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# Cutaneous Horn Arising from Chronic Plaque Psoriasis over the Ankle: A Rare Clinicodermoscopic and Histopathological Case Report

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**KEYWORDS**

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**ABSTRACT:**

Psoriasis vulgaris is a chronic immune-mediated inflammatory dermatosis that usually presents with erythematous scaly plaques, while cutaneous horn is an uncommon hyperkeratotic projection whose clinical significance depends on the nature of the underlying lesion. Horn formation over a psoriatic plaque is distinctly rare and may simulate premalignant or malignant pathology, warranting histopathological evaluation. We report a rare case documented in the Department of Dermatology, Venereology and Leprosy, Sree Balaji Medical College and Hospital, Chennai. A 50-year-old woman with an 18-year history of chronic plaque psoriasis presented with a horn-like growth over the lateral aspect of the right ankle of five months' duration. The lesion had arisen over a pre-existing hyperpigmented scaly plaque and enlarged gradually without pain, bleeding, ulceration, or rapid growth. Examination showed multiple hyperpigmented scaly plaques over both feet and ankles, with a solitary firm yellowish conical keratotic projection measuring about 1 cm in height and having a broad base over a psoriatic plaque on the right ankle. Dermoscopy demonstrated compact keratin with regularly arranged dotted vessels over a light erythematous background, favouring psoriasis. Complete excision including the base was performed because of the possibility of underlying benign, premalignant, or malignant pathology. Histopathology revealed marked hyperkeratosis, parakeratosis, acanthosis with elongated rete ridges, and neutrophilic collections consistent with psoriasis, with no dysplasia or malignancy. The postoperative course was uneventful. This case highlights a rare manifestation of psoriasis and emphasizes that all cutaneous horns require excision and histopathological examination to exclude occult malignant transformation.

## Introduction

Cutaneous horn, or cornu cutaneum, is an uncommon clinical entity defined as a conical hyperkeratotic projection whose height is greater than half the diameter of its base and which is composed of compact cornified keratinocytes without an osseous core.(1) Its significance lies not in the horn itself but in the lesion at its base. In the 2023 review by Cohen, the commonest associated diagnoses were actinic keratosis (25%), squamous cell carcinoma (19%), seborrheic keratosis (19%–20%), and verruca vulgaris (18%); psoriasis was listed among the rare inflammatory dermatoses associated with horn formation.(1) Cutaneous horns usually favour sun-exposed sites, and Singal et al. noted that the underlying lesion may be benign in 41%–60% of cases, while malignant transformation, most often into squamous cell carcinoma, has been reported in around 20%–25% of cases, making biopsy of the base essential.(2)

Psoriasis vulgaris is a chronic, immune-mediated inflammatory dermatosis characterized by sharply demarcated erythematous plaques with silvery-white scale, and it accounts for approximately 80%–90% of all psoriasis cases; globally, psoriasis shows marked geographic variation, with adult prevalence ranging from 0.14% to 3% in different regions.(3) Dermoscopy

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has become an important adjunct in the evaluation of papulosquamous disorders, and plaque psoriasis typically shows diffuse white scales with symmetrically and regularly distributed dotted vessels on a light or dull red background. In the 2024 review by Wu et al., red-dotted vessels were reported in 96.0%–100% of psoriasis vulgaris lesions, while regular vascular distribution showed a diagnostic specificity of 100%; white scales were observed in 64.7%–88.3% of lesions.(4) Because thick hyperkeratosis can obscure these vascular clues, atypical or exophytic psoriatic lesions may still require excision and histopathological confirmation.

Psoriasis-associated horn formation is distinctly unusual, and the available literature remains limited to isolated reports, including verrucous psoriasis with multiple horns and a cutaneous horn overlying squamous cell carcinoma on a psoriatic plaque. Against this background, the present case documented in the Department of Dermatology, Venereology and Leprosy, Sree Balaji Medical College and Hospital, Chennai was clinically important because it represented a rare horn arising from a longstanding psoriatic plaque with benign psoriatic histology, while still mandating exclusion of occult dysplasia or carcinoma.

