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## Electrosurgery on Giant Condyloma Acuminata

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### Abstract

Giant Condyloma Acuminata (GCA) is a sexually transmitted infection caused by Human papillomavirus (HPV) types 6 and 11. GCA lesions can growth up to 10 cm and form like a cauliflower shape. This infection can affect patient's quality of life. The goal of therapy in GCA is to remove all skin lesions, which can be done by surgical treatment. Many modalities have been tested in GCA cases, one of which is electrosurgery. The aim of this study was to evaluate effectiveness of electrosurgery for GCA. A 43-year-old woman came with complaints of warts appeared in the genital area since 3 months before. Examination showed multiple papules with a verrucous surface, size around 7 cm in the labia majora, labia minor and perineum. The acetowhite examination and histopathology lead to the diagnosis of condyloma acuminata. Electrosurgery (electrodesication) to remove GCA lesions divided into 2 times. Post-operative evaluation, patient did not complain of pain and erythema, edema, and pus. Electrosurgery is a therapeutic modality that can be chosen in cases of GCA. Electrosurgery, like other surgical modalities, is capable of removing the entire lesion, but the advantages of electrosurgery include not injuring large areas, minimal bleeding and a lower recurrence rate when compared to other therapeutic modalities.

**Keywords:** giant condyloma acuminata, electrosurgery, hpv infection, surgical therapy

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### Case Report

## Tindakan Bedah Listrik pada Giant Condyloma Acuminata

### Abstrak

Giant Condyloma Acuminata (GCA) merupakan infeksi menular seksual yang disebabkan oleh Humanpapillomaviru (HPV) tipe 6 dan 11. Lesi kulit GCA dapat muncul hingga lebih dari 10 cm dan membentuk gambaran seperti kembang kol (cauliflower shape). Hal ini dapat mengganggu kualitas hidup dari penderitanya. Tujuan terapi pada GCA adalah menghilangkan seluruh lesi kulit, hal ini dapat dilakukan dengan pembedahan. Modalitas

pembedahan telah banyak diuji pada kasus GCA, salah satunya bedah listrik. Bedah listrik dapat menghilangkan seluruh lesi GCA, sama dengan modalitas pembedahan lainnya. Tujuan studi ini adalah untuk mengevaluasi efektivitas bedah listrik untuk GCA. Dilaporkan seorang wanita 43 tahun datang dengan keluhan muncul kutil pada area kelamin sejak 3 bulan sebelumnya. Pada pemeriksaan tampak papul dengan permukaan verukosa, berwarna kulit, multipel, dengan ukuran  $\pm$  7 cm pada regio labia mayor, labia minor dan perineum. Dari hasil pemeriksaan acetowhite dan histopatologi mengarah pada suatu kondiloma akuminata. Dilakukan tindakan bedah listrik (elektrodesikasi) untuk

*mengambil lesi GCA dalam 2 tahap. Dalam evaluasi pasca tindakan, pasien tidak mengeluhkan nyeri serta pada pemeriksaan tidak didapatkan tanda-tanda infeksi sekunder. Bedah listrik merupakan modalitas terapi yang dapat dipilih pada kasus GCA. Bedah listrik seperti halnya modalitas bedah*

*lain mampu mengambil keseluruhan lesi, namun keunggulan bedah listrik antara lain tidak melukai area yang luas dan minimal perdarahan.*

**Kata Kunci:** *giant condyloma acuminata, bedah listrik, infeksi hpv, terapi pembedahan.*

**INTRODUCTION**

Giant Condyloma Acuminata (GCA) known also as Buschke-Lowenstein Tumor is a sexually transmitted infection caused by the Human Papillomavirus (HPV). The types of HPV that are known to be associated with GCA are HPV types 6 and 11. GCA skin lesions are characterized by multiple papules with clear edge developing a cauliflower-like appearance with a size of more than 10 (Hall, 2019; Loo et al., 2019; Sterling, 2019). The prevalence of GCA increases every year, between 9 – 13% of the world's population. The most vulnerable age is between the ages of 20-39 years (Hall, 2019). In Indonesia, a retrospective study of the condyloma acuminata profile in Dermatology Clinic of Sanglah Hospital Denpasar from January 2015 to December 2017 showed that increased of confirmed cases of condyloma acuminata from 2015 (85 patient) to 2017 (104 patient). And prevalence of CA cases in Indonesia was 5-19%. And the highest distribution was found in male compared to female, with age range between between 25-44 years old. And this disease was mostly found in middle educational group and private sector worker (Jayadharm & Wiraguna, 2020; Puspawati et al., 2018) .

