

Cornu cutaneum in the maxillofacial region – A case report

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ABSTRACT

Aim

Cornu cutaneum are horn-like skin protrusions comprised of dense keratin. They differ from animal horns in a sense that cornu cutaneum do not have a central bone. The lesions may develop in any part of the body, with 30% of the lesions occurring in the head and neck region. Although they are considered benign lesions, they are characteristically associated with pre-malignant or malignant lesions such as squamous cell carcinoma, actinic keratosis, keratoacanthoma, basal cell carcinoma and Kaposi sarcoma. The aim of this clinical case report is to review a case of cornu cutaneum of the face associated with a papillary squamous cell carcinoma in a 72-year-old female.

Materials and methods

We reviewed a case of cornu cutaneum of the left pre-auricular area of the face with a 5-year history.

Results

The lesion was asymptomatic, measured 6cm in length and was resected under general anaesthetic with wide margins. The histopathological examination showed papillary a squamous cell carcinoma at the base of the lesion. As the lesions are benign and the nearest margin was 9mm, no further adjunct therapy was instituted.

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Author's contribution:

EN Nokaneng	60%	conceived the case report and prepared, reviewed and edited the final manuscript for submission.
SS Nkosi	40%	literature review and drafting of the manuscript. All authors read and approved the final manuscript

Conflict of interest

The authors declare that there is no conflict of interests regarding the publication of this paper.

Conclusion

Although considered a benign lesion, cornu cutaneum is invariably associated with malignant lesions such as squamous cell carcinoma. Similarly, our case was associated with a papillary squamous cell carcinoma at the base of the lesion. As per current standards, the lesion was resected with wide margins.

Keywords

- Cornu cutaneum
- Maxillofacial region
- Benign
- Premalignant
- Malignant
- Surgical excision

INTRODUCTION

Cornu cutaneum (cutaneous cornu) are horn-like skin protrusions formed by dense keratin.^{1,2,3} A distinctive feature that distinguishes cornu cutaneum from an animal horn is the lack of central bone found with the animal horn.¹ The lesions may develop in any part of the body, with a 30-35% and 31% occurring in the head and neck and upper limbs respectively.^{1,4,5}

Yu *et al.*, suggested that cornu cutaneum is not a pathological diagnosis as it is derived from an underlying benign, premalignant or malignant lesion.¹ Indeed, the observation was supported from large case series reports that found that the lesions are associated with benign and malignant lesions such as squamous cell carcinoma, viral warts, actinic keratosis, keratoacanthoma, Bowen's disease, seborrheic keratosis, basal cell carcinoma and Kaposi sarcoma.^{4,6}

The pathogenesis of the cornu cutaneum is not known.⁷ However, cornu cutaneum is associated with sites susceptible to actinic injury such as a face⁴ thus actinic keratosis, molluscum contagiosum, arsenic keratosis, squamous cell carcinoma, basal cell carcinoma as well as previous skin malignancy are considered risk factors.^{2,6,8}

Therefore, the aim of this clinical case report is to review a case of cornu cutaneum of the pre-auricular area of the face associated with papillary squamous cell carcinoma in a 72-year-old female.

Case report

A 72-year old female presented with 5-year history of a pedunculated lesion on the left pre-auricular area of the face. The lesion was generally asymptomatic with a few exceptional occasions when the lesion caught onto her clothes. No history of trauma or previous malignancy was elicited. She had a well-controlled hypertension with no previous surgical history.



Figure 1. Cornu cutaneum on the left pre-auricular area.

Clinical examination revealed a solid, exophytic and non-tender horn-like lesion; grey- white- black in appearance with brown vertical striae. The colour and texture skin at the base of the lesion was similar to the peripheral skin. Furthermore, the lesion was 6cm in length (Figure 1). There was no regional lymphadenopathy. An ultrasound and radiographic examination did not reveal any abnormalities associated with the lesion (Figure 2). Interestingly, the ultrasound showed that the base of the lesion was avascular. Based on the clinical and radiographic features a provisional diagnosis of a cornu cutaneum was made. The pre-operative investigations included full blood count, urea and electrolytes and the findings were unremarkable.

