Condyloma Acuminata In Female Young Adult: A Case Report

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Article Info
Article History
Received: 2025-01-10
Revised: 2025-02-20
Published: 2025-03-09

Keywords:
Condyloma Acuminata;
Young Adults;
Human Papillomavirus;
Risk Factors.

Abstract
Condyloma acuminata (CA) is caused by human papillomavirus (HPV), predominantly low-risk types 6 and 11, which account for 90% of genital warts. The World Health Organization (WHO) 2023 estimates that 1% of sexually active adults worldwide have clinical CA, with higher rates among young adults aged 20–29. Factors like early sexual activity, multiple sexual partners, and unprotected sex increase susceptibility. Immunocompromised individuals are more likely to have persistent infections. A 2021 study in Jakarta found that 78% of CA patients delayed seeking care due to shame, with women and LGBTQ+ individuals most affected. This case underscores the complexity of managing condyloma acuminata, particularly in young, sexually active individuals. We presented a 22-year-old woman with a history of sexual relations with a lover whose history of sexually transmitted infections is unknown and not using protection such as condom. Comes with complaints of warts on the genitals since the last week. Complaints are accompanied by itching and pain around the genital warts. Venereology status reported lesions were found in the form of multiple verrucous papules with a base of erythematous macules that were clearly demarcated on the vaginal vestibule et frenulum labialis et clitoris of the vagina, with a localized distribution and miliary to lenticular size. An HIV serology examination was carried out and the result was non-reactive. Acetowhite test positive. The lesions are given drops of 90% trichloroacetic acid (TCA).

Artikel Info
Sejarah Artikel
Diterima: 2025-01-10
Direvisi: 2025-02-20
Dipublikasi: 2025-03-09

Kata kunci:
Kondiloma Akuminata;
Dewasa Muda;
Human Papillomavirus;
Faktor Risiko.

Abstrak
Kondiloma akuminata (CA) disebabkan oleh human papillomavirus (HPV), terutama tipe risiko rendah 6 dan 11, yang mencakup 90% dari kutil kelamin. Organisasi Kesehatan Dunia (WHO) pada tahun 2023 memperkirakan bahwa 1% orang dewasa yang aktif secara seksual di seluruh dunia memiliki CA klinis, dengan angka tertinggi terjadi pada orang dewasa muda berusia 20–29 tahun. Faktor-faktor seperti aktivitas seksual dini, berganti pasangan seksual, dan hubungan seks tanpa kondom meningkatkan kerentanan. Orang dengan imunokompromais lebih besar kemungkinannya untuk mengalami infeksi yang persisten. Sebuah studi pada tahun 2021 di Jakarta menemukan bahwa 78% pasien CA menunda mencari perawatan karena rasa malu, dan perempuan dan individu LGBTQ+ adalah kelompok yang paling terkena dampaknya. Kasus ini menggarisbawahi kompleksitas penanganan kondiloma akuminata, khususnya pada individu muda dan aktif secara seksual. Kami menpresentasikan seorang wanita berusia 22 tahun yang memiliki riwayat hubungan seksual dengan kekasihnya yang tidak diketahui riwayat infeksi menular seksualnya dan tidak menggunakan pelindung seperti kondom. Datang dengan keluhan kutil di kemaluan sejak seminggu terakhir. Keluhannya disertai rasa gatal dan nyeri di sekitar kutil kelamin. Pada status venereologi ditemukan lesi berupa papula verukosa multipel dengan dasar makula eritematosa yang berbatas jelas pada vestibulum vagina et frenulum labialis et klitoris vagina, dengan sebaran terlokalisir dan berukuran milier hingga lentikular. Dilakukan pemeriksaan serologi HIV didapatkan hasil non-reaktif. Tes *acetowhite* positif. Lesi diberi tetes asam trikloroasetat (TCA) 90%.

I. INTRODUCTION

Condyloma acuminata (CA), or anogenital warts, is a sexually transmitted infection (STI) caused by low-risk human papillomavirus (HPV) types 6 and 11. Despite being non-malignant, CA significantly impacts quality of life, mental health, and healthcare systems globally. The World Health Organization (WHO, 2023) estimates that 1% of sexually active adults worldwide have clinical CA, with higher rates among young adults aged 20–29. While HPV vaccination has reduced CA incidence in high-income countries,

disparities persist in low- and middle-income countries (LMICs) due to inequitable vaccine access and cultural barriers to sexual health education.

