

Therapy Letters

Radiofrequency ablation of bilateral nevoid hyperkeratosis of nipple and areola

Sir,

A 22-year-old unmarried woman had complaints of progressive darkening and irregular thickening of both nipples and areolae of about 7 years duration. It had become stable in the last 2 years. There was no itching, discharge or pain. Lesions were limited to nipples and areolae and were not present on other parts of the body. She was not obese or taking any hormonal treatment. Her medical and family history was unremarkable.

Examination showed diffuse hyperpigmented and hyperkeratotic verrucous papules coalescing to form plaques involving the entire nipple and areola on both sides, more pronounced on the right [Figures 1 and 2]. No underlying lump was palpable. There was no nipple discharge, retraction or lymphadenopathy. Complete blood counts and routine biochemical tests were normal. A sono-mammogram was also normal.

Histopathological examination of the lesion showed hyperkeratosis, irregular acanthosis and broad papillomatosis with fibrovascular cores [Figure 3]. The clinical presentation and histopathology confirmed the diagnosis of nevoid hyperkeratosis of nipple and areola.

The condition did not respond to 5 months of combination therapy with topical tretinoin and oral acitretin. Subsequently, radiofrequency ablation at half-maximal intensity was done in two sittings for each side. Lesions were removed tangentially in cutting mode with a circular loop. Care was taken to confine tissue destruction to the level of papillary dermis. As the bleeding was minimal, the operative field could be visualized clearly. Non-adherent antibiotic-impregnated dressing was used following ablation and a short course of oral antibiotics and analgesics were also given. The wound healed each time in 7–10 days with separation of a scab. Satisfactory cosmetic results were obtained in nipple and areola on both sides [Figures 4 and 5]. Post-ablation hypopigmentation occurred on one side but showed progressive improvement with time. No recurrence has been observed during one and half years of follow-up after the procedure.

Nevoid hyperkeratosis of nipple and areola is a rare, intriguing variant of hyperkeratosis of nipple and areola. The latter was first described by Tauber in 1923 as a benign dermatologic change in nipple and areola.^[1] In 1938, Levy-Frankel subdivided hyperkeratosis of nipple and areola into three main types.^[2] Type I shows hyperkeratosis of nipple and areola as an extension of epidermal nevus, type II shows hyperkeratosis of nipple and areola associated with other skin dermatoses such as atopic disease, acanthosis nigricans, ichthyosis, Darier's disease, seborrheic keratosis and Bowen's disease and type III is idiopathic or nevoid hyperkeratosis (nevoid hyperkeratosis of nipple and areola) and has no association with epidermal nevus or other dermatoses.



Figure 1: Hyperpigmented verrucous plaques involving nipple and areola bilaterally



Figure 2: Left breast showing hyperpigmented, verrucous papules coalescing into plaque involving nipple and areola

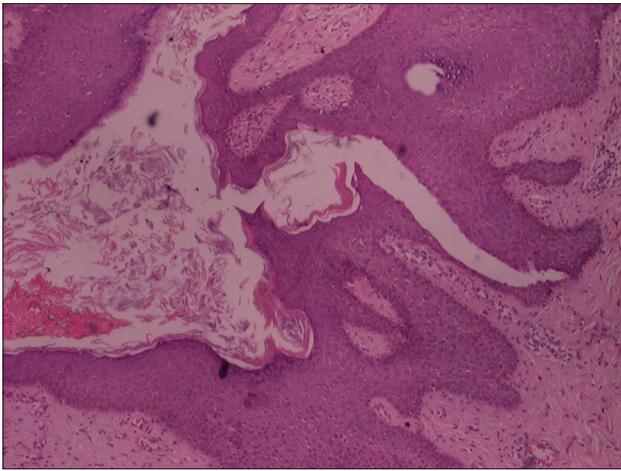


Figure 3: There is hyperkeratosis, irregular acanthosis and broad papillomatosis with fibrovascular cores (H and E, x40)



Figure 4: Left breast 3 months following radiofrequency ablation



Figure 5: Right breast 2 months following radiofrequency ablation

Our patient showed type III hyperkeratosis of nipple and areola (nevroid hyperkeratosis of nipple and areola). More than 50 cases have been reported in the

literature;^[3] we were able to find only four previous cases reported from India.^[4-6]

The condition usually presents as a diagnostic dilemma due to its variable presentation and rarity. Unknown pathogenesis and rarity of the condition account for the lack of specific management guidelines. It predominantly affects women (approximately 80%) who generally present for the first time in the second to third decade.^[3] In contrast, the age of onset in men is variable. Hyperpigmented, hyperkeratotic plaques of nipple and areola are the most characteristic presentation.^[1] Lesions are usually bilateral, may involve nipple, areola or both and are asymptomatic, the primary concern being cosmetic. Difficulty in breastfeeding has been reported in some.

