

# Cornu Cutaneum - A Study with Special Reference to a Case of Cornu Cutaneum Following an Impacted Foreign Body

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**Abstract:** *Cornu cutaneum is a firm to hard projectile from the surface of skin occurring in any part of the body with an underlying specific pathology like basal cell carcinoma, seborrheic keratosis etc.,. Cornu cutaneum can be compared to another similar entity which occurs in non-keratinizing mucosal squamous epithelium namely leukoplakia. A study of Cornu cutaneum along with presentation of a case with same entity involving the right index finger following the history of a trivial trauma, on histological evaluation exhibited a vegetable matter foreign body embedded in the sub epidermal area is being presented.*

**Keywords:** Cornu cutaneum, index finger, vegetable matter, foreign body

## 1. Introduction

Squamous epithelium can be keratinizing or non-keratinizing. The keratinizing squamous epithelium of the skin, namely epidermis occurs in surface throughout the body. The amount of keratin varies. The skin, which comes in contact with hard surface like soles in foot and palms in hand have excess keratin. However, constant irritation due to an underlying pathology and friction due to hard surface can produce excess keratinization which is called hyperkeratosis. If the same hyperkeratosis is focal and caters to a definition namely a conical, circumscribed lesion with marked hyperkeratosis in which at least half of its largest diameter constitutes keratotic mass is called as Cornu cutaneum. It means a specific pattern of a clinical presentation and need not necessarily indicate the diagnostic underlying pathology. This can be compared to non-keratinizing squamous epithelium which lines the mucosal cavity of various anatomical sites like oral cavity. In these sites, if squamous epithelium starts producing keratin, which appear like white patch called leukoplakia and is again due to definite underlying pathology.

## 2. Observation

The underlying pathology in the cases of Cornu cutaneum varies and as per the literature there can be several types of lesions seen at the base of the hyperkeratosis of a Cornu cutaneum. Actinic keratosis is the most common condition. Others are filiform verruca, seborrheic keratosis, or squamous cell carcinoma. Rarely, a trichilemmoma or a basal cell epithelioma is observed. Others are Molluscum contagiosum, Epidermal nevus, Epidermal cysts, Pilar cysts, Solar keratosis, Inflammatory linear verrucous epidermal

nevus, Discoid lupus erythematosus, Porokeratosis, Granuloma pyogenicum, Bowen's disease, Keratoacanthoma and Basal cell carcinoma. On observing the presence of a vegetable matter foreign body in the sub epidermal region, above which the epidermis showed a Cornu cutaneum, a detailed analysis of the pattern of Cornu cutaneum specimens received over a period of three years (2015-17) were analyzed in detail.

Total number of specimens received by the Pathology department from the department of Dermatology for histopathological examination at Rajah Muthiah Medical College and Hospital from 2015 to 2017 is 766. Out of those specimens, the clinical diagnosis of Cornu cutaneum was given for 23 specimens. The underlying histological pattern were of different types and are as tabulated below,

- Cornu cutaneum following foreign body- 01
- Achrochordan with Cornu cutaneum- 01
- Verruca Plana with Cornu cutaneum - 03
- Verruca Vulgaris with Cornu cutaneum- 08
- Keratoacanthoma with Cornu cutaneum- 01
- Filiform wart with Cornu cutaneum- 01
- Epidermal cyst with Cornu cutaneum- 01
- Dermatitis papulonigra with Cornu cutaneum- 01
- Cornu cutaneum NOS- 06(no specific underlying pathology could be identified)

## Clinical History of A Case of Cornu Cutaneum Following an Impacted Foreign Body

A 30 year old male who is a farmhand by occupation, came to Dermatology OPD with complaints of a projectile mass in the right index finger following a trivial trauma, namely, a thorn prick. The clinical diagnosis of Cornu cutaneum was

made and the lesion was excised in toto and sent for histopathological examination.

### Clinical Picture



Figure 1

Figure 1: Clinical picture shows firm to hard mass in index finger.

### Description of the Specimen

A single, black, horny very firm to hard projectile mass originating from skin surface was received. The hard mass was measuring 1.5x0.5cm. The specimen was bisected and submitted for histological examination.

### Microscopy

Sections studied reveal skin biopsy which has a polypoidal appearance. There is marked hyperkeratosis with columns of parakeratosis. Deeper to epidermis, there is fibrocollagenous tissue with congested blood vessels and few scanty inflammatory cells. Also present are collections of vegetable matter surrounded by scattered inflammatory cells deeper to the squamous epithelium.

