Enliven Archive
Intensifying Thoughts

Research Article www.enlivenarchive.org Enliven: Clinical Dermatology

ISSN: 2379-5832

Dermatosis Papulosa Nigra

Alexander K. C. Leung, MBBS, FRCPC, FRCP (UK & Irel), FRCPCH, FAAP[1,2*], and Benjamin Barankin, MD, FRCPC[3]

[1]Clinical Professor of Pediatrics, University of Calgary

[2]Pediatric Consultant, Alberta Children's Hospital

[3]Dermatologist, Medical Director and Founder, Toronto Dermatology Centre

*Corresponding author: Dr. Alexander K.C. Leung, Clinical Professor of Pediatrics, University of Calgary, #200, 233 – 16th Avenue NW, Calgary, Alberta, Canada T2M 0H5, Tel: (403) 230 3300; Fax: (403) 230-3322; E-mail: aleung@ucalgary.ca

Received Date: 24th May 2015
Accepted Date: 23rd June 2015
Published Date: 26th June 2015

Citation: Leung AK, Barankin B (2015) Dermatosis Papulosa Nigra. Enliven: Clin Dermatol 1(5): 008.

Abstract

Dermatosis papulosa nigra is a common, benign skin condition characterized by multiple, asymptomatic, superficial, black or dark-brown, round, dome-shaped or flat, macules or more often papules. The size of individual lesion usually ranges from 1 to 5 mm. Sites of predilection include the face, neck, and upper trunk. Dermatosis papulosa nigra occurs predominantly in darker-skinned individual. The incidence increases with age and is rare before puberty. The male to female ratio is approximately 1:2. There is a genetic predisposition. Ultraviolet irradiation may have a role to play. Activating point mutations of the *FGFR3* and the *PIK3CA* genes are involved in the pathogenesis. Treatment is usually not necessary apart from reassurance about the benign nature of the condition. For those patients in whom treatment is desired mainly for esthetic reasons, treatment options most commonly include: curettage, ablative laser, excision, and electrofulguration. Liquid nitrogen cryotherapy can also be tried in some cases with great care due to higher risk of side effects.

Keywords: Hyperpigmentation; Papules; Dark-skin; Mutations; *FGFR3; PIK3CA*; Benign; Reassurance

Introduction

Dermatosis papulosa nigra is a common, benign skin condition characterized by multiple, asymptomatic, pigmented, round, dome-shaped or flat, papules or macules localized predominately on the face, neck, and upper trunk [1,2]. The condition was first described by Aldo Castellani in 1925, based on his observations made while visiting Central America and Jamaica [3].

Epidemiology

Dermatosis papulosa nigra occurs predominantly in dark-skinned individual (Fitzpatrick skin phototypes IV to VI) [2]. The incidence in adult blacks is between 10 and 30% [2]. Asian patients are also prone to these lesions. The condition is rare in Caucasians [4]. The incidence increases with age and is rare before puberty [4,5]. The peak incidence is in the sixth decade [4,5]. The male to female ratio is approximately 1:2 [4,6].

Etiopathology

The exact etiology is not known. It is believed that the condition is caused by a defect in the nevoid development of the pilosebaceous follicle [4]. There is a genetic predisposition as there is a positive family history in approximately 50% of affected individuals [1,4]. As the condition occurs mainly in the sun-exposed areas, ultraviolet irradiation may have a role to play. It has been shown that activating point mutations of the *FGFR3* (fibroblast growth factor 3) and the *PIK3CA* (encoding for the catalytic p110 subunit of class 1 phosphatidylinositol 3-kinase) genes are involved in the pathogenesis of dermatosis papulosa nigra [7]. Some authors consider dermatosis papulosa nigra to be a variant of seborrheic keratosis in people with dark skin [7].

Histopathology

Histological examination of the lesion shows hyperkeratosis, papillomatosis, and acanthosis, invaginations of the epidermis with elongation of the rete ridges (horn cysts), and marked hyperpigmentation of the basal layer [8].