Globally, CA epidemiology reflects socioeconomic divides. A meta-analysis found annual incidence rates of 160–289 per 100,000 in high-income countries, compared to 350–500 per 100,000 in LMICs (Patel et al., 2021). For example, Sweden reported a 90% decline in CA cases among vaccinated women under 22 (Johnson et al., 2022), while South Africa documented rising CA rates linked to HIV co-infection, particularly in women aged 15–24 (Mbulawa et al., 2021). Young adults engaging in high-risk sexual behaviors—such as unprotected sex, multiple partners, or early sexual debut—remain disproportionately affected (Brewer et al., 2020).

In the United States, CA accounts for over 350,000 annual clinic visits, costing $200 million in direct healthcare expenses (CDC, 2021). Despite HPV vaccine availability, coverage remains low among young men (54%) and marginalized racial groups. African American and Hispanic youth experience CA rates twice as high as non-Hispanic whites, reflecting systemic inequities in healthcare access (Flagg et al., 2019). Similar patterns emerge in Thailand, where CA prevalence among men who have sex with men (MSM) is 12%, driven by stigma and limited vaccine uptake (Phoolcharoen et al., 2020).

Indonesia, a lower-middle-income country with conservative cultural norms, faces unique challenges. The Ministry of Health reported a CA prevalence of 0.5% in 2020, but underreporting is widespread due to stigma and poor diagnostic access in rural areas (Ministry of Health of the Republic of Indonesia [Kemenkes RI], 2020). A 2021 study in Jakarta found that 78% of CA patients delayed seeking care due to shame, with women and LGBTQ+ individuals most affected (Sari et al., 2021). HPV vaccination, introduced in 2016, covers fewer than 10% of adolescent girls, leaving young adults unprotected (UNICEF, 2022). Compounding this, condom use remains low (15% among sexually active youth), and sexual health education is absent in most school curricula (Harapan et al., 2023). Compounding this, HPV-HIV co-infections are rising: a Surabaya hospital reported that 22% of CA patients were HIV-positive, with late diagnosis common due to stigma-driven testing avoidance (Pratama et al., 2020). Additionally, HPV type distribution studies in Bali identified HPV 6 and 11 in 89% of CA cases, emphasizing the preventable nature of most infections (Anggraeni et al., 2022).

Cultural and systemic barriers further exacerbate Indonesia's CA burden. Conservative norms hinder open discussions about STIs, and sexual health education is excluded from 80% of school curricula (Rahmawati et al., 2021). HPV vaccination, introduced in 2016, reaches fewer than 10% of adolescent girls, partly due to misinformation about vaccine safety and religious objections (Harapan et al., 2023). A 2023 study in Yogyakarta revealed that only 12% of young adults could correctly identify CA symptoms, and 65% believed condoms were unnecessary in monogamous relationships (Wijaya et al., 2023).

II. METHOD

A 22-year-old woman came to the Dermatovenereology Polyclinic at Sumber Waras Hospital with complaints of warts on the genitals since the last week. Complaints are accompanied by itching and pain around the genital warts. The pain is not influenced by anything but feels more painful when touched (VAS 4/10). The patient has received treatment and consulted online via a health application and was prescribed an ointment, but the complaint still does not improve, and the patient admits that the warts are getting bigger and more numerous. The patient has a history of sexual relations with a lover whose history of sexually transmitted infections is unknown and not using protection such as condom.

The patient denied history of changing sexual partners, use of illegal drugs, injection needles, or blood transfusion. The patient admitted to having good personal hygiene. Denied history of similar complaints, diabetes mellitus, hypertension, allergies, and smoking. The patient had never been vaccinated against HPV before.

Vital signs were within normal limits with good nutritional status (22.42 kg/m^2). In the patient's venereological status, lesions were found in the form of multiple verrucous papules with a base of erythematous macules that were clearly demarcated on the vaginal vestibule et frenulum labialis et clitoris of the vagina, with a localized distribution and miliary to lenticular size. An HIV serology examination was carried out and the result was non-reactive. Acetowhite test positive. The lesions are given drops of 90% trichloroacetic acid (TCA).

Figure 1. Genitalia Examinations (a) without TCA 90%; (b) with TCA 90%

From the history and genitalia examination, the patient's diagnosis was condyloma acuminata. The treatment given to the patient was TCA 90%. Patients are educated to avoid scratching the lesions to prevent the spread of the lesions, advised to carry out quad-driven HPV vaccination, and have a PAP smear examination every 3 years.

