Verrucous Cyst with Cutaneous Horn

Dear Editor,

Cutaneous horns are hard, conical-shaped projections that may arise from any epidermal lesions. Most commonly, they arise from benign lesions; however, they may arise from premalignant and malignant lesions as well. Here, we report a case of cutaneous horn arising from an underlying verrucous cyst. A verrucous cyst is an uncommon, histopathologically diagnosed epithelial cyst. It shows findings of an epidermoid cyst with the lining wall showing histologic features of a human papillomavirus (HPV) infection.

A 60-year-old female presented with an asymptomatic single hard projection with underlying swelling over her left forearm for a 1-year duration. She noticed an increase in the size of the swelling for the past few months. Cutaneous examination revealed a single hard conical projection with a surrounding collar and hyperpigmentation over the extensor aspect of the left forearm. A soft, mobile, nontender nodule of size 2 × 2 cm was underneath it [Figure 1]. A provisional diagnosis of cutaneous horn with epidermoid cyst was made. A 4-mm punch biopsy was planned for the cutaneous horn, including the underlying swelling. During the biopsy, frank cheesy material was present right underneath the hard projection. The cheesy material was extruded completely via the opening made by biopsy punch and a sac was visible. The biopsy material along with the sac was sent for histopathological examination. Epidermis showed a lesion consisting of a column of keratin associated with cup-like invagination of the epidermis with acanthosis and hypergranulosis [Figure 2a]. The dermis showed another lesion with acanthosis, papillomatosis, and marked hyperkeratosis [Figures 2b and c]. Koilocytic atypia and prominent keratohyalin granules were noted [Figure 2d]. The final diagnosis of cutaneous horn with an underlying verrucous cyst was made. The patient is doing well at 6 months of follow-up without any recurrence.

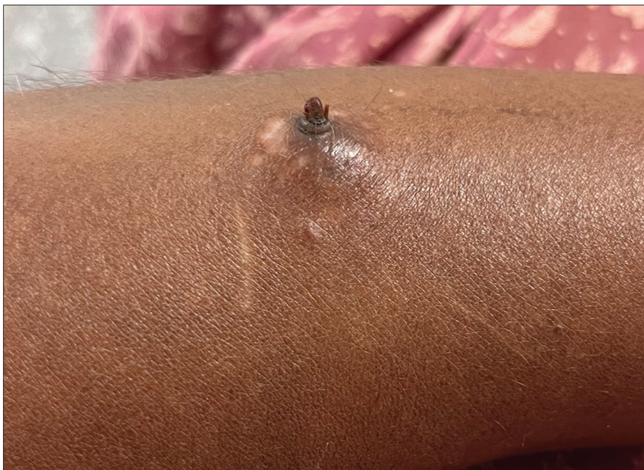

Figure 1: A single hard conical projection with a surrounding collar and an underlying nodule seen over extensor aspect of left forearm

Cutaneous horns (*Cornu cutaneum*) are white to yellow, hard, keratotic conical projections arising from abnormal keratin accumulation. They can occur anywhere on the body, but usually favor sun-exposed sites. Mostly, they arise from benign lesions such as seborrheic keratosis, verrucae, molluscum contagiosum, lichenoid keratoses, trichilemmal, and epidermoid cysts. They may sometimes arise from premalignant and malignant lesions, such as actinic keratosis, Bowen's disease, keratoacanthoma, and squamous cell carcinoma.[1] Epidermoid cyst is a benign, capsulated subepidermal nodule containing keratin and its breakdown product, which is surrounded by an epidermoid wall. It most commonly occurs over the face and upper trunk. HPV-infected epidermoid cysts are called verrucous cysts. First described in 1991 by Meyer *et al.,* the verrucous cyst is a nonplantar epidermoid cyst with histologic features of HPV infection. The viral changes include acanthosis, hypergranulosis with large, irregular keratohyaline granules, and papillomatosis of the cyst lining. Sometimes, koilocytic changes are also seen.[2,3]

