous surfaces. Acanthosis nigricans is known for its association with obesity and insulin resistance. Recognition of AN can allow the early diagnosis of metabolic syndrome and type 2 diabetes.¹ Obesity in the pediatric population has reached epidemic proportions in recent years. Currently, 25% of the pediatric population is overweight or obese,² and the incidence of childhood AN has been increasing.³ The American Diabetes Association reported that AN is a risk factor for the development of diabetes in children.⁴ Therefore, it is of paramount importance to recognize AN in the pediatric population to promote lifestyle modifications and prevent disease progression.

In addition to its association with endocrine disorders, AN can also occur secondary to taking medications such as nicotinic acid, insulin, glucocorticoids, oral contraceptive agents, and diethylstilbestrol. Further, a paraneoplastic form of AN arises in the context of gastrointestinal, genitourinary tract, and other cancers.⁵

Clinical manifestation and diagnosis

Patients present with symmetric areas of darkening and thickening of the skin, commonly in the axillae and neck fold. Less commonly involved are the groin, anogenital, cubital fossa, inframammary, and umbilical regions. Skin changes seen in AN are owing to growth factor-induced proliferation of epidermal keratinocytes and dermal fibroblasts. Perspiration and rubbing of opposed skin play contributing roles. The lesions might evolve from hyperpigmented macules or patches to palpable plaques. Acrochordons, or *skin tags*, are frequently found in the affected area. Clinical findings and history are sufficient to establish a diagnosis of AN. The physician should screen for underlying endocrine disorders, not only in the adult population but also in the pediatric population.

Differential diagnosis

In the pediatric population, AN can mimic inflammatory dermatitis with erythematous patches or superficial infection. Erythrasma (from the Greek for *red spot*) is due to the overgrowth of *Corynebacterium minutissimum*,

producing well-demarcated reddish patches, with or without scales. A Wood lamp, which reveals a characteristic coral-red fluorescence, and bacterial culture are useful in the diagnosis and distinction from AN.⁶

Intertrigo is nonspecific inflammation of opposed skin in the inframammary, axillary, inguinal, and gluteal regions, exacerbated by humid cutaneous environments. Intertrigo presents with erythematous patches that might be pruritic and tender. Clinical appearance and a history of pruritus help distinguish intertrigo from AN.⁷

Postinflammatory hyperpigmentation refers to pigmentary change that follows inflammatory dermatitis. Pigmentary changes develop following skin trauma and might take weeks or years to resolve. Although postinflammatory hyperpigmentation can occur anywhere on the skin, involvement of the intertriginous areas can clinically resemble AN.⁸

Management

The treatment of AN depends largely on the underlying cause of the disease. Basic screening studies should be done for obese children and adults without a known history of insulin resistance. As the prevalence of childhood obesity and insulin resistance are on the rise, physicians should be vigilant for AN in the pediatric population as a sign of hyperinsulinemia. Management of childhood diabetes and obesity through lifestyle modifications results in improvement and resolution of AN in many cases. 🌿

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Competing interests

None declared

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