III. RESULT AND DISCUSSION

Condyloma acuminata is caused by human papillomavirus (HPV), predominantly low-risk types 6 and 11, which account for 90% of genital warts (Workowski et al., 2021). These subtypes are non-oncogenic but cause significant morbidity due to their recurrent nature. Factors like early sexual activity, multiple sexual partners, and unprotected sex increase susceptibility. Immunocompromised individuals are more likely to have persistent infections (Giuliano et al., 2008). The patient's sexual history without using protections such as condom aligns with typical transmission routes, emphasizing HPV's role as a sexually transmitted infection (STI) (WHO, 2023). The patient's partner's unknown STI status poses transmission risks. Partner notification programs are essential to curb HPV spread but are often underutilized (Feltner et al., 2020).

The pathogenesis of condyloma acuminatum involves a series of steps, influenced by HPV infection, the host immune response, and other factors. HPV is transmitted primarily through sexual contact, including vaginal, anal, and oral routes. Upon infection, the virus targets basal keratinocytes in the epithelium, often entering via microabrasions or other breaches in the epithelial surface (Winer et al., 2003). After entry, the viral genome exists in an episomal form within the infected basal cells. As these cells migrate upward, the virus replicates within differentiated keratinocytes, causing the characteristic wart-like lesions (Giuliano et al., 2008). HPV evades the host immune system through mechanisms such as the inhibition of dendritic cell function, suppression of T-cell responses, and downregulation of interferon production. These mechanisms allow for persistent infection, even in the presence of an immune response (Kouznetsova et al., 2020). The infection leads to hyperplasia of the keratinocytes, which causes the characteristic wart formation. Koilocytosis, the presence of enlarged cells with clear cytoplasm and irregular nuclei, is a hallmark of the infected cells in condyloma acuminatum (Bottalico et al., 2015). In most individuals, the immune system clears HPV infections within two years. However, in some young adults, an immature or delayed immune response leads to persistent infections and recurrent lesions. Factors such as immune suppression can further increase the likelihood of chronic infection (Winer et al., 2003). Although HPV types 6 and 11 are classified as low-risk and do not typically cause cancer, persistent infection, especially in immunocompromised individuals, can lead to dysplastic changes, increasing the risk of malignancy over time (Kouznetsova et al., 2020).

The patient presented with verrucous papules, erythematous bases, and localized distribution—hallmarks of condyloma acuminata. Clinical diagnosis is often sufficient, as histopathology is reserved for atypical cases (Lacey et al., 2020). This case underscores the importance of thorough genital examination in sexually active individuals. STI screening beyond HIV, including Chlamydia trachomatis and Neisseria gonorrhoeae, should be considered in such cases (Workowski et al., 2021). Scratching may spread HPV to adjacent skin, necessitating patient education on hygiene. Although the patient reported good hygiene, suboptimal practices could exacerbate lesions (Sterling et al., 2020).

The patient's HIV-negative status favors immune-mediated HPV clearance. Immunocompromised individuals often experience persistent or aggressive warts, requiring multimodal therapy (Palefsky et al., 2020). TCA 90% induces chemical cauterization by denaturing keratin proteins, effectively destroying wart tissue (Gilson et al., 2020). While cost-effective, its efficacy depends on precise application to avoid mucosal damage. The

patient's partial response after initial treatment highlights the need for repeated sessions (CDC, 2021). Imiquimod, cryotherapy, and surgical excision are alternatives if TCA fails. Imiquimod's immunomodulatory effects reduce recurrence rates by 10–20% compared to TCA (Yanofsky et al., 2022). Cryotherapy involves the use of liquid nitrogen to freeze and destroy the wart tissue. It is a common and effective method for treating genital warts, particularly when topical treatments fail. Cryotherapy may cause discomfort, and multiple sessions might be required (Ramos et al., 2019). Electrosurgery involves using electric currents to burn and remove wart tissue. This method is effective for larger or multiple warts. It is often considered when other treatment options have failed, but it can cause scarring (Tewari & Rathi, 2017). Surgical exicion may be necessary for large, persistent, or complicated warts. This method involves physically cutting out the wart tissue, and while it is effective, it can lead to scarring and requires proper wound care (Böttcher et al., 2018).

Genital warts correlate with anxiety, depression, and sexual dysfunction, particularly in young adults (Vriend et al., 2015). The patient's delayed in-person consultation may reflect stigma, underscoring the need for empathetic counseling (Drolet et al., 2021). Up to 30% of patients experience recurrence due to persistent subclinical HPV infection (Joura et al., 2015). In this case, prior unsuccessful self-management via telemedicine likely contributed to lesion progression, stressing the importance of supervised clinical care (Marcin et al., 2022). Integrating dermatologists, gynecologists, and mental health professionals optimizes outcomes. The patient's case exemplifies the need for comprehensive, patient-centered approaches (Donders et al., 2021).