Palmoplantar epidermoid cyst represents a related histopathologic entity in which HPV has been detected by immunohistochemistry and molecular studies, specifically types 57 and 60.[3] However, no specific HPV type was identified in many reports of verrucous cysts.[2,4] There is one report each of HPV type 60 and type 59 in association with verrucous cysts.[3] HPV types 6 and 11 were detected in one scrotal epidermoid cyst.[4] The pathogenesis of verrucous cysts still remains obscure; however, it is postulated that HPV may directly induce cyst formation, or it may infect a pre-existing cyst.[3]

The main histopathological differential diagnoses in our case were inverted follicular keratosis, which lacks a central cystic cavity[2] and "epidermoid cysts with seborrheic verruca-like cyst wall", which is characterized by the presence of pseudo horn cysts and many squamous eddies in the cyst wall, in addition to the verruca-like changes.[5]

In our patient, the upper part of the lesion showed a keratin column compatible with the cutaneous horn, and the dermis showed another lesion with hypergranulosis, koilocytes, and hyperkeratosis which favored a diagnosis of a verrucous cyst. To the best of our knowledge, there is

 © 2023 Indian Dermatology Online Journal | Published by Wolters Kluwer - Medknow

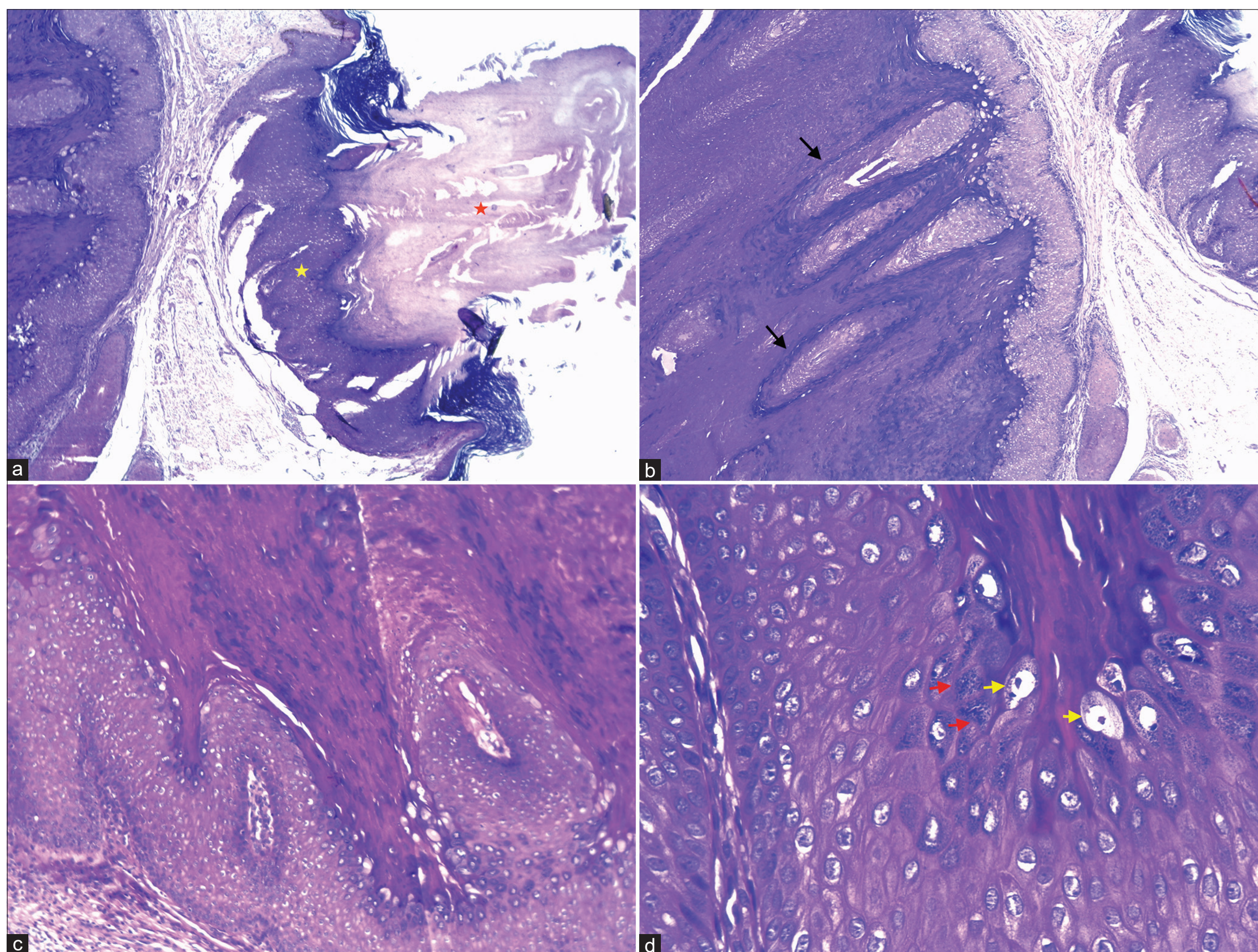

Figure 2: (a) Cup-like invagination of epidermis with acanthosis, hypergranulosis (yellow star), and column of keratin (red star) (H and E, 4X) (b) Dermis shows a lesion lined by squamous epithelium exhibiting acanthosis, papillomatosis, and hyperkeratosis (black arrow) (H and E, 4X) (c) Dermal lesion showing hypergranulosis and hyperkeratosis (H and E, 10X) (d) Viral cytopathic changes (yellow arrow) and prominent keratohyaline granules (red arrow) noted (H and E, 40X)

no reported case of a cutaneous horn on verrucous cyst in the literature. Although rare, cutaneous horn arising from a verrucous cyst is a possibility.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

