

## Actinic Keratosis Masquerading as a Cutaneous Horn

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### Abstract

*Cutaneous horns are usually found on skin surfaces exposed to high levels of sunlight. It is a rare tumor presenting as a conical, well-circumscribed mass, and is usually composed of dead keratin. Cutaneous horns may originate from a wide spectrum of skin lesions including those that are benign, premalignant, or malignant. We are reporting a rare case of Actinic keratosis presenting as a slow-growing "horn-like" mass over the patient's left ear pinna. Excision biopsy was performed and histopathology confirmed the diagnosis. Cutaneous horn is a rare clinical entity, with a bizarre horn-like growth commonly appearing at sun-exposed areas of the head and neck region. However, such a lesion can also originate from a benign, premalignant, or malignant condition; therefore, excision with histopathological studies is mandatory in all cases.*

**Keywords:** cutaneous horn, sebaceous horn, actinic keratosis

### INTRODUCTION

A cutaneous horn is a hyperkeratotic projection from the skin that resembles an animal horn. It is referred to as "cornu cutaneum" in Latin. Cutaneous horns may originate from a wide spectrum of skin lesions including those that are benign, premalignant, or malignant. A retrospective study of 643 cases of cutaneous horns by Yu et al. in 1991 revealed that cutaneous horns were more common on sun-exposed areas of the body with a high incidence of malignant and premalignant lesions, with squamous cell carcinoma being the most commonly associated malignancy [1]. They usually occur on areas that are exposed to sunlight, including the upper part of the face, scalp, nose, lips, ears, eyelids, forearms, legs, and hands [2]. The final diagnosis is usually confirmed via histopathological examination of the specimen. Wide excision with careful histological examination is the treatment of choice. Here, we report a unique case of a cutaneous horn on the antihelix of the left ear pinna.

### CASE PRESENTATION

A 55-year-old Indian male with no known medical illnesses presented with a complaint of a slow progressing growth on his left ear pinna, which was occasionally painful and itchy but without any episodes of bleeding or discharges. The lesion had appeared one year prior and it occurred spontaneously, unrelated to any event of trauma or insect bites. Results of systemic and general examination were normal. Examination of the left ear revealed a blackish hard curved mass, hard in consistency, arising from the antihelix of the left ear pinna measuring 5 cm in length and 2 cm in width at its base (Figures 1, 2). Findings of otoscopic examination were normal and there was no regional lymphadenopathy noted. The lesion was diagnosed clinically as a cutaneous horn and the patient underwent wide local excision of the mass under local anesthesia. Histologically, the specimen was reported as a 5.0 cm x 2.0 cm x 1.0 cm mass with markedly thickened parakeratosis and hyperkeratosis, suggesting a completely excised

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cutaneous horn with actinic keratosis at the base with well and there was no recurrence of the mass after two months of follow-up. The wound healed



**Fig1.** Cutaneous horn arising from the left ear pinna (lateral view)



**Fig2.** Cutaneous horn arising from the left ear pinna (Anterior view)

### DISCUSSION

A cutaneous horn is a conical hyperkeratotic projection of the skin, often resembling an animal horn. It is known in Latin as “cornu cutaneum”. Although it may grossly resemble the horn of an animal, it differs in histology, lacking the centrally placed bone [3]. This lesion can present in various shapes and sizes, mainly ranging from 2–60 mm [4]. The horn itself may be disfiguring, especially to females. However, its gross appearance is not as important as what may lie underneath it. Cutaneous horns may arise from a wide spectrum of skin lesions including those that are benign, premalignant, or malignant. Benign lesions can be a result of seborrheic keratosis, verrucous epidermal naevus, histiocytoma, or viral warts. Premalignant lesions include those due to Bowen’s disease or actinic keratosis, and malignant lesions can present as squamous cell carcinoma, Kaposi’s sarcoma, or basal cell carcinoma [2].