Therapeutic modalities for GCA have been widely recommended, one of them is electrosurgery therapy. Electrosurgery therapy has various modalities that can be an option for GCA therapy. Electrosurgery therapy in GCA cases has the advantage that able to remove almost all lesions at one time with the lowest recurrence rate (Nieves-Condoy et al., 2021). However, this electrosurgery therapy also has some disadvantages such as pain (Loo et al., 2019) and unavoidable actions (Baigrie et al., 2022). The aim of this study was to evaluate the effectiveness of electrosurgery in GCA patients, where electrosurgery was found

to be able to remove all skin lesions and prevent recurrence in previous case reports (Baigrie et al., 2022; Workowski & Berman, 2011).

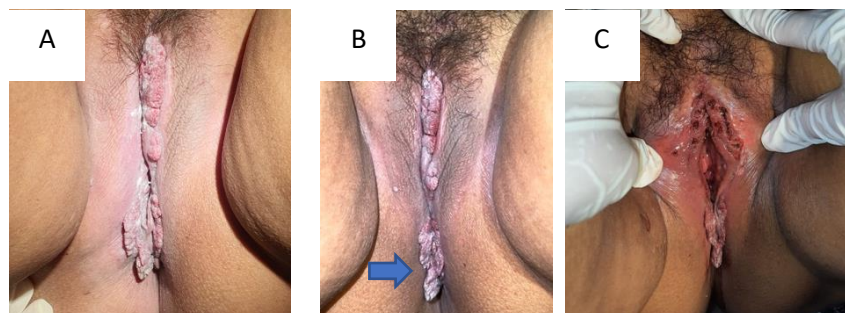
**CASE**

A-43-year-old woman, Javanese ethnicity, complained of warts appearing in the genital area since 3 months ago. The warts were initially small the size of a corn kernel and grew larger, multiplied and spread to the anus. The warts are also accompanied by intermitten itching with pain scale (VAS 6/10). The patient was a housewife with 4 children. Patient never checked her condition until it disturb her daily activity. Patient's husband has another wife who didn't live in the same house. Patient had active genito-genital sexual intercourse with her husband and had never used condom. Patient's husband had no complaints of appearing genital warts. History of vaginal discharge, gonorrhoea, or sores in the genital area was denied by the patient and the patient's husband.

The examination of the labia majora, labia minor, and perineum region showed multiple papules with a verrucous surface and no different with skin color, ± 7 cm in size. Examination of acetowhite with 5% acetic acid solution showed positive results (lesions turned white) (Figure 1 A-B). Human Immunodeficiency Virus (HIV) tests, Venereal Disease Research Laboratory (VDRL), and Treponema Pallidum Haemagglutination Assay (TPHA) showed non-reactive results. The results of the anamnesis and physical examination led to Giant Condyloma Acuminata (GCA) and the tissue removal procedure was carried out by electrosurgery (electrodesiccation). The extracted tissue followed by histopathology examination to confirm the diagnosis and exclude the

possibility of malignancy. Wounds after the electrodesiccation procedure were treated with Gentamicin ointment 2 times a day.

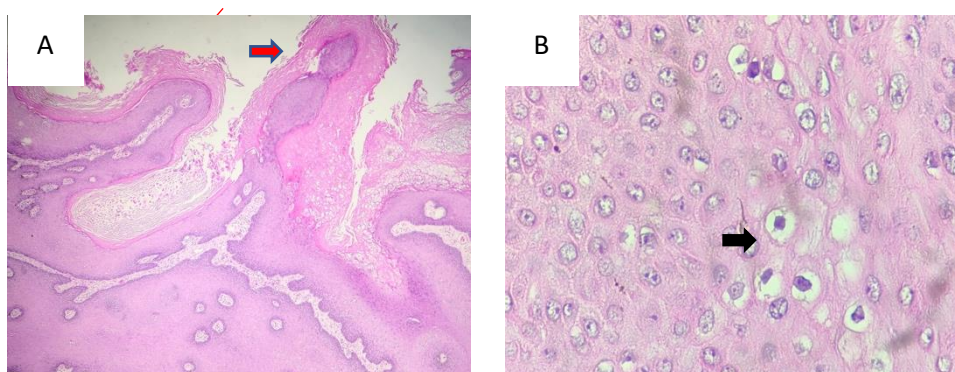
Patients are advised not to have sex during treatment and to check her sexual partners.