**Case Report**

A 50-year-old woman with an 18-year history of chronic plaque psoriasis presented with a horn-like growth over the lateral aspect of the right ankle that had been present for five months. She reported that the lesion had arisen over a pre-existing hyperpigmented scaly plaque and had gradually increased in size, without associated pain, bleeding, ulceration, discharge, or rapid enlargement. Cutaneous examination revealed multiple well-defined hyperpigmented scaly plaques over both feet and ankles. Over one psoriatic plaque on the right lateral ankle, there was a solitary, firm, yellowish, conical keratotic projection measuring approximately 1 cm in height with a broad base. The lesion base was non-tender and non-indurated, and no regional lymphadenopathy was detected. Dermoscopic evaluation demonstrated compact keratin with regularly distributed dotted vessels over a light erythematous background, a vascular pattern consistent with psoriasis. In view of the clinical diagnosis of a cutaneous horn, and because such lesions may overlie benign, premalignant, or malignant pathology, complete excision including the base was performed and the specimen was sent for histopathological examination. Microscopy showed marked hyperkeratosis, parakeratosis, acanthosis with elongated rete ridges, and neutrophilic collections, in keeping with psoriasis, with no evidence of dysplasia or malignancy. The postoperative period was uneventful, and the patient was kept on regular follow-up. This presentation appeared to be distinctly uncommon, as cutaneous horn arising from psoriatic plaques has only rarely been described in the literature.

**Discussion**

Cutaneous horn is a morphological designation rather than a histopathological diagnosis and refers to a conical, dense, hyperkeratotic projection composed of compact stratum corneum arising from an underlying epidermal lesion. The clinical importance of this entity lies in the pathology at its base, which may be benign, premalignant, or frankly malignant.(5) In the large histopathological study by Yu et al. involving 643 cutaneous horns, 38.9% arose from premalignant or malignant lesions, underscoring why the horn itself should be viewed as a sign rather than a diagnosis.(6) Mantese et al., in a retrospective series of 222 cases, similarly found that 58.56% of lesions had premalignant or malignant pathology, confirming that routine histological assessment is warranted even when the lesion appears clinically innocuous.(7) Against this background, the present case was noteworthy because the horn arose from a longstanding psoriatic plaque rather than from the more usual keratinocytic neoplasms or actinic lesions.

Several clinical features have been associated with a higher likelihood of malignant pathology beneath a cutaneous horn, including older age, male sex, a broad base, tenderness or pain at the base, erythema, and a low height-to-base ratio. Pyne et al., in a prospective clinicodermoscopic study of 163 horns, found invasive squamous cell carcinoma (SCC) in 34.4% of cases and reported that invasive SCC-associated horns were more likely to have a height less than the base diameter, less terrace morphology, more base erythema, and more pain.(8) Fernandes et al. also emphasized that larger lesions and tenderness at the base should heighten suspicion for malignancy.(5) In the present patient, the

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lesion had a broad base, but the absence of tenderness, ulceration, bleeding, induration, and regional lymphadenopathy reduced the clinical suspicion of invasive malignancy; however, these reassuring features could not exclude dysplasia or carcinoma with certainty, thereby justifying complete excision with histopathological examination.

The anatomical location in this case also deserves comment. Cutaneous horns occur predominantly on chronically sun-exposed sites, particularly the head, neck, and upper extremities. Mantese et al. found that the commonest sites were the head (35.14%) and upper limbs (31.08%).(7) By contrast, a horn arising on the lateral ankle is distinctly less typical, which makes a purely actinic mechanism less convincing in this patient. A plausible explanation is that chronic hyperproliferation within the psoriatic plaque, compounded by repeated mechanical irritation at the ankle and the known koebnerizing tendency of psoriasis, may have promoted exaggerated keratin accumulation and horn formation.(9) This interpretation remains inferential, but it is biologically plausible because psoriasis is the prototype dermatosis for the Koebner phenomenon, in which lesions develop or are modified at sites of trauma.