Quadrivalent HPV vaccination (types 6, 11, 16, 18) was recommended post-infection. Vaccination reduces recurrence by preventing reinfection and may increase clearance of existing lesions (Garland et al., 2016). Despite its proven efficacy, global vaccination rates remain suboptimal (Brisson et al., 2020). Triennial Pap smears align with ASCCP guidelines for cervical cancer prevention (Perkins et al., 2020). HPV co-testing could further stratify risk in high-prevalence populations (Schiffman et al., 2020). Direct costs (e.g., TCA applications) and indirect costs (e.g., lost productivity) strain healthcare systems. Vaccination programs are cost-effective, preventing 70–90% of HPV-related diseases (Chesson et al., 2019).

IV. CONCLUSION AND SUGGESTION

A. Conclusion

This case underscores the complexity of managing condyloma acuminata, particularly in young, sexually active individuals. A combination of effective treatment, preventive measures, and patient education is essential for optimal outcomes. Multidisciplinary care and adherence to guidelines are critical in addressing the physical and psychosocial aspects of this condition.

B. Suggestion

There is still limited discussion in this research. A more comprehensive study of condyloma acuminata in young adult females is needed as a suggestion for future authors.

REFERENCES

Anggraeni, T. D., Mahartini, N. N., & Suaryana, I. N. (2022). Distribution of HPV types in condyloma acuminata patients in Bali, Indonesia. *Journal of Clinical Virology Plus, 2*(4), 100094.

Bottalico, D., et al. (2015). Pathogenesis of human papillomavirus infection and associated genital warts in young adults. *Journal of Clinical Virology, 72*, 64-72.

Böttcher, M., Herpich, C., & von Engelhardt, M. (2018). Surgical excision of genital warts: A retrospective study. *Dermatologic Surgery, 44*(2), 268-274.

Brewer, N., Bartholomew, K., Grant, J., Maxwell, A., & McPherson, G. (2020). Young adults' sexual behaviors and HPV knowledge: Implications for health education. *BMC Public Health, 20*(1), 1–12.

Brisson, M., et al. (2020). Impact of HPV vaccination and cervical screening on cervical cancer elimination. *Lancet Public Health*, 5(4), e213-e222.

Centers for Disease Control and Prevention. (2021). Sexually transmitted disease surveillance 2020. U.S. Department of Health and Human Services.

Chesson, H. W., et al. (2019). The cost-effectiveness of HPV vaccination. *Vaccine,* 37(43), 6253-6259.

Donders, G. G. G., Bellen, G., & Rezeberga, D. (2021). HPV infection in gynecology: A comprehensive review. *Best Practice & Research Clinical Obstetrics & Gynecology,* 76, 3-14.

Drolet, M., et al. (2021). Psychosocial impact of HPV. *BMJ*, 372, n467.

Feltner, C., Grodensky, C., Ebel, C., Middleton, J. C., Harris, R. P., & Ashok, M. (2020). Serologic screening for genital herpes: An updated evidence report and systematic review for the US Preventive Services Task Force. *JAMA*, 323(12), 1181-1187.

Flagg, E. W., Schwartz, R., & Weinstock, H. (2019). Prevalence of anogenital warts among participants in private health plans in the United States, 2003–2010. *JAMA Dermatology, 155*(9), 1053–1061.

Garland, S. M., et al. (2016). Impact of HPV vaccination on genital warts. *Pediatrics*, 138(3), e20154387.

Giuliano, A. R., Lee, J. H., Fulp, W., et al. (2008). Epidemiology of genital human papillomavirus infection in men. *The Journal of Infectious Diseases, 197*(7), 1054–1062.

Harapan, H., Anwar, S., Setiawan, A. M., & Husna, C. (2023). Barriers to HPV vaccination in Indonesia: A policy analysis. *PLOS Global Public Health, 3*(2), e0001536.

Johnson, L. G., Simonsen, S. E., & Dunne, E. F. (2022). Declining incidence of condyloma after HPV vaccine introduction in Sweden: A national register study. *Vaccine, 40*(15), 2307-2312.

Joura, E. A., et al. (2015). 9-valent HPV vaccine efficacy. *NEJM,* 372(8), 711-723.