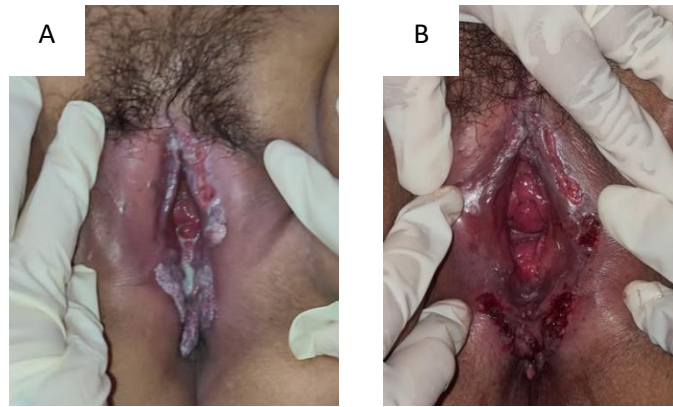
**Figure 1.** (A) Labia mayor, labia minor and perineum region showed multiple papule with verrucose surface with no different skin color,  $\pm$  7 cm size. (B) *acetowhite* examination showed positive result ( $\rightarrow$ ). (C) After first treatment with electrodesiccation.

After the first procedure, an evaluation was carried out every week to assess the improvement of the post-operative wound and the possibility of new lesions. The evaluation in the first to second week, the post-operative wound showed getting better and there were no signs of secondary infection. Histopathology is the study of the signs of the disease using the microscopic examination of a biopsy or surgical specimen that is processed and fixed onto glass slides. To visualize different components of the tissue under a microscope, the sections are dyed with one or more stains (Gurcan et al., 2009).

Histopathology examination showed tissue covered with squamous epithelium with hyperplasia and parakeratosis, koilocyte cells with nuclear atypia with halo perinuclear and chronic inflammatory cells with. Koilocyte cell is the hallmark of condyloma acuminata histopathology. The histopathological examination concluded that a condyloma acuminata were also seen. Koilocyte cell is the hallmark of condyloma acuminata histopathology. The histopathological examination concluded that a condyloma acuminata were also seen (Figure 2).



**Figure 2.** Histopathology examination. (A) Hyperplasia and parakeratosis of squamous epithelium ( $\rightarrow$ ) (H&E, x100) dan (B) Koilocyte cells and halo perinuclear ( $\rightarrow$ ) (H&E, x400).



**Figure 3.** (A) Skin-colored papules with verucose surface in labia major and perineum (B) Post second electrodissection.

The GCA lesion was completely removed and the patient's partner was educated to use a condom during sexual intercourse to prevent recurrence and to have his sexual partner (patient's husband) examined. After follow up 12 weeks after the procedure showed no new lesions and symptoms like itchy or pain.

**DISCUSSION**

Giant Condyloma Acuminata (GCA) is a sexually transmitted infection caused by certain types of Human Papillomavirus (HPV) such as type 6 and 11 (Hall, 2019; Loo et al., 2019; Pennycook & McCready, 2022). The HPV virus is a double-stranded DNA virus that primarily infects squamous epithelial cells. DNA viruses can remain in a latent phase for several months, eventually having a long incubation period, from one month to two years. The HPV genome contains oncogenes which encode proteins that play a role in stimulating cell proliferation. This protein provides a site for the virus to replicate in the host cell's DNA polymerase. The increasing the number of host cells infected by the virus in the basal layer, spinosis and granulosis of the epidermis will thicken the skin and cause acanthosis in the wart lesions. Giant Condyloma Acuminata generally takes 2 – 4 months to form lesions (Costa-Silva et al., 2017; Leung et al., 2018; Pennycook & McCready, 2022). The prevalence of genital HPV infection is around 10-20% and around 1% shows clinical manifestations, with a vulnerable age of 17-33 years, with the most age group between 20-24 years (Leslie et al., 2022; Pennycook & McCready, 2022). Giant

Condyloma Acuminata can appear in both men and women because this disease is transmitted through sexual intercourse. Another risk factors are early onset of sexual intercourse, multiple sexual partners, intercourse without using a condom, and an immunocompromised condition (Baigrie et al., 2022; Nieves-Condoy et al., 2021). The highest transmission is through vaginal and anal contact (Singh SK & John Wiley & Sons, 2018).