Dermoscopy was particularly helpful in this case because it supported psoriasis as the underlying process before histopathology was available. Pan et al. showed that the combination of red dots, a homogeneous vascular pattern, and a light-red background yielded a diagnostic probability of 99% for psoriasis.(10) Xu et al. reported that regularly arranged dotted vessels over a light red background were diagnostically useful, with sensitivity values of 80.6% and 71.0%, respectively, and specificities of 73.0% and 75.7%,(11) while Nwako-Mohamadi et al. confirmed that light red background, red dotted vessels, regular vessel distribution, and white scaling are among the commonest dermoscopic features of plaque psoriasis.(12) Therefore, the demonstration in our patient of compact keratin with regularly distributed dotted vessels over a light erythematous background strongly favoured a psoriatic substrate beneath the horn and helped narrow the differential diagnosis away from verruca vulgaris, seborrheic keratosis, or invasive keratinocytic malignancy.

Histopathology ultimately established the diagnosis and excluded the most important mimics. Classical plaque psoriasis is characterized by hyperkeratosis, confluent parakeratosis, regular acanthosis, elongated or clubbed rete ridges, dilated papillary dermal vessels, and neutrophilic collections in the stratum corneum or upper epidermis, classically described as Munro microabscesses and spongiform pustules of Kogoj. Kimmel et al., Park et al., and later reviews all identified parakeratosis with neutrophils and evenly elongated rete ridges as strong histological indicators of psoriasis.(13, 14) The findings in the present case—marked hyperkeratosis, parakeratosis, acanthosis with elongated rete ridges, and neutrophilic collections without dysplasia—were therefore entirely in keeping with a psoriatic horn. This distinction is crucial because verruca vulgaris would be expected to show papillomatosis and koilocytotic change, whereas verrucous carcinoma or SCC would demonstrate cytologic atypia and invasive growth, neither of which was present here.(15)

The rarity of this presentation is supported by the limited number of reports in the literature. Lucky and Carter described a 49-year-old woman with psoriasis who developed multiple cutaneous horns on the lower extremities after becoming profoundly hypothyroid; notably, those growths regressed after thyroid replacement.(16) Sengupta et al. later reported a 32-year-old man with multiple horns of varying size and shape over psoriatic lesions on the scalp.(17) More recently, Danny et al. explicitly described a cutaneous horn arising from a noncancerous psoriatic plaque and emphasized the rarity of the association.(18) Taken together, these reports indicate that horn formation on psoriatic plaques is exceptional and usually appears only as isolated case reports rather than as a recognized clinicopathological pattern within psoriasis. The current case adds to that sparse literature by documenting a solitary horn over a chronic plaque on the ankle with benign psoriatic histology.

Although the horn in this patient proved benign, the decision to excise it was still appropriate because psoriasis does not eliminate the possibility of concurrent neoplasia. In a systematic review and meta-analysis, Pouplard et al. reported an increased risk of non-melanoma skin cancer in psoriasis, with a standardized incidence ratio of 5.3 for SCC, although much of this

excess risk was linked to prior photochemotherapy.(19) Stern et al. showed that exposure to more than 350 PUVA treatments markedly increased SCC risk,(20) and Wang et al. later confirmed in an updated meta-analysis that psoriasis was significantly associated with non-melanoma skin cancer, particularly SCC rather than basal cell carcinoma.(21) These data do not imply that every psoriatic horn is malignant, but they reinforce the principle that a longstanding inflammatory plaque should not be assumed to be the sole pathology when a new exophytic keratotic growth appears on it. From a management perspective, removal of the entire lesion including its base remains the most defensible approach when a cutaneous horn is encountered. Fernandes et al. stressed that the main objective of treatment is not simply cosmetic removal of the keratin cone but histopathological evaluation of the lesion at its base, which determines prognosis and further management.(5) In the present case, complete excision provided both diagnosis and treatment, and the uneventful postoperative course supported the benign nature of the lesion. Continued follow-up was nevertheless appropriate because persistent psoriasis on the feet and ankles can remain hyperkeratotic, may be subject to recurrent frictional trauma, and could theoretically predispose to renewed horn formation or obscure interval epithelial atypia if a new lesion develops in the future.

**Conclusion**

This case highlights a rare presentation of cutaneous horn arising over a chronic plaque of psoriasis on the ankle. Although the underlying lesion was benign and histopathology confirmed psoriatic changes without dysplasia or malignancy, the case underscores that every cutaneous horn warrants complete excision and histopathological evaluation because the nature of the lesion can only be determined at its base. Careful clinicodermoscopic assessment, prompt surgical removal, and pathological confirmation remain essential for accurate diagnosis and appropriate management in such unusual presentations.

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