Histological features are consistent with diagnosis of Cornu cutaneum following impaction of foreign body.

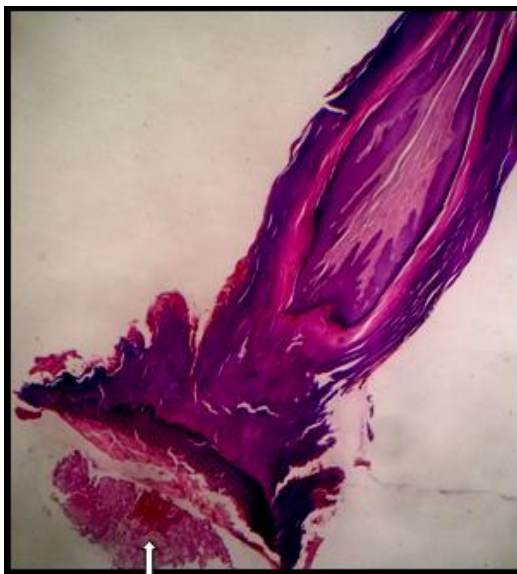


Figure 2

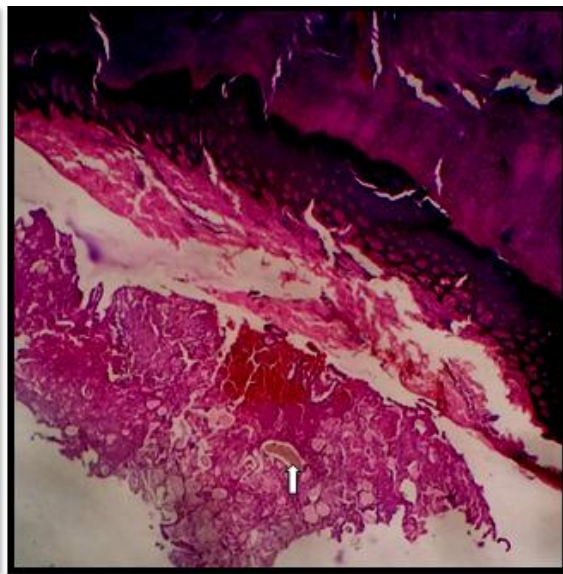


Figure 3

Figure 2, 3: Cornu cutaneum deeper to which, collections of vegetable matter surrounded by inflammatory cells are seen.

