NIPPLE HYPERKERATOSIS IN A 15-YEAR-OLD GIRL

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Keywords Nipple, keratosis, dermoscopy, cryotherapy

Abbreviation **HNA** = hyperkeratosis of the nipple and areola.

Case report. A 15-year-old girl, born to non-consanguineous parents after a normal pregnancy and perinatal period, with regular psychomotor development and complete immunizations, was evaluated for dark, raised, asymptomatic lesions of both nipples that had been present for about 2 years.

The patient reported recurrent crust formation on the nipples, followed by spontaneous detachment. She had intermittently applied lanolin-based ointment for about a year, without benefit. She had no prior history of skin disorders or similar lesions. Family history was unremarkable, and no comorbidities or systemic symptoms were present.

On cutaneous examination, hyperpigmented or skin-colored plaques with digitiform projections were observed on the nipples, involving the entire nipple surface (Fig. 1, 2). On palpation, the nipples were firm, non-tender, and without discharge. The areola and breast tissue were normal, with no palpable regional lymphadenopathy. Vital signs, general examination, and systemic evaluation were unremarkable.

Dermoscopy (DERMLITE DL4, 10×) revealed a papillomatous plaque with white projections, linear vessels, superficial brownish crusts, and peripheral brown pigmentation (Fig. 3).

Based on the clinical and dermoscopic findings, the final diagnosis was nipple hyperkeratosis.

The patient was initially treated with 0.025% tretinoin cream once nightly for one month, followed by 0.05% tretinoin for an additional month, combined with emollients, without improvement. Cryotherapy was then introduced: after three weekly sessions, marked clinical improvement with flattening of the lesions was observed (Fig. 4), confirmed by dermoscopy. Continuation of cryotherapy combined with topical tretinoin was recommended.

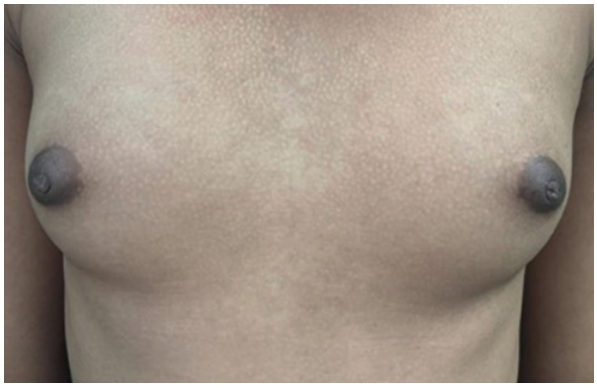

Fig. 1

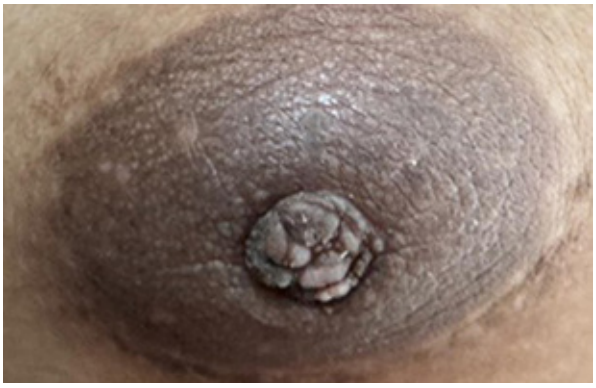

Fig. 2

Fig. 1, 2: Idiopathic hyperkeratosis of the nipples in a 15-year-old girl.