The lesion was excised under general anaesthesia with 10mm margins and closure of the defect was achieved with a bilateral Z-plasty. There were no peri-operative complications and patient had an uneventful recovery. On her 30-days follow-up, the wounds had healed uneventfully (Figure 3).

Histopathological examination revealed a completely excised cornu cutaneum with papillary squamous cell carcinoma at the base of the lesion. There was also extensive hyperkeratosis and micro-invasion of atypical cells into the underlying dermis (Figure 4). Perineural and lymphovascular invasion were not discernible. As cornu cutaneum are benign lesions and the nearest peripheral and deep resection margins were 9mm and 10mm, no adjunct therapy was instituted.

DISCUSSION

Cornu cutaneum (cutaneous cornu) is a horn-like skin protrusions formed by dense keratin.^{1,2,3} A distinctive feature that distinguishes cornu cutaneum from animal horn is the lack of the central bone found with the animal horn.¹ The lesions are composed of keratin excretions.⁹ The lesions may develop in any part of the body, with a 30-35% and 31% occurring in the head and neck and upper limbs respectively.^{1,4,5} Commonly, cornu cutaneum appears as a solitary lesion. However, the presence of multiple lesions in

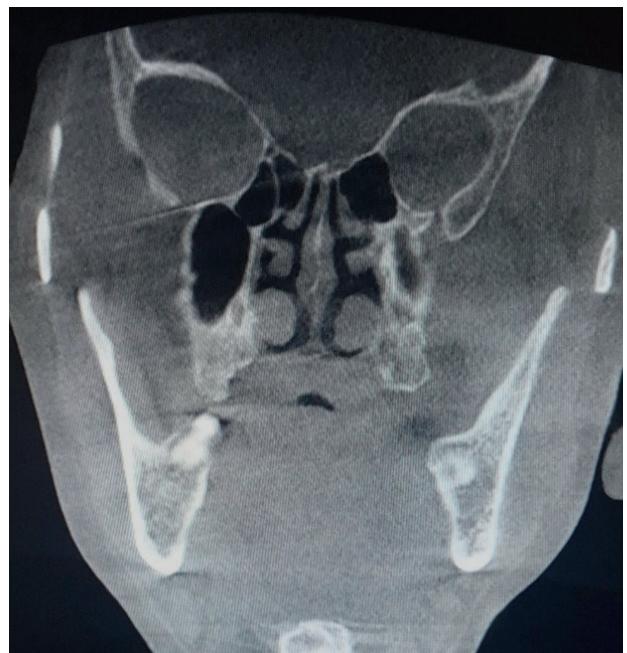


Figure 2. Cone beam computed tomography of the lesion.

an individual have been reported.^{6,10} Similarly, in our case, a solitary cornu cutaneum was found on the left pre-auricular area of the face.

The aetiopathogenesis of the cornu cutaneum is not known.⁷ However, cornu cutaneum are associated with the sites susceptible to actinic injury such as face and upper extremities.^{2,4,6} Furthermore, the association of cornu cutaneum with lesions resulting from actinic injury such as actinic keratosis, molluscum contagiosum, arsenic keratosis, squamous cell carcinoma, basal cell carcinoma suggests that actinic injury may be a predisposing factor.^{2,6,8} This also accords the findings by Copcu et al. who reported sun exposure as risk factor for cornu cutaneum.² Copcu et al. reported in their case series, that all (n=11) patients with cornu cutaneum had solar keratosis on face and extremities associated with a history of long-term sun exposure.² Oludiran and Ekanem also suggested there may be a racial predisposition to cornu cutaneum as the majority of the



Figure 3. Post-operative follow-up (30-days).