Clinical Manifestations

Clinically, dermatosis papulosa nigra presents as multiple, asymptomatic, superficial, black or dark-brown, round, dome-shaped or flat, macules or more often papules (Figure 1) [2]. In the early stage, the lesions are often smooth-surfaced. Later, they become roughened and at times verrucous. Some of the lesions may be filiform or pedunculated. The size of individual lesion usually ranges from 1 to 5 mm [9]. Sites of predilection include the face (predominantly the malar regions), neck, and upper trunk [2]. They do not tend to group or occur in a linear fashion. The lesions increase in size and number over time.

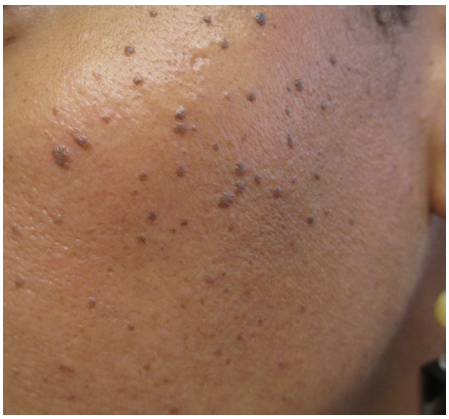

Figure 1. Dermatosis papulosa nigra presenting as multiple, smooth, dark-brown, round, dome-shaped papules in the malar area of a black woman.

Diagnosis

The diagnosis is mainly clinical. No investigation is necessary. A biopsy should be considered if the diagnosis is in doubt.

Differential Diagnosis

Differential diagnosis includes adenoma sebaceum, melanocytic nevi, verrucae, acrochordons, follicular hamartomas, and seborrheic keratosis [5].

Complications

Dermatosis papulosa nigra can be cosmetically unsightly and may affect interpersonal relationships. Other complications include mechanical irritation and, less commonly, inflammation, bleeding, pruritus, and pain [9]. An abrupt increase in dermatosis papulosa nigra may be a sign of internal malignancy [10].

Prognosis

The condition is benign and without any malignant potential. However, the lesions tend to persists and do not self-resolve. Some lesions will slowly enlarge and newer lesions develop over time.

Treatment

Treatment is usually not necessary apart from reassurance about the benign nature of the condition [8]. For those patients in whom treatment is desired mainly for esthetic reasons, treatment options most commonly include curettage, ablative laser, excision, and electrofulguration [8,9]. Liquid nitrogen can also be used in some cases with great care due to higher risk of side effects [8,9]. This is because melanocytes are very sensitive to very cold temperature.

References

1. Bruscino N, Conti R, Campolmi P, Bonan P, Cannarozzo G, et al. (2014) Dermatosis papulosa nigra and 10,600-nm CO_2 laser, a good choice. J Cosmet Laser Ther 16: 114-116.
2. Kundu RV, Patterson S (2013) Dermatologic conditions in skin of color: Part II. Disorders occurring predominantly in skin of color. Am Fam Physician 87: 859-865.
3. Castellani A (1925) Observations on some diseases of Central America. J Trop Med Hyg 28: 1-14.
4. Taylor SC, Averyhart AN, Heath CR (2011) Postprocedural wound-healing efficacy following removal of dermatosis papulosa nigra lesions in an African American population: a comparison of a skin protectant ointment and a topical antibiotic. J Am Acad Dermatol 64: S30-S35.
5. Babapour R, Leach J, Levy H (1993) Dermatosis papulosa nigra in a young child. Pediatr Dermatol 10: 356-358.
6. Grimes PE, Arora S, Minus HR, Kenney JA Jr. (1983) Dermatosis papulosa nigra. Cutis 32: 385-393.
7. Hafner C, Landthaler M, Mentzel T, Vogt T (2010) *FGFR3* and *PIK3CA* mutations in stucco keratosis and dermatosis papulosa nigra. Br J dermatol 162: 508-512.
8. Polder KD, Landau JM, Vergilis-Kalner IJ, Goldberg LH, Friedman PM, et al. (2011) Laser eradication of pigmented lesions: a review. Dermatol Surg 37: 572-595.
9. Molinar VE, Taylor SC, Pandya AG (2014) What's new in objective assessment and treatment of facial hyperpigmentation. Dermatol Clin 32: 123-135.
10. Schwartzberg JB, Ricotti CA Jr, Ballard CJ, Nouri K (2007) Eruptive dermatosis papulosa nigra as a possible sign of internal malignancy. Int J Dermatol 46: 186-187.