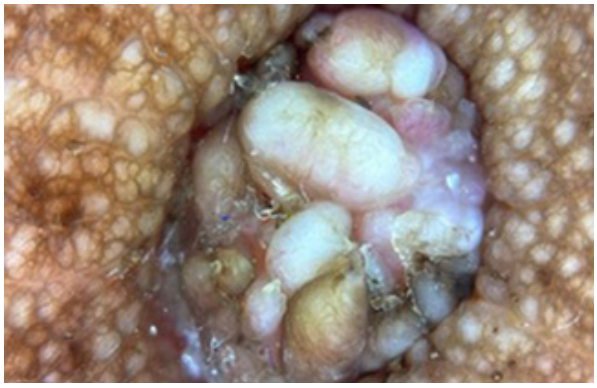

Fig. 3

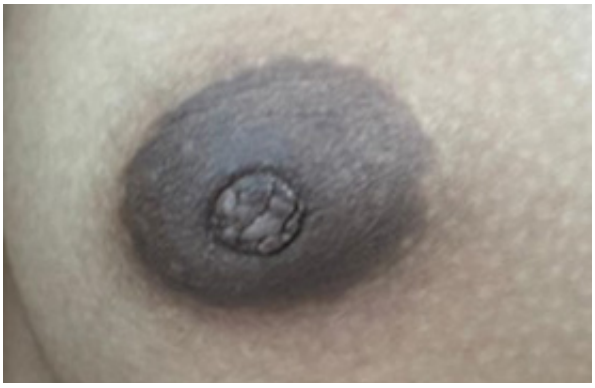

Fig. 4

Fig. 3, 4: Dermoscopic appearance (Fig. 3). In Fig. 4, clinical improvement after cryotherapy.

Discussion. Hyperkeratosis of the nipple and areola (HNA) is a benign condition characterized by verrucous thickening and pigmentation of the nipple, the areola, or both. It was first described by Tauber in 1923 (1-4). This is a rare condition: up to September 2022, approximately 150 cases of HNA had been reported (5).

Levy-Frenckel (6) proposed a three-type classification as follows: type 1: unilateral, associated with epidermal nevus; type 2: bilateral, associated with dermatoses such as ichthyosis, acanthosis nigricans, Darier disease, and cutaneous T-cell lymphoma; type 3: isolated form of unknown etiology, most commonly seen in females (4), whereas types 1 and 2 occur in both sexes.

About 80% of reported cases involve women, especially in the second and third decades of life. Although rare, the true prevalence is likely underestimated, since the lesions are usually asymptomatic and may not prompt patients to seek medical evaluation (5, 7).

The pathophysiology remains unclear. It is most often observed in women after puberty, with exacerbation during pregnancy and improvement postpartum. In some cases, it develops during estrogen therapy, suggesting a hormonal role. The unilateral forms suggest a localized mutation, while the bilateral cases may result from germline mutations (4). Some reported cases were drug-induced, particularly with estrogen therapy for prostate cancer, spironolactone, and antineoplastic agents such as vemurafenib. No viral nucleic acids have been detected in HNA lesions (8-10).

HNA can be unilateral or bilateral, strictly limited to the nipple and areola. Clinically, it presents as hyperpigmented, hyperkeratotic, verrucous plaques without induration, erythema, or discharge. Pruritus may be present in some cases (11).

Differential diagnoses include ichthyosis, epidermal nevi, acanthosis nigricans, Darier disease, seborrheic keratosis, viral warts, atopic dermatitis, Paget disease of the breast, basal cell carcinoma, and cutaneous T-cell lymphoma.

Dermoscopy typically shows multiple papillomatous proliferations with curved and branching linear vessels, yellow-brown scales and crusts, white projections, and peripheral brown pigmentation (6).

Histopathology reveals orthokeratotic epidermal hyperkeratosis, anastomosing rete ridges, occasional keratin plugs, and an irregular filiform pattern of acanthosis and epidermal papillomatosis. The basal layer is hyperpigmented without melanocytic proliferation, and the dermis may show a mild perivascular lymphocytic infiltrate (11).

There are no standardized treatment guidelines. Patient counseling regarding the benign nature and chronic course of the disease is important. Various medical and surgical approaches have been attempted, with variable success, primarily for cosmetic reasons.

Reported topical therapies include corticosteroids, retinoids, calcipotriol alone or in combination with tacrolimus. The most common adverse effect is local irritation. Cryotherapy has been success-

fully used in a case resistant to topical therapy. It involves controlled destruction of pathologic tissue with low temperatures. It is a simple, effective, inexpensive, and cosmetically acceptable technique for various skin disorders. Application methods include timed spot freeze (open or confined spray), cryoprobe use, or the dipstick method (11, 12).

More invasive methods such as shaving, CO_2 laser, and radiofrequency have been used in refractory cases. Surgical excision of the areola with nipple preservation, followed by skin grafting, has also provided good cosmetic results (11).

Conclusion. This case was presented for its rarity and to raise awareness among physicians to include nipple hyperkeratosis in the differential diagnosis of lesions confined to the nipple.

Conflicts of interest

The authors declare that they have no conflicts of interest.

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