

Case Report

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Cutaneous horn in a sun-protected site harbouring unusual malignancy

Ashwath Narayan Ramji*

Department of Surgery, Kempegowda Institute of Medical Sciences, Bangalore, Karnataka, India

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***Correspondence:**

Dr. Ashwath Narayan Ramji,
E-mail: drashwathramji@gmail.com

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ABSTRACT

Cutaneous horns are conical, circumscribed projections formed by desquamation and layering of keratin. Although they can appear on the skin anywhere on the body, they are most commonly seen on the sun-exposed surfaces, and are often associated with solar keratosis. Cutaneous horns are most often benign, however they are a potential site of malignancy and may harbor premalignant or malignant lesions, the most common being squamous cell carcinoma, the causal relationship being straightforward and both squamous cell carcinoma and cutaneous horns can be equated with the common epithelial marker keratin. Other histological types of malignancies are not usually noted in conjunction with cutaneous horns. Here we describe a patient with a cutaneous horn over the volar aspect of the right forearm, a sun-protected site, harboring basal cell carcinoma, an infrequent finding.

Keywords: Cutaneous horns, Hidden malignancy, Basal cell carcinoma

INTRODUCTION

Cutaneous horns ("cornu cutaneum") are uncommon lesions of the skin, resembling the horns of other mammals. These lesions can occur all over the body, with a preponderance for sun-exposed surfaces, most commonly the face and scalp.¹ They are uncommon, having a frequency of around 1% and are structurally hyperkeratotic lesions.^{2,3} They mostly attributed to benign lesions, however up to 15% of cutaneous horns are thought to harbor hidden malignancies.¹ Squamous cell carcinoma is the most commonly encountered malignancy in conjunction with cutaneous horns, and the direct relationship between two is most easily demonstrated by association of both conditions with keratin.¹ Usually asymptomatic and only a cosmetic defect, cutaneous horns are often ignored for long periods, allowing malignant transformation to occur unhindered. It is thus imperative that these structures are investigated even when not symptomatic, so that early intervention can be undertaken when necessary.

CASE REPORT

A 60 year old male patient, farmer by occupation, presented with an asymptomatic, solitary lesion over the right forearm. The lesion had been present for several years, gradually increasing in size, and was not associated with any pain or discomfort. There was no history of any trauma, ulceration or bleeding prior to or after onset of the lesion. He did not suffer from any comorbidities.

Clinical examination revealed a solitary, sessile, exophytic, hard, well-circumscribed, non-tender, gray-black keratinised lesion arising from the volar aspect of the right forearm, about 10 cm proximal to the wrist (Figure 1). General examination was normal, and no loco-regional lymph node enlargement was found.

A complete excision with 1.5 cm margins was done, with the defect being closed by simple advancement. Histopathological examination of the specimen revealed diffuse hyperkeratosis and parakeratosis, which is characteristic of cutaneous horn. Additionally, the base of

the horn showed malignant proliferation with islands of large lightly eosinophilic cells containing elongated nuclei, with palisading pattern at the peripheries, and prominent separation artifacts. A diagnosis of cutaneous horn with well-differentiated basal cell carcinoma was made. Further investigation revealed no metastatic lesions, and no recurrence has been observed after 1 year of follow-up.



Figure 1: Cutaneous horn over volar aspect of forearm.

DISCUSSION

Cutaneous horns are conical, circumscribed protuberances, which are formed by the laying down of densely adherent keratin.¹ Owing to their nature, they originate from basal keratinocytes.¹ They are an uncommon occurrence, with a frequency of 0.3-1.3% noted in the largest published study of cutaneous horns.² Cutaneous horn was defined by Bart *et al* as a hyperkeratotic lesion in which height corresponds to at least half of the diameter of its base.³

These structures are often small, measuring just a few millimeters in size, or may be as large as several centimeters long. Described in *A Short Practice of Surgery* by Bailey and Love, the "widow Dimanche" had a horn that sprouted from her forehead that grew to a remarkable 9.8 inches long.⁴ They are generally conical projections, but may vary in shape including cylindrical, transversely or longitudinally corrugated, or even curved like a ram's horn.⁵

Although grossly similar, cutaneous horns in humans lack the axially positioned bone seen in animal horns.⁶ Found on chronically sun-damaged skin, the face and scalp makeup the location of 30% of all cutaneous horns, and fair-skin and older age appear to be risk factors for their development.^{1,7}

Malignant lesions are more common in men, and unlike benign cutaneous horns, those arising from malignancies are more likely to be associated with pain and surrounding skin changes.^{8,9} Other risk factors for malignancy include location on sun-exposed surfaces, large height-to-base ratios, and advanced age.²

The pathogenesis is not clear, however they generally arise in the setting of actinic keratosis, which is a known precursor of squamous cell carcinoma.^{1,10,11} Layering of cornified debris is the mechanical process involved, and hyperproliferation and increased cohesiveness of keratin is noted.^{1,12} However, the important issue is not the horn itself which is simply dead keratin, but rather the underlying condition, which may be an insidious malignancy.⁸

Making a clinical diagnosis of the pathology at the base of the horn is usually difficult due to the obstructive nature of the horn and lack of other finding.¹³ Therefore, to obtain an appropriate histopathological diagnosis, this lesion should undergo biopsy at the base of the horn, and for smaller lesions excision is advocated.⁸ The underlying lesion may be benign (seborrheic keratosis, lichen simplex, pyogenic granuloma, benign nevus etc.), premalignant (actinic keratosis, leukoplakia, keratocanthoma etc.) or malignant (squamous cell carcinoma, basal cell carcinoma, melanoma, Bowen's disease, Kaposi sarcoma etc.).¹³ Malignancy in penile cutaneous horn has also been reported.¹⁴

Most reports mention squamous cell carcinomas to be the malignant entity when found, whereas basal cell carcinoma, as was found in our case, is a very unusual occurrence with cutaneous horns.^{15,16}

Deep biopsy or total surgical excision is the favored line of management, with care taken to ensure that the base of the horn is available for histological study. In large lesions, frozen section should be considered. If biopsy yields malignancy, evaluation of loco-regional lymph nodes must be done to rule out metastatic spread of the tumor.¹

CONCLUSION

Though they may seem like innocent lesions, cutaneous horns are a potential and hidden site for premalignant and malignant lesions, solar keratosis and squamous cell carcinomas are the most common respectively. However, infrequently, other malignancies such as melanomas and basal cell carcinomas may also be found. Hence, even though they may be asymptomatic, it is imperative that these lesions are thoroughly investigated so that any hidden malignancy is identified and managed before further complications may develop.

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