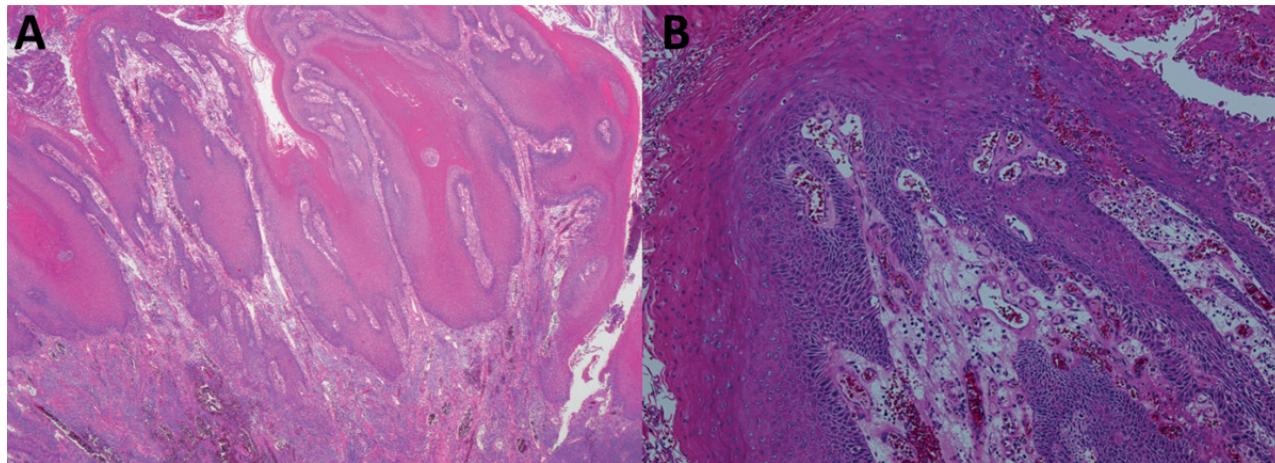


Figure 4 (A and B). Histomicrograph showing the palisaded squamous cell carcinoma with atypical cell invasion of the dermis (H&E stain: x 200 magnification).

reported cases are from Caucasian individuals who are more susceptible to actinic injury.⁵ However, the dearth of data from individuals of African descent may be as result of underreporting. On the other hand, repeated trauma has also been suggested as an aetiological factor.¹¹ In our case, there was evidence of solar elastosis on histological examination suggesting that actinic injury could have been an aetiological factor.

The taxonomy of cornu cutaneum refers to the morphological description of the lesion.^{1,6} However, histologically the lesion may be classified as benign, premalignant or malignant as dictated by the base lesion.⁶ Cornu cutaneum are predominantly benign lesions (61.1%; n=393/643 and n=37/48; 77.1% respectively).^{1,6} On the other hand, Mantese et al. found that 51.4% (n=114) of the lesions were pre-malignant.⁴ As a result, several authors have cautioned that one should have a high index of suspicion in individuals with cornu cutaneum due to the pre-malignant or malignant histological features.^{2,4,5,6,9,10} Therefore, the histological characteristics define the final diagnosis of the lesion.

Several authors have related the duration of the development of cornu cutaneum and the size of its base with the histopathology features. Observations have shown that chronic and wide-base cutaneous cornu have a higher risk of being premalignant or malignant.^{1,4} However, further studies are required to validate the significance of the size of the base lesion to the overall histological features of the lesion.

The diagnosis and management of cornu cutaneum is primarily dictated by the diagnosis of the base lesion.⁶ However, the diagnosis of the base lesions may be challenging due to the heterogeneity of histological presentation.^{6,7,12} Consistent with the literature, we found papillary squamous cell carcinoma at the base of the lesion with micro-invasion of the atypical cells into the underlying dermis as well as evidence of solar keratosis.

Surgical excision with wide margins is the suggested gold standard.^{2,5,6} Mencia-Gutierrez et al. suggested a wide

margin of 3mm of tumour free margins whereas Kumar et al. suggested a 10mm margin.^{6,9} The definitive treatment is dependent on the final histological diagnosis of the lesion.⁷ However, adjuvant therapy is not recommended as recurrence is rare.^{5,6,13} Similarly, our patient did not receive adjuvant therapy and will be closely monitored for potential recurrences.

CONCLUSION

Although considered a benign lesion, cornu cutaneum is invariably associated with malignant lesions such as squamous cell carcinoma and basal cell carcinoma.^{2,4,5,9,10}

Similarly, our case was associated with a papillary squamous cell carcinoma at the base of the lesion. As per current standards, the lesion was resected with wide margins with no adjuvant therapy instituted.

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