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Case Report

CT imaging of condyloma acuminata ☆,☆☆

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ABSTRACT

This case report shows the use of computed tomography (CT) imaging in evaluating a 53-year-old male patient presenting with anogenital wart like lesions. The patient was suspected of having condyloma acuminata. The significant extent of condyloma acuminata, as seen in this case, is a relatively uncommon finding. CT was ordered to help assess for local invasion and malignancy. This report also discusses Buschke-Lowenstein tumors, the rare malignant transformation of giant condyloma acuminata in the anogenital region. Invasion and malignancy in condyloma acuminata must be evaluated as they can have a poor and even fatal prognosis. Histological examination confirmed the diagnosis of condyloma acuminata and CT ruled out regional invasion, and metastatic disease. Additionally, the role of imaging in planning surgical excision is discussed. This case highlights the value of CT in the clinical diagnosis and management of condyloma acuminata.

Introduction

Condyloma acuminata are warts that most commonly occur in the anogenital region. These warts are linked to the Human papillomavirus (HPV). HPV is a nonenveloped, double-stranded, circular DNA virus. There is significant variation in the number and size of lesions seen in patients. Condyloma acuminata lesions can slowly grow over time. In this condition, there is a concern for Buschke-Lowenstein tumor, the malignant transformation of giant condyloma acuminata. This case report describes a patient who was diagnosed with condyloma acuminata. CT was used to help look for invasion of regional tissues, pelvic structures, possible metastasis, and guide surgical removal.

Case report

A 53-year-old male with a past medical history of smoking presented with worsening warts for about 5 years. The skin-colored and cauliflower like warts were noted bilaterally on the buttocks, perianal region, and around the genitalia (Fig. 1A). The lesions had increased in size over time. The patient had also been experiencing occasional pain, itching,

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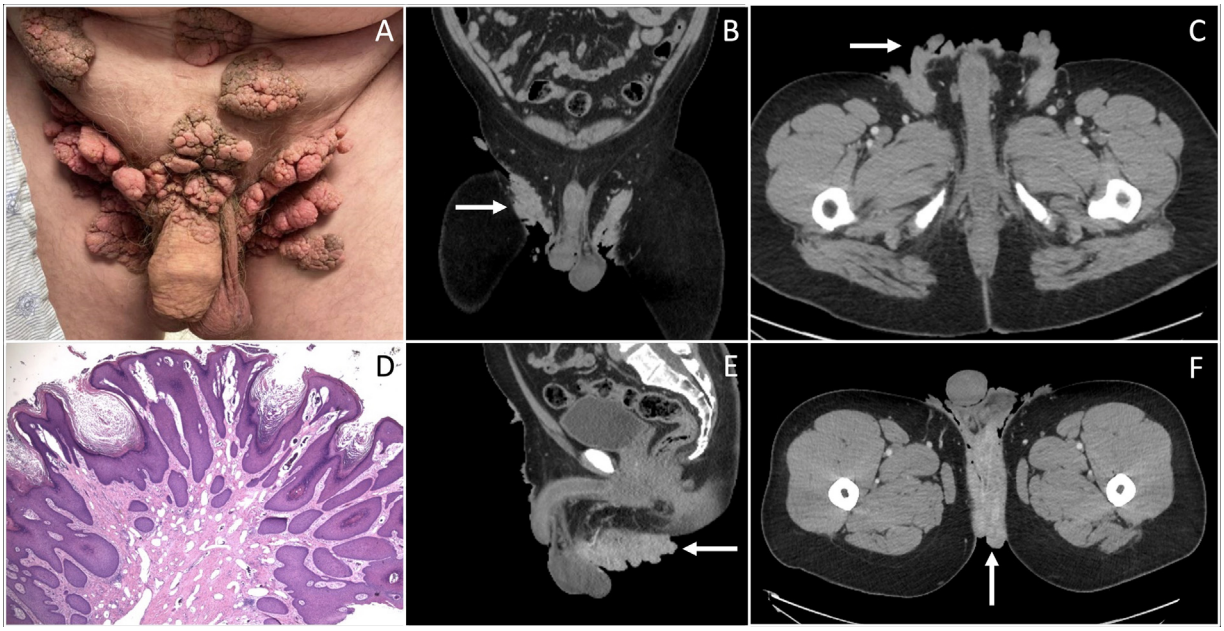

Fig. 1 – (A) Shows the patient photograph of several large wart-like cutaneous lesions in the lower anterior abdominal wall, inguinal skin folds, and around the genitalia. (B and C) Coronal and axial images from the contrast enhanced CT showing multiple enhancing exophytic cutaneous masses involving bilateral inguinal regions (white arrows). Perineal lesions and sparing of the anal canal are shown in sagittal and axial images (E &F respectively). No deep tissue extension or invasion is noted. (D) Histology image showing marked hyperkeratosis, acanthosis, and papillomatosis with columns of parakeratosis and koilocytes. These findings are consistent with HPV changes of condyloma acuminata.

and purulent discharge. Furthermore, the patient described reduced quality of life and a desire for prompt treatment. CT was ordered due to concern for local extension and potential malignancy because of the long-standing presence, large size, and the substantial number of lesions.