Type III (nevroid hyperkeratosis of nipple and areola) has to be differentiated from type I and type II hyperkeratosis of nipple and areola. Paget's disease, Bowen's disease, dermatophytosis and basal cell carcinoma are other differential diagnoses.

The etiology of nevroid hyperkeratosis of nipple and areola is unknown. Changing estrogen level is proposed to be a triggering factor, suggested by Mold and Jegasothy on the basis of two patients who the condition after receiving diethylstilbestrol therapy for adenocarcinoma. Presentation during puberty and pregnancy and the change from unilateral to bilateral involvement during pregnancy further substantiate this theory.

There are limited reports regarding treatment options.^[2] Keratolytics are the most commonly used agents but are not always effective. Cryotherapy and carbon dioxide laser have also been effective. Topical retinoic acid and calcipotriol have been used in the past. Surgical resection with grafting has been tried but there is a risk of a circumlinear scar.^[7] Radiofrequency ablation is a cheap and easily available therapy that has been employed for many benign dermatologic disorders and there are two reports of its use in nevroid hyperkeratosis of nipple and areola in the past with encouraging results.^[6,8] In contrast to cryotherapy and carbon dioxide laser, the desired depth of tissue destruction is achieved in a controlled manner and the operative field is better visualized due to minimal bleeding during the procedure.^[8]

Acknowledgment

I would like to thank Dr. Anil Kumar Singh for reviewing the manuscript.

Financial support and sponsorship

Nil.

Conflicts of interest

There are no conflicts of interest.

Anupama Singh

Department of Skin and V.D., Patna Medical College, Patna, Bihar, India

Address for correspondence: Dr. Anupama Singh,
M2/9, Shri Krishna Puri, Jaya Prakash Path,
Patna - 800 001, Bihar, India.
E-mail: dranupamasingh@yahoo.co.in

REFERENCES

1. Baykal C, Büyükbabani N, Kavak A, Alper M. Nevroid hyperkeratosis of the nipple and areola: A distinct entity. *J Am Acad Dermatol* 2002;46:414-8.
2. Levy-Frankel A. Ka les hyperkeratoses de l'areole et du mamelon. *Paris Med*1938;28:63-6.
3. Krishnan RS, Angel TA, Roark TR, Hsu S. Nevroid hyperkeratosis of the nipple and/or areola: A report of two cases and a review of the literature. *Int J Dermatol* 2002;41:775-7.
4. Chikhalkar SB, Misri R, Kharkar V. Nevroid hyperkeratosis of nipple: Nevroid or hormonal? *Indian J Dermatol Venereol Leprol* 2006;72:384-6.
5. Shastry V, Betkerur J, Kushalappa PA. Unilateral nevroid hyperkeratosis of the nipple: A report of two cases. *Indian J Dermatol Venereol Leprol* 2006;72:303-5.
6. Verma P, Pandhi D, Yadav P. Unilateral nevroid/primary hyperkeratosis of nipple and areola successfully treated with radiofrequency ablation. *J Cutan Aesthet Surg* 2011;4:214-5.
7. Foustanos A, Panagiotopoulos K, Ahmad D, Konstantopoulos K. Surgical approach for nevroid hyperkeratosis of the areola. *J Cutan Aesthet Surg* 2012;5:40-2.
8. Ozyazgan I, Kontas O, Ferahbas A. Treatment of nevroid hyperkeratosis of the nipple and areola using a radiofrequency surgical unit. *Dermatol Surg* 2005;31:703-5.

This is an open access article distributed under the terms of the Creative Commons Attribution-NonCommercial-ShareAlike 3.0 License, which allows others to remix, tweak, and build upon the work non-commercially, as long as the author is credited and the new creations are licensed under the identical terms.

Access this article online	
Quick Response Code:	Website: www.ijdv1.com
	DOI: 10.4103/0378-6323.186478

How to cite this article: Singh A. Radiofrequency ablation of bilateral nevroid hyperkeratosis of nipple and areola. *Indian J Dermatol Venereol Leprol* 2016;82:730-2.

Received: September, 2015. **Accepted:** December, 2015.