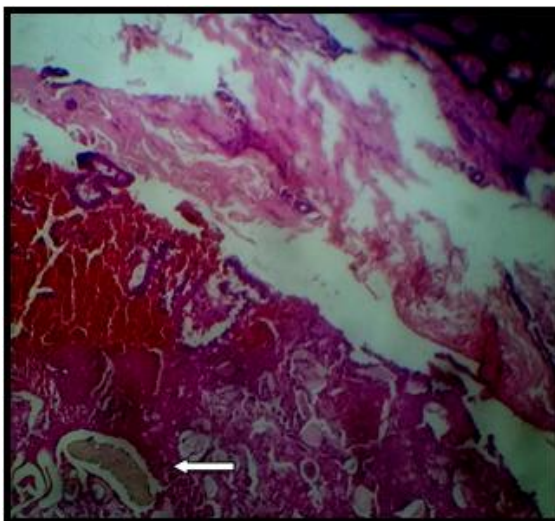


Figure 4

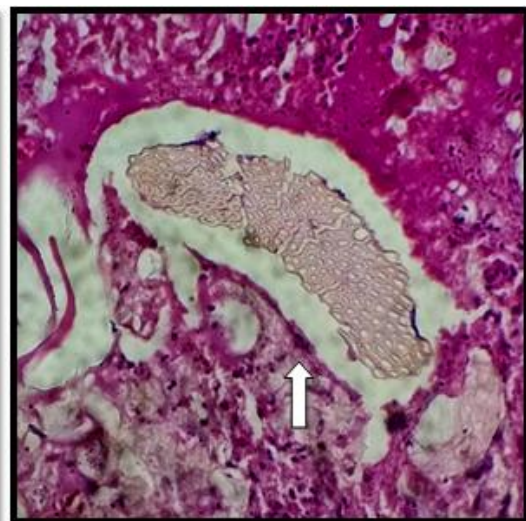


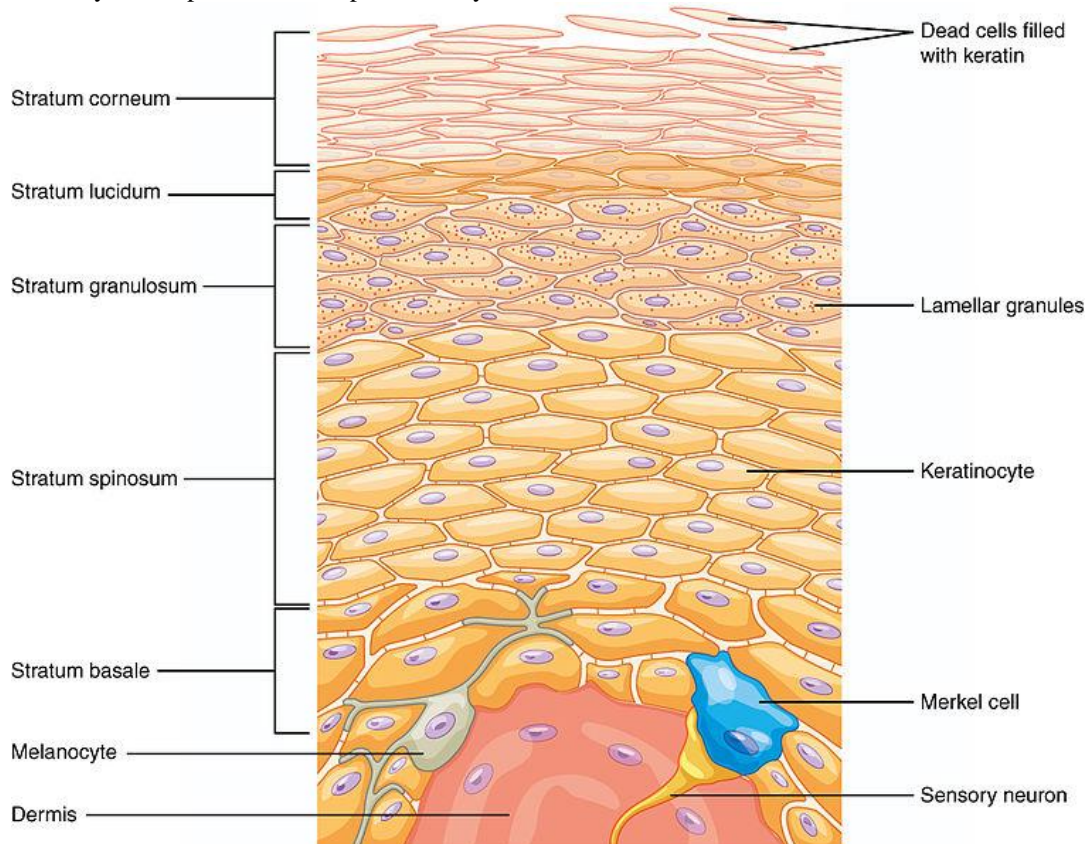
Figure 5

Figure 4, 5: Collections of vegetable matter surrounded by inflammatory cells located in the sub-epithelial zone.

### 3. Discussion

Epidermal biology indicates normal representation of 4 broad and flat epidermal keratinized cells against 100 basal layer columnar cells. Life span of keratinocyte is 40 to 56 days. This is made possible by infrequent mitoses [0.1 to 1 per 1000] in basal layer to replace surface epidermal layers.

This process can be sped up [mitotic index is 50 per 1000] in conditions such as erosion, chronic irritation, accidental trauma, B-Raf inhibitor drugs or scaly disorders such as Psoriasis, Lichen planus, Seborrheic keratosis, chronic eczema, Keratosis pilaris, fungal infections, which leads to hyperkeratosis.



(Picture downloaded from internet)

**Foreign body as underlying etiology for Cornu cutaneum has not been mentioned in the literature so far**

### 4. Conclusion

The interesting aspect of the clinical condition called Cornu cutaneum is to unravel the mystery behind the cause namely the real pathological entity that causes the condition. Most often the cause can be identified if biopsy material includes the deeper structures. Again as compared to leukoplakia, Cornu cutaneum is essentially a clinical term which has to be biopsied always to identify the cause which often may be due to a keratinizing carcinoma.

Out of the 3 years study in Rajah Muthiah medical college hospital among DVL specimens, Cornu cutaneum following foreign body has been reported only once and that too being a very rare entity. Cornu cutaneum being a clinical diagnosis, it is the duty of the pathologist to identify the underlying etiology. Herewith, a male case of age 30 years, a manual labourer was presented with a vegetable matter foreign body induced Cornu Cutaneum.

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