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Case Report
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Condyloma Accuminata in Pregnancy Overlapping with Bacterial Vaginosis

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ABSTRACT

Background: Human Papilloma Virus (HPV) 6 and 11 are most commonly detected in genital warts, known as condyloma acuminata. Bacterial vaginosis (BV) is the most frequent vaginal infection in women aged 15 to 44 years. There may be an association between condyloma acuminata and BV. **Purpose:** To report a case of condyloma accuminata in a pregnant patient with combination bacterial vaginosis. **Case:** A 24-year-old, 8-week pregnant woman came to the clinic with a chief complaint of multiple warts in the genital area since 3 months prior to the hospital visit. The bumps on the vulva were small, and at first only one but then spread to surrounding areas. The bumps were itchy and painful. Complaints of vaginal discharge or fluor albus of yellowish-white gray color, accompanied by itchy and a fishy odor that appeared three months ago and worsened in the last two weeks. Examination results led to the diagnosis of condyloma acuminata and BV in the patient. The patient's condition improved after being given 90% trichloroacetic acid (TCA), electrocautery, and metronidazole. **Discussion:** Pregnancy decreases cell-mediated immunity, which may decrease immune tolerance and local physiologic changes and ultimately increase HPV infection in pregnancy. HPV infection is associated with a vaginal microbiota imbalance, making pregnant women prone to vaginal infections such as BV. **Conclusion:** Condyloma accuminata and BV often occur in high-risk groups for sexually transmitted infections, one of which is pregnant women. It is necessary to screen for sexually transmitted infections (STIs) in pregnant women to prevent complications.

Keywords: bacterial vaginosis, condyloma accuminata, sexually-transmitted disease, human and health.

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BACKGROUND

Condyloma acuminatum is a type of wart that affects the genital area and is caused by a human papillomavirus (HPV) infection. In pregnant women, condyloma acuminatum may grow rapidly and have a tendency to proliferate, possibly due to physiological changes in the external genitalia and the partially immunocompromised status of pregnancy, which allows for the rapid replication of HPV.[11] At least 40 of the more than 100 different types of human papillomavirus (HPV) primarily infect genital epithelium. HPV 2 and 4 are commonly found in warts on the hands, while HPV 6 and 11 are commonly found in genital warts, called condylomata acuminata. Condylomata acuminata can affect the vulva, vagina, cervix, penis, scrotum, perianal skin, and anal canal. Clinical manifestations of HPV include warts that may appear condylomatous, papular, flat, or keratotic. The disease may be asymptomatic in some patients but may be itchy and uncomfortable and may be caused by trauma from movement or sexual activity.[1]

Bacterial vaginosis (BV) is the most common vaginal infection in women aged 15 to 44 years. BV is a synergistic polymicrobial infection caused by an imbalance in the bacterial flora normally present in the vagina. This change in the lactobacilli population results in an increase in pH. Furthermore, the increase in pH leads to a decrease in lactic acid production. BV is sometimes asymptomatic and may go away on its own, but it can lead to more serious problems such as pelvic inflammatory disease, and patients with BV are

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at risk for other sexually transmitted infections (STIs) such as herpes, chlamydia, gonorrhea, and the human immunodeficiency virus (HIV). Risk factors for BV are multiple sex partners, smoking, pregnancy, use of intrauterine devices, douching, bathing in a bathtub or bubble bath, and use of a bidet toilet.[2]

Pregnancy is a risk factor for overlapping infection conditions, including BV (bacterial vaginosis) and condylomata acuminata.[6] BV during pregnancy is linked to serious pregnancy complications, including premature rupture of the membranes surrounding the baby in the uterus.[6] Maternal history of condyloma acuminatum during pregnancy is an important risk factor for the development of juvenile recurrent respiratory papillomatosis (JORRP).[7] Condyloma acuminatum of the cervix may grow faster during pregnancy, mimicking cervical cancer.[8] This may be because of reduced immunity during pregnancy, changes in hormone levels (for example, elevated progesterone levels), and increased blood flow to the cervix.[8] Multiple factors must be considered when treating condyloma acuminatum in pregnant women, including the stage of pregnancy, the location and size of the lesions, and the potential risks and benefits of treatment.[8] Therefore, pregnant women with a history of condyloma acuminatum or BV should be closely monitored and treated promptly to prevent complications. We report a case of genital warts during pregnancy caused by BV.

CASE REPORT

A 24-year-old woman came to the clinic with the main reason of having multiple warts in the genital area. The warts had been present in the genital area for 3 months prior to the hospital visit. The bumps on the vulva were small, and at first only one, but then spread to many surrounding areas. The bumps were itchy and painful. The patient also had complaints of vaginal discharge or fluor albus that appeared 3 months ago and worsened in the last 2 weeks. There was a yellowish-white gray vaginal discharge accompanied by itching and a fishy odor. A history of bleeding and brittle bumps was denied. There was a history of pantyliner use, but a history of vaginal douching was denied. Previously, the patient never complained of lumps, but for the past 2 weeks she has been treated by a dermatologist with fusidic acid cream, methisoprinol 3x500 mg, and histapan 3x50 mg.

The patient is married and a housewife who is 8 weeks pregnant. The patient is pregnant with her first child. A history of multiple sexual partners was denied. Her husband had similar symptoms but refused any treatment and denied having multiple sex partners. Anogenital sexual intercourse and a history of HPV vaccination were also denied.

The general condition of the patient showed good health, and the vital signs were within the normal range. Examination of the head/neck, heart, lungs, abdomen, and extremities revealed no abnormalities.Lymph node enlargement was also not found. Dermatological examination of the genitalia region found multiple papules and nodules with sizes varying between 0.5 and 3 cm, verrucous and filiform surfaces, and skin-like lesion color. There was gray-white vaginal discharge with dry labia mayora, no erosions, pus, or ulcers, no easily bleeding lesions, and genital lymph node enlargement (Figure 1).