GCA skin lesions formed a dome-shaped keratotic papules or plaques with a size of more than 10 cm which are generally found in mucosal areas, such as anogenital and oral. Keratotic papules lesion can grow solitary or in clusters to form a cauliflower shape. Most of these skin lesions are accompanied by itching, burning and pain, but can also be asymptomatic (Dițescu et al., 2021; Loo et al., 2019). The diagnosis of GCA can be made from the history and physical examination and the skin lesions that are same with the characteristic of the disease. The examination with 3-5% acetic acid is effective for identifying GCA lesion that showed the lesions will turn white in the infected area. Histopathological examination is necessary in GCA cases because in some cases the lesions are difficult to differentiate from skin malignancies, such as squamous cell carcinoma. The histopathological characteristics of GCA are the same as those of condyloma acuminata, namely papillomatosis, acanthosis, hyperkeratosis, and koilocytic vacuolization. The specific characteristic of GCA that differentiates it from squamous cell carcinoma

is the appearance of koilocyte cells (Chan, 2019).

The goal of GCA therapy is to remove skin lesions, reduce the risk of transmission, symptomatic, and prevent disease to developing into invasive lesions. If no treatment is given, condyloma acuminata can relaps spontaneously in less than 1 year, with lesions that didn't change and increase in number or spread. However, the therapy in condyloma acuminata is known to be unable to eliminate the virus or reduce HPV infectivity. The therapy in GCA cases depends on the level of lesion size, location, patient's choice, cost, and side effects (Workowski & Berman, 2011). The gold standard therapy for GCA is resection of GCA tissue to a lesion-free area. There are several resection modalities for GCA, including classic surgery, laser surgery and electrosurgery (Nieves-Condoy et al., 2021; Purzycka-Bohdan et al., 2022). Electrosurgery therapy in GCA cases has the advantage of being able to remove partially or completely of the GCA lesions in one therapy, but this cannot prevent disease recurrence (Baigrie et al., 2022; Workowski & Berman, 2011). Electrosurgery therapy didn't cause extensive post-operative wounds and bleeding that occurs during electrosurgery. This modality is known to be less than other surgical procedures, such as surgical excision. Electrosurgery (Electrosurgery) is a surgical technique that transmits electric current to cut and eliminate tissue, as well as cautery of blood vessels. Electrosurgery utilizes the heat generated by high-frequency electric currents. In dermatology cases, the use of electrosurgery is divided into several modalities, including electrofulguration, electrodesiccation, electrocoagulation, electrosection and electrocautery (Gallagher et al., 2011; Vujevich & Godlberg, 2019). Indications for choosing the right modality depend on the clinical findings on examination. If the lesion only reaches the epidermis, electrodesiccation and electrofulguration can be used. These two modalities are widely used by dermatologists for the treatment of seborrheic keratosis, warts, and condyloma acuminata (Taheri et al., 2014).

The most common treatment option for GCA is trichloroacetic acid (TCA). Trichloroacetic acid (TCA) is a chemical destructive acid that burns, cauterizes and erodes the skin and mucosa, resulting in the physical destruction of warty tissue through protein coagulation. TCA is an inexpensive, cost-effective treatment most effective on small warts. However, recurrence rates are still relatively high at approximately 36%. Another case report of condyloma acuminata which was treated by electrocautery with a combination of Echinacea 500 mg orally, showed no recurrence after 6 months of evaluation (Pratita & Setyowatie, 2022; Puspawati et al., 2018). Electrosurgery therapy is able to remove all of the GCA lesions in single therapy, but there was some side effects from this therapy. The most frequent side effects were patients complained of pain and burning, burns, transmission of infection from the electrodes, scarring and respiratory tract disorders due to inhaling fumes from electrosurgery tools. In this case, the patient is given an antibiotic ointment to prevent infection in the area where the procedure was performed and given oral analgetic if needed (Baigrie et al., 2022; Taheri et al., 2014).

## **CONCLUSION**

Giant Condyloma Acuminata (GCA) is a sexually transmitted infection caused by infection with the Humanpapillomavirus (HPV) types 6 and 11. Giant Condyloma Acuminata can affect both women and men due to direct contact with individuals who have the HPV virus. GCA lesions are keratotic papules or plaques, with more than 10 cm size and forming a cauliflower shape. The gold standard therapy for GCA is tissue resection using surgical modalities. However, electrosurgery therapy can be used in GCA cases because it can partial or completely remove the lesion. In this case, reported a woman with GCA in the labia majora, labia minor, and perianal region. Electrosurgery (electrodesiccation) was performed for several times at intervals of several weeks. After 12 weeks of evaluation, there were no secondary infections or side effects from the procedures and no new GCA lesions were found. The choice of



electrosurgery therapy in GCA cases can be considered because it can remove the entire lesion at once. However, electrosurgery still has unavoidable side effects, such as pain and burning after the procedure, infection in the surgical area, and the f scar tissue are common complaints by patients.

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