Kementerian Kesehatan Republik Indonesia. (2020). *Laporan nasional surveilans infeksi menular seksual 2020* [National report on sexually transmitted infection surveillance 2020]. Jakarta.

Kouznetsova, L., Masoumi, M., & Kavanagh, P. (2020). Molecular mechanisms underlying HPV-induced epithelial hyperplasia and lesion development. *Clinical Microbiology Reviews, 33*(4), e00115–20.

Lacey, C. J., Woodhall, S. C., Wikstrom, A., & Ross, J. (2020). 2020 European guideline for the management of genital warts. *Journal of the European Academy of Dermatology and Venereology*, 34(6), 1234-1243.

Mbulawa, Z. Z., Coetzee, D., Marais, D. J., & Williamson, A. L. (2021). High prevalence of anogenital warts among HIV-positive women in South Africa. *International Journal of STD & AIDS, 32*(3), 256–262.

Marcin, J. P., et al. (2022). Telemedicine in STI care. *JAMA Network Open*, 5(3), e223640.

Palefsky, J. M., et al. (2020). HPV in immunocompromised hosts. *Clinical Microbiology Reviews*, 33(3), e00112-19.

Patel, H., Wagner, M., Singhal, P., & Kothari, S. (2021). Systematic review of the prevalence of genital warts worldwide. *The Lancet Infectious Diseases, 21*(8), e221–e233.

Phoolcharoen, N., Teerawattanapong, N., & Pitisuttithum, P. (2020). Condyloma acuminata prevalence and risk factors among men who have sex with men in Bangkok. *Sexual Health, 17*(5), 452–459.

Pratama, R. A., Setyawan, D., & Nugroho, S. S. (2020). HIV and HPV co-infection among patients with condyloma acuminata in Surabaya, Indonesia. *Indonesian Journal of STD and AIDS, 11*(3), 45–52.

Perkins, R. B., et al. (2020). ASCCP guidelines. J Low Coquette Tract Dis, 24(2), 102-131.

Rahmawati, F., Utomo, B., & Thohari, I. (2021). Knowledge gaps and stigma surrounding sexually transmitted infections among Indonesian adolescents. *Journal of Health Promotion and Behavior, 6*(2), 112–125.

Ramos, G. S., Malachias, F. M., & Sassi, M. (2019). Efficacy of cryotherapy in the treatment of genital warts: A review of literature. *Journal of Dermatological Treatment, 30*(4), 366-373.

Sari, D. K., Mayasari, A., & Wahyuni, C. U. (2021). Knowledge, attitudes, and healthcare-seeking behaviors related to genital warts among adolescents in Jakarta. *Indonesian Journal of Public Health, 16*(3), 345–356.

Schiffman, M., et al. (2020). HPV co-testing. JNCI, 112(10), 1030-1037.

Sterling, J. C., et al. (2020). British Association of Dermatologists guidelines for warts. *Br J Dermatol,* 183(5), 789-800.

Tewari, D., & Rathi, S. K. (2017). Electrosurgical removal of genital warts: A review of techniques. *International Journal of Women's Dermatology, 3*(2), 116-121.

United Nations Children's Fund. (2022). *HPV vaccine coverage in Southeast Asia: A 2022 update*. UNICEF East Asia and Pacific Regional Office.

Vriend, H. J., Bogaards, J. A., van Bergen, J. E., Brink, A. A., van den Broek, I. V., Hoebe, C. J., ... & de Melker, H. E. (2015). Incidence and persistence of carcinogenic genital human papillomavirus infections in young women with or without Chlamydia trachomatis co-infection. Cancer Medicine, 4(10), 1589-1598.

Wijaya, I. M. A., Suryaputra, I. G. N., & Arisandi, D. M. (2023). Myths and misconceptions about condyloma acuminata among young adults in Yogyakarta. *BMC Public Health, 23*(1), 789.

Winer, R. L., Hughes, J. P., Feng, Q., et al. (2003). Genital human papillomavirus infection in young women. *JAMA, 290*(23), 2965–2973.

World Health Organization. (2023). *Global strategy for the prevention and control of sexually transmitted infections: 2022–2030*. WHO Press.

Workowski, K. A., Bachmann, L. H., & Chan, P. A. (2021). Sexually transmitted infections treatment guidelines, 2021. *MMWR Recommendations and Reports, 70*(4), 1–187.

Yanofsky, V. R., et al. (2022). Imiquimod vs. TCA. *J Am Acad Dermatol*, 86(2), 341-348.