CT imaging of the abdomen and pelvis with contrast showed enhancing exophytic cutaneous masses extending from the lower anterior abdominal wall, bilateral inguinal regions, and into the perineum (Figs. 1B, C, E, and F), along with bilateral inguinal lymphadenopathy. The penis, scrotum, and anal canal were spared. The bladder and prostate were within normal limits. A biopsy was performed, which confirmed condyloma acuminata, and consistent with an HPV infection. Histopathology showed hyperkeratosis, acanthosis, and papillomatosis with columns of parakeratosis and koilocytes consistent with HPV changes (Fig. 1D). Koilocytes are epidermis cells with large cytoplasm, small nuclei, and clear vacuolization [1], a marker of HPV infection. The patient tested negative for syphilis, human immunodeficiency virus (HIV), hepatitis B, hepatitis C, and chlamydia. The patient was recommended for surgical excision by colorectal and plastic surgery.

Discussion

Condyloma acuminata are anogenital lesions that are most often a manifestation of long-standing HPV infection. These soft and flesh-like lesions are occasionally associated with other infections, such as HIV and chlamydia. Although there are many strains of HPV, the most common HPV strains associated with condyloma acuminata are 6 and 11 [1]. These HPV strains lead to the loss of the tumor suppressor protein p53, which controls cell cycle progression from the G1 to the S phase. This loss of p53 allows for rapid uncontrolled epithelial cell growth. The epithelial cell growth leads to thickening of the skin's epidermis layer, which causes visible wart formation on the skin [2,3]. Based on their appearance, these lesions can have various classifications, such as broad, flat, pedicled, or cauliflower. They also can vary in color, such as skin-like, red, or hyperpigmented [1]. The incidence of condyloma acuminata is a median of about 195 per 100,000 individuals [4]. It most commonly infects people aged 20-39 years of age [2].

Patients may be asymptomatic or experience symptoms such as bleeding, pain, discharge, infection, and itching [1]. Along with physical discomfort, patients can have a reduced quality of life, anxiety, sexual dysfunction, and significant health concerns [1]. Possible complications include difficulty passing stool, fistulas, ulceration, abscess formation, and urinary obstruction [1]. In severe cases, condyloma acuminata can become invasive and lead to malignancy [1,2]. First described in 1925, by Buschke and Lowenstein, this is squamous cell carcinoma that develops in patients with giant condyloma acuminata, in the anogenital region [2]. Buschke-Lowenstein tumors are typically 10 cm or more in size and locally invasive [5,6]. Malignant transformation of condyloma acuminata is most likely in immunocompromised patients, but other potential risk factors include smoking, history of STDs, previous

malignancies, and exposure to radiation [1,2,6]. In our case, the patient happened to have a history of smoking. Malignant transformation has a poor prognosis due to high risk for recurrence, progressive local invasion, and high mortality (up to 21%) [7].

CT plays a vital role in patients with high risk for invasive disease and malignant transformation. When evaluating CT imaging of these lesions, attention should be made to the extent of local infiltration, and invasion into the subcutaneous tissue, muscle, pelvic cavity, genitalia, rectum, and perineum. CT can also show significant vascularization of the lesions [8–10]. Although CT can assist in identifying invasion and malignancy, histological examination is the only way to confirm a malignant transformation. Inguinal lymphadenopathy may be noted, but this does not always indicate an underlying malignancy. Metastasis is typically not seen. Magnetic resonance (MR) imaging could also be used in evaluating condyloma acuminata, for more soft tissue detail and surgical planning. Furthermore, imaging could also play a role during follow-up to evaluate for recurrence. However, there are no established guidelines regarding when further imaging is recommended.

Surgical excision is recommended for extensive disease, as seen in our patient. Surgery can also be used to prevent potential malignant transformation. Other treatment options include cryotherapy using liquid nitrogen and topical therapies. Surgical removal, however, has been shown to have the lowest rate of recurrence. A combination of treatments can also be used. Patients should be counseled on the risk of recurrence, as it happens in up to 30% of cases even after treatment [1]. Complete resection is often difficult and patients can still end up with tissue defects after surgery [11]. A discussion should also be had about safe sex practices due to the infectious nature and high viral load of these warts. Early diagnosis and treatment improves patient outcome and prognosis. Prevention of condyloma acuminata and related complications is possible with appropriate HPV vaccination for males and females. Male circumcision has also been shown to reduce the risk of HPV infection. Many conditions can present with cutaneous warts and similar symptoms, making diagnosis difficult at times for clinicians. Among the differential diagnoses included are condyloma acuminata, Buschke-Lowenstein tumor, condyloma lata, molluscum contagiosum, lymphangiomas, and squamous cell carcinoma of the anus [1,2].

Conclusion

Condyloma acuminata are often caused by an HPV infection that can lead to local invasion and rarely undergo malignant transformation. Due to this concern, CT imaging of the abdomen and pelvis can be used together with histopathology examination. Additionally, CT is essential for surgical planning to understand regional involvement. Treating condyloma acuminata requires a multidisciplinary team, with the radiologist being an equally important member. In conclusion, this case report reflects the importance of CT evaluation for accurate diagnosis and effective treatment outcomes.

Authorship

The authors declare that this is their original work and they all approve the content of this manuscript. They confirm that this manuscript has not been published previously, in any language, in whole or in part, and is not currently under consideration elsewhere.

Ethical clearance

This project did not involve any research and no ethical clearance was required.

Patient consent

A written informed consent was obtained from the patient for the publication of this case report.

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