

# Verrucous Cyst In An Immunocompromised Patient

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## Abstract

Verrucous cysts are distinctive cutaneous cysts with a verrucous lining. Like many other squamous cutaneous lesions, verrucous cysts too, are linked to Human Papilloma Virus. Clinically they have been mistaken for epidermoid cysts, dermatofibroma, basal cell carcinoma, and in this case, Kaposi sarcoma. Histologically the lesion is characterized by an intradermal infundibular cyst, lined by papillated epithelium that is marked by prominent hypergranulosis and irregular keratohyaline granules. Often squamous eddies are seen in the epithelium. While the link of verrucous cysts with HPV is well documented, we describe a case of a verrucous cyst that occurred in an HIV positive patient.

## INTRODUCTION

The role of HPV in epithelial proliferations of the skin is well established<sup>1</sup>. Verrucous cysts are rare distinctive cutaneous lesions, which essentially resemble a wart inverted into a cyst. Verrucous cysts were described by Meyer in 1991<sup>2</sup>. The association of HPV with verrucous cysts is strong<sup>3,13</sup>. No atypia or tendency for malignancy is described

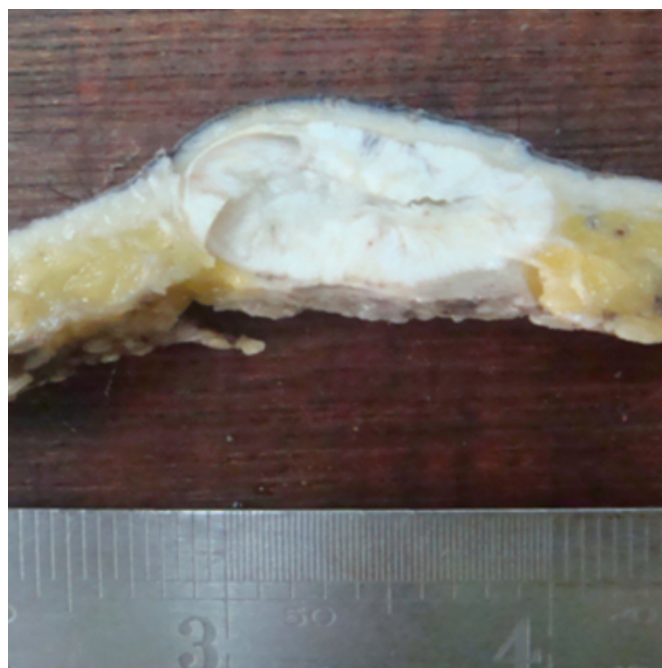
## CASE REPORT

A 43-year-old male, HIV positive for 5 years, developed a blackish discoloration of the right thigh over a period of 4 months. A clinical diagnosis of Kaposi's sarcoma was made. On table the lesion did not seem to be a sarcoma due to its obvious circumscription and so a simple wide excision was performed leaving a clear rim of normal tissue around the well circumscribed lesion.

An elliptical piece of skin, 10x5x.5.5 cm with a blackish circumscribed area of discoloration measuring 4 x4 cm. was received. A well defined cyst wall, 4x3.5 cm was seen expanding the mid dermis and extending till the subcutaneous tissue. The cyst was filled with grey white friable tissue with a central irregular craterlike lumen (fig 1).

## Figure 1

Fig 1: Excision specimen: solid friable tumor with central crater like lumen

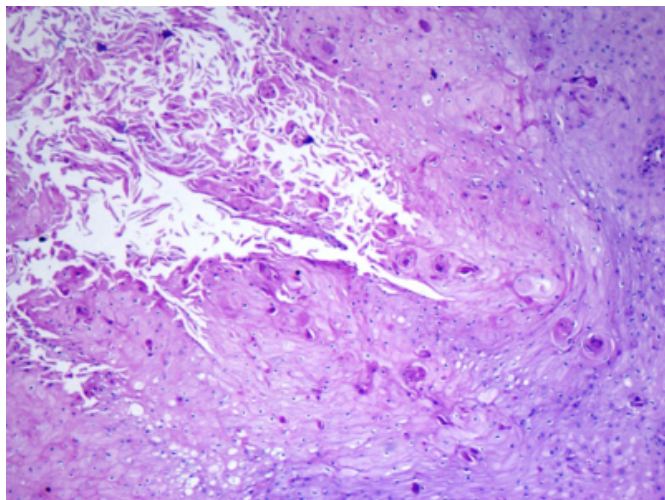


## MICROSCOPY

Skin above the lesion showed areas of hyperkeratosis, along with keratin filled invaginations. The dermis contained a cyst, with a lining of stratified squamous epithelium with hyperkeratosis, acanthosis, papillomatosis, parakeratosis, orthokeratosis, coarse keratohyaline granules, and mounds of keratin material. (Fig 2,3).