Financial support and sponsorship

Nil.

Conflicts of interest

There are no conflicts of interest.

Setu Mittal, Janani Ravichandran, Sakthisankari Shanmugasundaram[1], Amuthavalli Kanagarajan

Departments of Dermatology, [1]Pathology, PSG Institute of Medical Sciences and Research, Coimbatore, Tamil Nadu, India

Address for correspondence:
Dr. Janani Ravichandran,
Department of Dermatology, PSG Institute of Medical Sciences and Research, Coimbatore - 641 004, Tamil Nadu, India.
E-mail: jananiii0602@gmail.com

References

1. Copcu E, Sivrioglu N, Culhaci N. Cutaneous horns: Are these lesions as innocent as they seem to be? World J Surg Oncol 2004;2:18.
2. Meyer LM, Tyring SK, Little WP. Verrucous cyst. Arch Dermatol 1991;127:1810-2.
3. Kim H, Seok JY, Kim SH, Cho NH, Chung WS, Hann SK, *et al*. Human papillomavirus type 59 identified in a verrucous cyst of the flank. Eur J Dermatol 2006;16:254-7.

4. Nanes BA, Laknezhad S, Chamseddin B, Doorbar J, Mir A, Hosler GA, *et al*. Verrucous pilar cysts infected with beta human papillomavirus. J Cutan Pathol 2020;47:381-6.
5. Chun SI, Im S. An epidermoid cyst with a seborrheic verruca-like cyst wall. J Dermatol 1990;17:260-3.

This is an open access journal, and articles are distributed under the terms of the Creative Commons Attribution-NonCommercial-ShareAlike 4.0 License, which allows others to remix, tweak, and build upon the work non-commercially, as long as appropriate credit is given and the new creations are licensed under the identical terms.

How to cite this article: Mittal S, Ravichandran J, Shanmugasundaram S, Kanagarajan A. Verrucous cyst with cutaneous horn. Indian Dermatol Online J 2024;15:518-20.

Received: 22-Apr-2023. **Revised:** 31-May-2023. **Accepted:** 03-Jun-2023. **Published:** 03-Apr-2024.

© 2024 Indian Dermatology Online Journal | Published by Wolters Kluwer - Medknow