

ORIGINAL RESEARCH

Case analysis of myrmecia wart manifestation on the ring finger

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ABSTRACT

Myrmecia, a specific type of deep palmar or plantar wart, is a clinical entity primarily caused by human papillomavirus type 1 (HPV1). These warts are characterized by their occurrence mostly in the deep layers of the epidermis and predominantly affect pressure points on the palms and soles. This report highlights a case of a palmoplantar wart, also known as a 'Myrmecia wart,' due to its unique clinical and histopathologic findings. Presenting in a 12-year-old male with a warty growth on the ring finger, this condition was initially misdiagnosed. Subsequent examination and biopsy revealed the characteristic histopathological features of Myrmecia, including deep epithelial invagination, prominent keratohyalin inclusions that appear basophilic, and large eosinophilic inclusion bodies indicative of HPV1 infection. These small, papular-to-plaque-like lesions grow rapidly and require careful differentiation from Verruca vulgaris and Molluscum contagiosum on microscopy. This case contributes to the limited literature on atypical presentations of Myrmecia warts and underscores the importance of recognizing this diagnosis in unusual locations, enhancing awareness among clinicians.

Keywords: Myrmecia Wart, Digital Warts, Ring Finger Dermatology, Viral Skin Infections

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INTRODUCTION

The human papillomavirus (HPV) is a common virus that can cause many skin and mucous diseases. Warts are one of the most common ones. These warts are caused by the double-stranded DNA virus HPV. They can show up anywhere on the body and have a rough feel, often looking like cauliflower-shaped bumps. [1] Out of all the different kinds of warts, Myrmecia warts are especially hard to treat because of how they look and where they are located. Also known as deep palmar or plantar warts, myrmecia are specifically associated with HPV type 1 (HPV1) and are distinguished by their occurrence deep within the epidermis, typically affecting high-pressure areas on the palms and soles. [2]

Cutaneous warts are a widespread skin infection with diverse manifestations. The palmoplantar warts, a subgroup of cutaneous warts, primarily involve the palms and soles and can be categorized into superficial and deep types. Deep palmoplantar warts, often referred to as Myrmecia, are usually solitary or sporadically numerous but do not merge. They have a discoid shape and hyperkeratotic papules with a granular keratotic surface flecked with blackish particles from thrombosed capillaries. This shows

how deeply they are rooted and gives them clear clinical features. [3] [4] This intricate relationship between HPV infection and the specific type of warts underlines the importance of accurate diagnosis and targeted treatment approaches for managing this dermatological challenge effectively.

CASE REPORT

The aim of this case study is to highlight one such case where a young 12-year-old male presented with skin OPD with a corn growth in the ring finger of his right hand for 3 months. Past history and family history were not specific. Laboratory tests, including the CBC, liver function test, and urine analysis were within the normal limit or negative. The growth was excised and sent into 10% formalin for histopathology.

Grossly, the specimen consisted of a greyish white irregular soft-tissue piece measuring 0.6×0.4 cm. The hematoxylin and eosin-stained sections show inward growth of thickened keratinocytes, cytoplasmic basophilic inclusions, and ground glass nuclei (Fig. 1). The characteristic histologic findings and typical viral intranuclear inclusions confirm the diagnosis. Even though myrmecia warts appear different

internally, it's important to distinguish them from molluscum contagiosum and the common superficial types of warts found on the palms (known as *Verruca vulgaris*). This distinction is based on their appearance and characteristics.

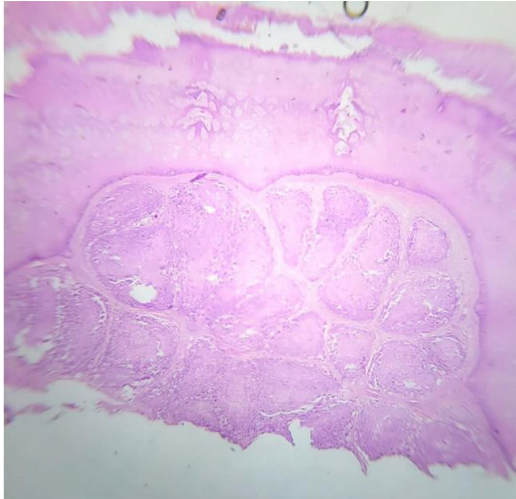


Fig 1:Palmar Myrmecia wart showing inward growth of thickend keratinocyte – H&E ×100. H&E, hematoxylin and eosin.

