

Leg lesions and velvety hyperpigmentation on the neck

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An obese 35-year-old woman presented with an asymptomatic “rash” on the side of her neck of 3 years’ duration (*Figure 1*). Despite vigorous cleansing and use of bleaching creams, the discoloration remained unchanged. In addition, the patient had noted “sores” on her leg over the preceding year that were unresponsive to topical antibiotics (*Figure 2*). On examination, well-circumscribed yellowish atrophic patches were noted on her shins, and a velvety, brownish discoloration was present on the sides of her neck.

What is the most likely associated disease given these dermatologic findings?



Figure 1. Velvety, hyperpigmented patches on the neck.



Figure 2. Well-demarcated yellowish-brown atrophic plaques on the shins.

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DIAGNOSIS: Acanthosis nigricans (Figure 1) and necrobiosis lipoidica diabetorum (NLD) (Figure 2), which are cutaneous manifestations of diabetes mellitus.

DISCUSSION

Cutaneous findings associated with diabetes are summarized in Table 1. They include acanthosis nigricans and NLD, both seen in this patient, as well as bullous diabetorum, diabetic dermopathy, eruptive xanthomas, generalized granuloma annulare, infections (yeast or bacterial), neuropathic foot ulcers, and scleredema. In addition, waxy, yellowish skin may be seen on fingers and hands.

Acanthosis nigricans most often appears as velvety, hyperpigmented patches on the neck, axillae, and inner thighs (1). Insulin resistance or overt diabetes mellitus is commonly present in patients with acanthosis nigricans (2). Other less common associations include medications (i.e., nicotinic acid), pituitary tumors, thyroid disorders, and ataxia telangiectasia syndrome (1). If acanthosis nigricans occurs over the palms (also called tripe palm) or involves the lips or mucosa, an internal malignancy, usually involving stomach or lung, may be present (3). "Pseudo" acanthosis nigricans may be seen in obese patients with no evidence of underlying diabetes.

Treatment of acanthosis nigricans should concentrate first on finding the underlying cause. After all reversible causes have been addressed, therapy can be instituted. Topical and systemic retinoids (1), topical calcipotriol (4), and fish oil (5) have been advocated, but improvement is slow and often incomplete.

NLD occurs predominantly in middle-aged women as well-circumscribed yellow-brown atrophic patches. Lesions of NLD may occur anywhere; however, there is a predilection for the shins. These lesions are chronic, are asymptomatic, and, while of cosmetic concern, may also be painful—especially if ulcerated. The lesions may be single or multiple, with slow, gradual enlargement of individual lesions occurring over the years. Spontaneous involution may occasionally be noted. Ulceration may rarely herald the development of a skin cancer in the area of NLD (6).

While <1% of diabetic patients have NLD, the majority of patients with NLD have diabetes mellitus (usually insulin dependent), an abnormal glucose tolerance test result, or a strong family history of diabetes (7, 8). In diabetic patients with NLD, there is no apparent relation between the occurrence of lesions and the degree of glucose control or the duration of diabetes (8, 9). NLD usually develops years after the onset of diabetes. The etiology of NLD is unknown; however, immune complex deposition with vascular changes is considered the most important factor.

Numerous treatment options exist for NLD (Table 2). In our experience, the use of class I potent topical steroids carefully applied to individual patches under occlusion leads to significant improvement, usually within weeks.

Table 1. Cutaneous manifestations of diabetes mellitus

Lesion	Clinical appearance
Acanthosis nigricans	Velvety, hyperpigmented patches on major flexures
Bullous diabetorum	Tense bullae on lower extremities
Diabetic dermopathy	Multiple brown 0.5- to 1-cm atrophic scars on shins
Eruptive xanthomas	Small, yellow papules on buttocks and shoulders
Granuloma annulare	Widespread annular pinkish-purple plaques
Infections	Recurrent yeast or bacterial infections
Necrobiosis lipoidica diabetorum	Orange-yellow atrophic patches on shins
Neuropathic foot ulcers	Well-circumscribed "punched-out" ulcers
Scleredema	Induration of skin on upper back and shoulders

Table 2. Therapy for necrobiosis lipoidica diabetorum

Therapy	Reference number
Steroids (systemic, topical, intralesional)	9–11
Platelet aggregation inhibitors (aspirin, dipyridamole)	12
Fibrinolytic agents (pentoxifylline)	13
Chloroquine	14
Psoralen + ultraviolet A phototherapy	15
Granulocyte-macrophage colony-stimulating factor	16
Hyperbaric oxygen	17

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