A retrospective study of 643 cases of cutaneous horn by Yu et al. in 1991 revealed that 38.9 % were derived from malignant or premalignant epidermal lesions, and 61.1% from benign lesions [1]. Another recent large study of cutaneous horns conducted by Mentese et al. reported 41.44% of the lesions as benign and 58.56% as pre-malignant or malignant. Within the group of pre-malignant lesions, actinic keratosis was found in 83.84% of the cases; within the group of malignant lesions, squamous cell carcinoma was found in 93.75% of the cases [5]. Sun exposure is an important etiological factor in pathogenesis of the *cornu cutaneum* [3]. It usually occurs on areas exposed to sunlight, including the upper part of the face, scalp, nose, lips, ears, and eyelids [2].

The underlying pathology at the base of the lesion is usually more important than the overlying horn. Therefore, surgical excision remains the standard of treatment [3]. A full thickness wide local excision with an adequate margin should be performed and a specimen sent for histopathological assessment [2,4]. Lesion tenderness and larger lesion size may indicate underlying malignancy [3]. The high association of premalignant and malignant conditions requires the specimen to be sent for a detailed histopathological study, because the base of the horn will display the true features of the pathologic process that is responsible for the development of the horn, which in our case was actinic keratosis, a premalignant condition [3,5].

Other non-invasive treatment options include electrocautery, cryotherapy, carbon dioxide, and laser ablation [6]. These are likely to be used only in cases with low malignancy risk. Due to the high association with premalignant and malignant conditions, such patients should be followed-up regularly for surveillance of recurrence. Such lesions, which are more commonly seen in the sun-exposed areas, may be preventable using topical sunscreen application [5]. Recurrence rates are not well-documented in the literature but these lesions usually respond well to surgical excision [2,4].

Actinic keratosis is a premalignant condition of abnormal proliferation of intraepidermal keratinocytes primarily found in fair-skinned individuals and is a result of prolonged exposure to exogenous factors such as ultraviolet radiation on sun-exposed areas of the skin [7]. The lesion can regress, progress, or persist, and has the potential to transform into squamous cell carcinoma [8]. As with human cutaneous squamous cell carcinoma, a p53 chromosomal mutation has also been found in actinic keratosis, and the rate of conversion from actinic keratosis to squamous cell carcinoma has been estimated to vary from 1.25 % to 20 % per year for an individual lesion [9].

They vary in size, but most range from 1–2 mm papules to large plaques. They may present as flesh-colored, erythematous, or more deeply pigmented and usually have a hyperkeratotic surface [9].

Clinically, actinic keratosis may not always be distinguishable from squamous cell carcinoma, and as such, a biopsy is the only way to differentiate a malignant lesion. However, a long-standing skin lesion such as a cutaneous horn may alert physicians or surgeons to the possibility of a malignancy [10]. Rowert-huber et al. proposed an actinic keratoses (AK) classification system that describes these lesions as squamous cell carcinomas (SCCs), using the terminology ‘early in situ SCC Type AK I’, ‘early in situ SCC type AK II’, and ‘in situ SCC Type AK III’, thereby providing clinicians better guidance in diagnosis and specific treatment recommendations [11].

Treatment of actinic keratosis includes conventional surgical excision, cryosurgery, and photodynamic therapy. In 2014, randomized clinical trials by Patel et al. showed that photodynamic therapy has a 14 % better likelihood of complete lesion clearance at three months after treatment than cryotherapy for thin AKs on the face and scalp [12]. In terms of prevention, a

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few studies have been done to identify factors that can reduce the development of actinic keratosis; for example, a low-fat diet and regular use of sunscreen was found to not only prevent excessive UV exposure and the development of solar keratosis, but was also found to hasten the remission of existing lesions [13,14].

### CONCLUSION

A cutaneous horn is a rare slow-growing tumor, with a bizarre horn-like growth commonly appearing at sun-exposed area of the head and neck region. However, the lesions can also originate from a benign, premalignant, or malignant condition; therefore, excision with histopathological studies of the base is mandatory in all cases.

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