

Photoclinic



Figure 1. Symmetrical hyperpigmented and hyperkeratotic plaques on the face.



Figure 2. Hyperkeratotic and hyperpigmented plaques:**a)** neck, **b)** axillae.

Cite the article as: Behrangi E, Rahmanifar H, Rabani R, Kajbafi M. Photoclinic. *Arch Iran Med*. 2013; **16**(8): 493 – 494.

A 52-year-old woman presented to the Department of Dermatology with a two-year history of increased pigmentation and change in texture of the skin on her cheeks, chin, eyelids, neck, axillae, and groin. Her past medical and familial histories were unremarkable; she had no other abnormalities, malignancies or diabetes mellitus.

On examination she was not obese and her body mass index (BMI) was 24kg/m². She had symmetrical hyperpigmented and hyperkeratotic plaques on her face, neck, axillae, and groin (Fig-

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Accepted for publication: 20 December 2012

ures 1 and 2).

A complete blood count, fasting blood glucose (95 mg/dL), glucose tolerance test (2 hpp 132 mg/dL), thyroid, kidney and liver function tests, and lipid profile (LDL: 123 mg/dL; HDL: 66 mg/dL) were all normal. C-reactive protein was negative and her erythrocyte sedimentation rate was within normal limits. She had a CT scan of the chest, abdomen and pelvis, which showed no abnormalities. Upper gastrointestinal endoscopy, colonoscopy and small bowel series failed to show any evidence of gastrointestinal tract malignancy. Mammogram and pap smear test were negative. CA 19-9 and CA125 were within the normal ranges.

What is your diagnosis?
See the next page for diagnosis.

Photoclinic Diagnosis:**Acanthosis Nigricans**

The patient had a biopsy of these lesions to for confirmation of the diagnosis. Histology revealed hyperkeratosis and papillary extensions (finger-like projections) into the dermis and confirmed the suspected diagnosis of Acanthosis nigricans (AN).

AN is a skin disorder characterized by velvety, papillomatous, and hyperpigmented plaques.¹ AN tends to affect the flexural and the intertriginous areas such as the neck and axillary regions, although lesions may appear almost anywhere on the body.²

AN is more commonly observed in dark skinned persons and is seen in numerous endocrine disorders as well as malignancies. Histology reveals hypertrophy and hyperplasia of the epidermis and papillary dermis accompanied by hyperkeratosis and acanthosis. Typically, there is an increase in the extracellular matrix, resulting in papillary extensions into the dermis.³

The disorder in itself is benign and associated with insulin resistance, obesity, erythema nodosum, and certain medications (sex hormones, nicotinic acid). AN can also present as a paraneoplastic syndrome and is associated with several malignancies, mostly adenocarcinomas of gastrointestinal origin.¹

AN is mostly seen in individuals with underlying diabetes mellitus and nearly 36% of patients with newly diagnosed diabetes have AN.⁴

Obese individuals are also at an increased risk for developing AN and in one study 39% of obese children had AN.⁵ The presence of AN in obese individuals usually points toward hyperinsulinemia and peripheral insulin resistance.^{6,7}

Other causes of AN include oral contraceptive pills, growth hormones, nicotinic acid, amprenavir, Cushing's syndrome, acromegaly, non-alcoholic steatohepatitis, polycystic ovary disease and pregnancy without any underlying glucose intolerance or gestational diabetes.³

Pathologically, the lesions of AN occur secondary to elevated levels of serum insulin, resulting in the activation of insulin like growth factor-1 receptors of epidermal keratinocytes and fibroblasts.²

Any healthy patient diagnosed with AN without an underlying explanation should also be investigated for an occult malignancy. Particular attention should be on the gastrointestinal system and appropriate tests should be performed. AN also been reported with other cancers that have originated from the pancreas, ovaries, kidneys, bladder, bronchi, thyroid gland, bile duct, testes, prostate, breast, and uterine parametrium.^{3,8}

As we have reported in our case, the lesions may appear in an individual with no apparent identifiable underlying cause. Most cases of AN are idiopathic.⁹

This case demonstrates either a rare or under reported presentation of AN. AN classically has a flexural distribution that affects the axillae, groin, neck, and submammary region. The majority of previous reports of facial AN have been associated with malignancy, where it is usually seen as part of an extensive paraneoplastic disease.¹⁰

The rare presentation of AN on the face necessitates an extensive search for an underlying malignancy, particularly of the gastrointestinal system.³ As reported in our case, facial AN can be idiopathic without any underlying abnormality such as malignancy or endocrine disorders.

After excluding other causes, the patient was considered to have idiopathic acanthosis nigricans and underwent conventional dermatologic treatment for this disorder.

Acknowledgment

The authors thank the constructive comments by Habib Ansarin MD, Professor of Dermatology at Tehran University of Medical Sciences.

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