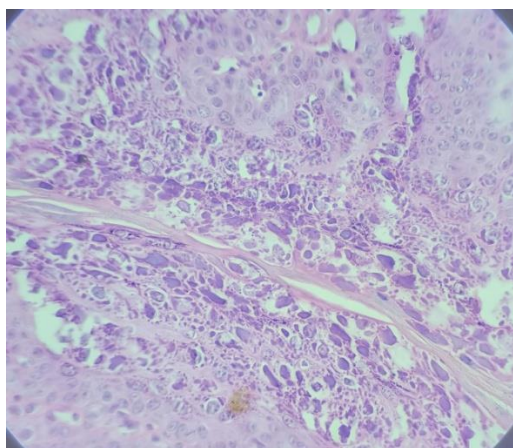


Fig 2: Typical intracytoplasmic eosinophilic inclusions of varying sizes and intranuclear viral-inclusion bodies, H&E ×400. H&E, hematoxylin and eosin.

DISCUSSION

Myrmecia warts, characterized by their deep penetration within the epidermis and specific association with HPV type 1 (HPV1), present distinct clinical and histopathological challenges. These warts are relatively rare compared to their superficial mosaic-type counterpart, *Verruca vulgaris*, and are not confined to the palms and soles; they also appear on the lateral aspects and tips of fingers and toes^[5]. This discussion aims to dissect the complexities surrounding the diagnosis, management, and implications of Myrmecia warts, shedding light on their unique pathology and the necessity for heightened awareness among clinicians.

Histologically, Myrmecia warts grow inward rather than outward from the surface, associated with hyperkeratosis, parakeratosis, and acanthosis in the epidermis^[6, 7]. These warts are notable for their large eosinophilic intracytoplasmic inclusions of varying size, which first appear at the level of the second or third suprabasal cell layer and progressively increase in size, eventually pushing the nucleus to the periphery and coalescing to form large, irregularly shaped, homogenous inclusion bodies. Cytopathic effects of the virus are evident in the nuclei of keratinocytes, characterized by a conspicuous basophilic nucleolus and a round eosinophilic inclusion of variable size surrounded by a clear halo consisting of intranuclear viral particles.

The distinctive cytological features of Myrmecia warts necessitate careful differentiation from common superficial palmar warts, mosaic warts, and *Molluscum contagiosum*. Unlike Myrmecias, superficial verrucous warts exhibit exophytic growth with prominent acanthosis, hyperkeratosis, and papillomatosis, and they lack parakeratosis. The inclusion bodies in Myrmecias have sometimes led to confusion with molluscum bodies, which are comprised of numerous viral particles in *Molluscum contagiosum*. The eosinophilic inclusion bodies of Myrmecia disappear from the cells of the upper stratum corneum, whereas molluscum bodies displace the nucleus to the extreme periphery of the cell and become basophilic rather than eosinophilic above the granular layer, breaking through the stratum corneum^[4].

TREATMENT CHALLENGES

Treatment of Myrmecia warts, characterized by their deep location and thick keratosis, is often challenging. Standard therapies like salicylic acid, cryotherapy, and surgery may be prolonged and less effective. Newer treatments like immunotherapy with imiquimod and intralesional methods show promise by enhancing immune response against the virus^[8]. Techniques such as laser therapy and photodynamic therapy also provide targeted destruction with minimal collateral damage but require specialized equipment and expertise, limiting their widespread use^[9]

CONCLUSION

There are certain structural traits that make myrmecia warts different, like deep epithelial invagination and eosinophilic inclusion bodies, which show that they are caused by HPV type 1.

A correct evaluation is very important for planning treatment.

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