ORIGINAL RESEARCH PAPER

Dermatology

BEYOND BLACK HEADS - NEVUS COMEDONICUS

KEY WORDS: comedones, Keratin plugs, NEK9 mutation, Nevus comedonicus syndrome

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ABSTRACT

Nevus comedonicus is a rare epidermal hamartoma marked by grouped, dilated follicular openings filled with dark keratin plugs, typically arranged linearly along Blaschko's lines. We report a 20 year-old male with a congenital, unilateral linear lesion on the left side of chest, presenting as clustered comedone -like papules since birth. Dermoscopy and histopathology confirmed dilated follicular ostia packed with keratin and absent hair shafts. No systemic features of nevus comedonicus syndrome were found. Topical retinoid therapy led to notable improvement. Early diagnosis aids targeted treatment and exclusion of associated syndromic involvement.

INTRODUCTION:

Nevus comedonicus is an uncommon skin disorder that presents as clusters of dilated follicular openings packed with dark keratin plugs, resembling classic open comedones. It was first described by Kofmann in 1895, this rare hamartoma of the pilosebaceous unit typically follows a linear or zosteriform pattern and can involve any body site, with a preference for the face, neck, trunk, and upper limbs.[1] While often present at birth or early childhood, it may occasionally appear later in life, sometimes triggered by trauma or irritation.

Though primarily a cosmetic concern, some cases are complicated by cysts, abscesses, and secondary infections, significantly impacting a patient's quality of life. In rare instances, it may be associated with extracutaneous abnormalities, forming part of the nevus comedonicus syndrome. Despite multiple treatment options, ranging from topical agents to surgical excision, management remains challenging, especially in extensive or symptomatic cases. This report highlights a classic presentation and the therapeutic considerations involved.

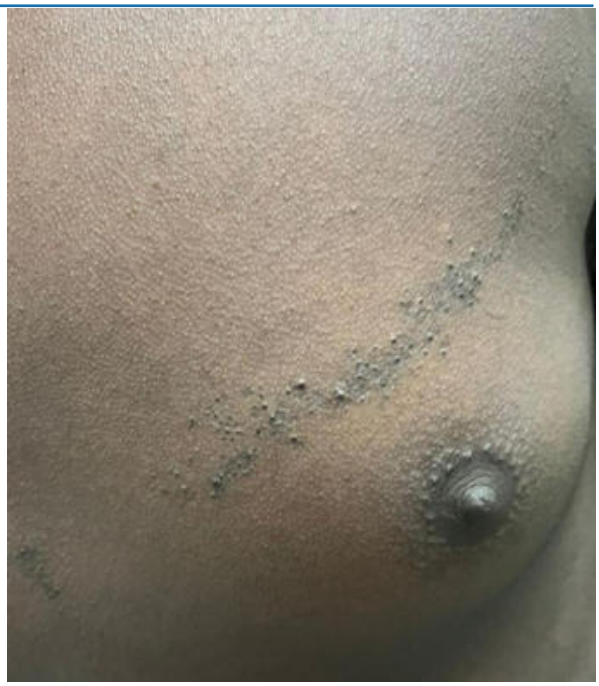
CASE REPORT:

A 20 year old male presented to Dermatology outpatient department with complaints of asymptomatic dark coloured , raised lesions over the anterior part of the left side of chest since birth, which initially began as 4 to 5 black coloured comedones which gradually progressed to the current size. He gave no history of associated pain or itching . No history of trauma, tenderness , photosensitivity , atopy or respiratory complaints . No history of lesions elsewhere in the body. No comorbidities.

On examination multiple hyperpigmented papules and comedones arranged in a linear morphology was noted over the left mammary region and few hyperpigmented papules and comedones coalescing together was noted over the centre of the chest as mentioned in figure 1. Scalp, nails and oral cavity was found to be normal.

Histopathology revealed dilated, grouped follicular infundibulum filled with laminated keratin plugs, atrophic pilosebaceous units and acanthosis with papillomatosis. Dermoscopy revealed dark, dilated follicular openings packed with brown-black keratin plugs, encircled by pale halos and set within structureless brown-filled barrel-shaped areas.

Based on clinical, histopathological and with aid of dermoscopy a diagnosis of nevus comedonicus was made.



Multiple hyperpigmented papules arranged in a linear morphology over the left mammary region and few hyperpigmented papules coalescing together was noted over the centre of the chest

DISCUSSION:

Nevus comedonicus (NC) is an uncommon hamartomatous malformation of the pilosebaceous unit, with an estimated incidence of 1 in 45,000–100,000 individuals.[2] It typically appears at birth or early childhood, presenting as grouped comedo-like papules that often follow Blaschko's lines.

Clinically and dermoscopically, NC is distinguished by multiple dilated follicular openings filled with brown-to-black keratin plugs, surrounded by circular or barrel-shaped homogeneous area features that aid in differentiating it from conditions like acne vulgaris, sebaceous nevus, or hair follicle nevus.[3] Dermoscopy, being noninvasive, is particularly useful in pediatric patients and can often negate the need for biopsy.[4]

Histopathologically, NC is characterized by deep invaginations of the epidermis (dilated follicular ostia) packed with laminated keratin, often with reduced or absent

hair shafts and sebaceous structures, along with epidermal acanthosis or papillomatosis These features contrast with acne comedones, which retain intact pilosebaceous units.

NC may occur in isolation or as part of nevus comedonicus syndrome (NCS), which includes extracutaneous manifestations-such as ocular (e.g., cataracts), skeletal (e.g., scoliosis), or neurologic anomalies—and should prompt a focused examination for such associations.[5]

Management varies by lesion severity and patient age. Conservative topical therapies—such as keratolytics, retinoids, and antibiotics often suffice in non-inflammatory cases. More resistant or cystic variants may require surgical excision, laser interventions, or novel approaches like microneedling with salicylic acid. [6] Our patient's favorable response to topical retinoid supports early, minimally invasive treatment to improve cosmetic outcomes and limit inflammation.

CONCLUSION

Nevus comedonicus an intriguing epidermal mosaic presents as clustered, dilated comedo-like openings overflowing with keratin. Diagnosis is clinical, bolstered by dermoscopy and histology. Treatment ranges from gentle topical retinoids to targeted surgical or laser interventions. Always evaluate for systemic features to rule out nevus comedonicus syndrome

Conflicts Of Interest: Nil

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