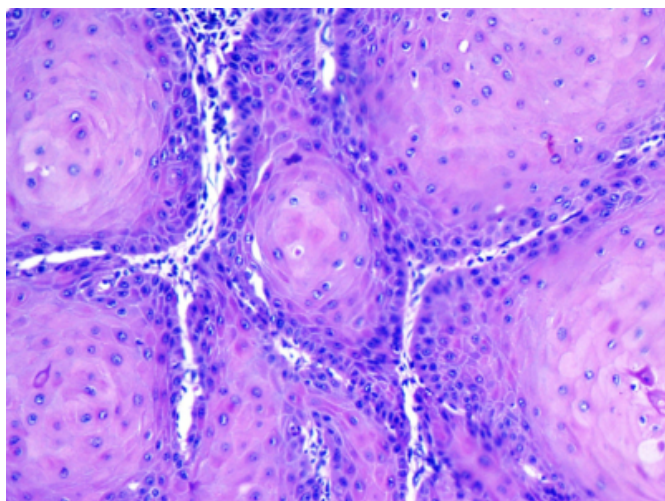
**Figure 2**

Fig 2 Luminal aspect of cyst lining. H&E x100



**Figure 3**

Fig 3 Part of the cyst wall composed of hyperplastic squamous epithelium with eddies H&E x400



Occasional koilocytes were evident. A focal trichilemmal appearance was seen. An infiltrate of lymphocytes, plasma cells, and numerous melanophages was seen at the interface of the cyst with surrounding tissue

### DISCUSSION

A verrucous cyst is a distinctive HPV related epithelial proliferation that resembles a wart inverted into a cyst, with a central crater like cavity. The cyst is lined by stratified squamous epithelium showing papillation, focal hypergranulosis, and ortho or parakeratosis similar to verruca vulgaris. The epithelium which is composed of both squamous and basaloid cells often shows squamous eddies. Foci of hypergranulosis are associated with irregular

keratohyaline granules. Occasional koilocytes may be found. No atypia or mitotic activity is noted.<sup>2,3</sup>

In addition to Inverted follicular keratosis, and verruca vulgaris with squamous eddies,<sup>3</sup> which do not possess a central cavity, other epithelial lined cysts such as epidermoid cysts with seborrheic verruca-like cyst walls, that have walls with changes simulating seborrheic keratosis and verruca,<sup>4</sup> and HPV related follicular cyst might also be considered in the differential diagnosis. This latter consists of a cyst lined by papillary projections with an epidermoid lining. The cyst cavity contains compact keratinous material. Groups of vacuolated keratinocytes with overlying tiers of parakeratotic cells are seen at the top of the crests. The intervening valleys contain clumps of keratohyaline granules.<sup>5</sup> Syringocystadenoma papilliferum has been documented to occur in proximity to this lesion.<sup>6</sup>

In most cases PCR<sup>3</sup>, which was not performed in this case, can identify the HPV genome. Most commonly HPV type 59 is identified in verrucous cysts.<sup>7</sup> The usefulness of immunohistochemical techniques in the identification of HPV remains doubtful, since relatively large mounts of viral antigen are required for demonstration.<sup>37</sup> In our case immunohistochemical analysis for HPV was negative.

Due to decreased immune surveillance, HIV patients are at increased risk for viral infections and viral-induced dysplasia/malignancy. Accordingly, it is no surprise that these patients should be susceptible to HPV-induced verrucous cysts, but this case appears to be the first documented case of a verrucous cyst occurring in a patient with HIV infection. In conclusion, HPV-related verrucous cysts should be considered as one of the many cutaneous lesions that can occur in the setting of immunocompromise and HIV disease.

### References

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