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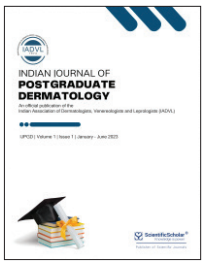

Case Report

Nevoid Acanthosis Nigricans - A rare case and successful treatment using fractional CO_2 laser

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ABSTRACT

Nevoid acanthosis nigricans is a rare variant of acanthosis nigricans that may develop at birth or before puberty. An 18-year-old boy with a lean built presented with asymptomatic hyperpigmented lesion on the left lateral aspect of the trunk since 15 years of age. There was no systemic involvement. The diagnosis of unilateral nevoid acanthosis nigricans variant was made which was confirmed by dermoscopy and histopathology.

Keywords: Unilateral nevoid acanthosis nigricans, Acanthosis nigricans, Blaschkoid

INTRODUCTION

Nevoid acanthosis nigricans is a rare variant of acanthosis nigricans that appears anytime from birth till puberty.[1] It has asymmetrical and unilateral distribution in blaschkoid pattern. There is no systemic involvement and it is not associated with insulin resistance or any syndromes. It is inherited in an autosomal dominant manner and has a benign course. It appears due to somatic mosaicism resulting from a postzygotic gene mutation.[2] Acanthosis nigricans is symmetrical and characterised by hyperpigmentation with velvety thickening predominantly affecting axillae, groins, nape of neck and umbilical area and is usually associated with insulin resistance and rarely malignancies, whereas unilateral nevoid acanthosis nigricans (UNAN) is more asymmetrical, localized, with no systemic or tumour associations, syndromes or insulin resistance and is a benign entity.[3] Sites of involvement usually include the face, scalp, chest, periumbilical and submammary region. It usually extends for some time and then either regresses or remains constant. There are <40 case reports of UNAN so far.

CASE REPORT

An 18-year-old boy presented with a large, asymptomatic and dark brown to black plaque on his left lateral abdomen since 3 years. It was initially small, but gradually increased to attain the present size. He had an average built and was not over-weight. There was no family history of similar lesions. He had no personal or family history of diabetes mellitus and endocrinopathies. There was no history of any medications before the onset of lesion. Cutaneous examination revealed a dark brown to black hyperpigmented velvety plaque on the left lateral abdomen in a blaschkoid distribution affecting T7–T8 dermatome as

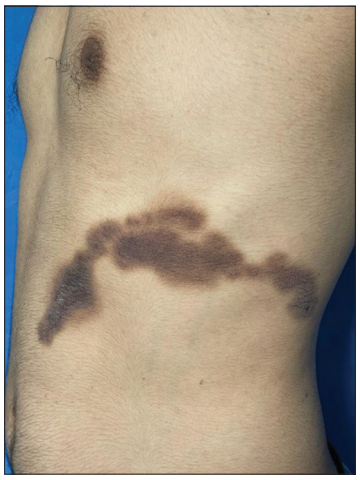

Figure 1: Left lateral view of abdomen showing dark brown to black hyperpigmented velvety plaque (Pre-treatment).

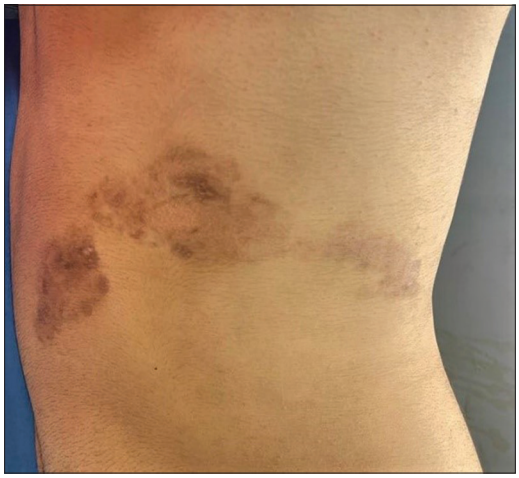

Figure 2: Left lateral view of abdomen (Post-5th session of fractional CO_2 laser).

shown in Figure 1. The axillae, neck, external genitalia, groin, inner thighs, palms and soles and mucosa were unaffected. A routine laboratory evaluation, including a full blood count, fasting glucose level, fasting insulin levels and thyroid and liver function tests were within normal limits. Dermoscopy of the affected plaque showed linear cristae and gyri with black dots and mild scaling. Skin biopsy showed hyperkeratosis and papillomatosis in the epidermis. There were sparse lymphocytic infiltrate in the upper dermis. The clinical, dermoscopic and histopathological findings confirmed the diagnosis of UNAN. The benign nature of disease was explained to the patient and fractional CO_2 laser was offered. Five sessions of CO_2 laser with monthly intervals were done and led to a good resolution with no adverse effects (Figure 2).

DISCUSSION

Nevoid acanthosis nigricans is a rare, benign, autosomal dominant variant of acanthosis nigricans with an onset before puberty. It gradually extends for sometime but post that it remains stable or regresses.[3] Unlike acanthosis nigricans which occurs on the neck and intertriginous surfaces such as axillae, groin, elbows and knees, UNAN (although clinically similar looking) has a unilateral, dermatomal distribution. While acanthosis nigricans can be familial and can be associated with diabetes, other endocrinopathies and malignancies, UNAN has no such associations. Krishnaram, in 1991, was the first to report this condition in a 17-year-old man.[4] The condition is however rare and not many cases have since been reported. Schwartz was the first to include this in the classification of AN in 1994, where UNAN has been grouped with "syndromic AN" and "acral acanthotic anomaly." Other clinical differentials include linear epidermal nevus, ichthyosis hystrix and confluent and reticulate papillomatosis.[5]

The course of UNAN is benign. Our patient's main concern was cosmetic appearance of the lesion. Acanthosis nigricans improves with the treatment of the underlying condition as seen in many case studies. There are also various treatment options described in literature such as topical or systemic retinoids, calcipotriol, long pulsed alexandrite laser treatment and fractional CO_2 laser. Our patient was treated with fractional CO_2 laser with an energy of 45 mJ/cm^2, density 15 step and depth 1 with regular follow-up treatment every month. The density and depth were increased to 18 step and 2 gradually in subsequent sessions. There was significant improvement in the lesion with every CO_2 laser session and we have completed total of five sessions so far. Successfully treatment of UNAN with fractional CO2 laser has been reported previously previously in a 9-year-old girl following two cycles of pulsed CO_2 laser.[6]

CONCLUSION

In conclusion, we describe UNAN as a rare variant of acanthosis nigricans and show gratifying results following its treatment with fractional CO_2 laser.

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Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent.

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Conflicts of interest

There are no conflicts of interest.

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