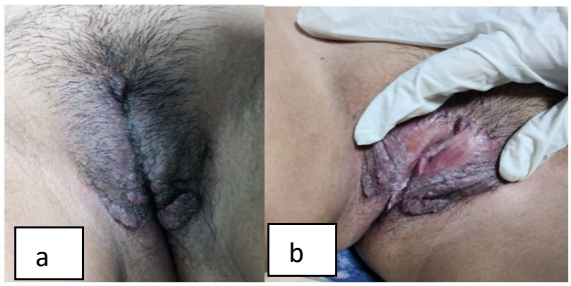

Figure 1. (a) A clinical picture of the patient when she first arrived. (b) Multiple papule and nodules at varying sizes (0,5-3cm), verrucose, and filiformis.

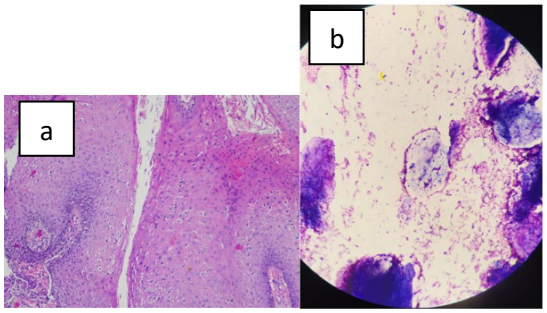

Figure 2. (a) The presence of vacuolated keratinocytes with shrunken nuclei (koilocytes) in the upper layers of the epidermis. (b) Gram staining a visible clue cell (+).

The patient then underwent several supporting examinations. Biopsy examination of the lesion concluded that it was condyloma accuminatum with koilocytic cells. Microscopic examination results with gram-stained and wet exams showed the presence of clue cells: whiff and acetowhite tests showed positive results; the pH of the preparation was 6, and no leukocytes or epithelium were found (Figure 2). The HIV rapid test was negative. The patient was diagnosed

with condylomata acuminata + BV + G1P0000 at 8/9 weeks gestation.

The patient was treated with electrocautery, trichloroacetic acid (TCA) 90% once a week, oral metronidazole 500 mg twice a day for 7 days, wet dressing with sodium chloride 0.9% twice a day applied for 10-15 minutes after electrocautery, and fusidic cream 2% twice daily on the erosion area. After follow-up visits three times in each week, no more warts were found in the vulvo-vovaginal region (Figure 3).

Figure 3. Clinical features of the patient after treatment.

DISCUSSION

Condyloma accuminata are mostly caused by HPV 6 and 11. HPV infection appears subclinically and asymptomatically but can be verrucosa, papular, flat, or keratinized. The increase in condylomas in pregnant women may be due to hormonal effects in the form of increased progesterone levels. Pregnancy decreases cell-mediated immunity, which may decrease immune tolerance and local physiologic changes and ultimately increase HPV infection in pregnancy.[1]

HPV infection manifests as warts, which may become more common during pregnancy. Several studies have reported that HPV infection has been shown to increase preterm birth, premature rupture of membranes, low birth weight, and intrauterine fetal death. During pregnancy, key considerations in the management of HPV infection include the safety of available therapies (mother and child) and the risk of vertical transmission to the fetus and newborn.[3] The patient is 24 years old and 8 weeks pregnant. Patients between 20 and 39 years of age are most commonly affected. During pregnancy, when estrogen and progesterone levels are high, the size of warts increases in some women.[1]

The mucosal abrasion that occurs during sexual intercourse will make it easier for HPV-infected partners to transmit it to their uninfected sexual partners. Repeated trauma to the area will increase viral infectivity and replication. The virus will enter the basal epithelial cells in the labia minora. HPV is a double-stranded deoxyribonucleic acid (DNA) virus that primarily infects the nucleus of differentiated squamous epithelial cells. DNA viruses can exist in the latent stage for several months, requiring an incubation period of one month to two years.[1]

In the patient's vulvo-vaginal area, multiple nodules (cauliflower-like) and papules with a verrucous surface were found, varying in size (0.5 - 1.5 cm), grayish in color, and flesh-like. The patient complained of lumps and mild itching in his genitals. This is consistent with the theory that patients with condylomata acuminata will report itching, burning, pain, or even bleeding.[1]

On biopsy examination, the biopsy tissue was covered with squamous epithelium with parakeratosis, acanthosis, and colocytosis. Connective tissue stroma with mononuclear and polymorphonuclear inflammatory cells is also seen. In theory, biopsy results of condyloma acuminatum can also show acanthosis, elongation of dermal papillae, and a firm border with the dermis.[1]

The presence of koilocytes is a hallmark of HPV infection and is a key feature in the diagnosis of condylomata acuminata.[9,10]

On the other hand, bacterial vaginosis is a common vaginal infection caused by an imbalance of bacteria in the vagina.[14] BV is an alteration in the vaginal flora associated with a reduction in lactobacilli and a predominance of anaerobic bacteria and is one of the most common causes of vaginal problems in women of childbearing age (15 to 44 years old). It is the most common condition occurred in reproductive age but may give 50–75% of asymptomatic signs.[16] BV is a synergistic polymicrobial infection caused by an imbalance in the vaginal flora. Normally, lactobacilli are found in high concentrations in a healthy vagina. In BV, there is a decrease in lactate, lactosin, and H2O2 production. Lactobacilli are replaced with pathogenic gram-negative anaerobic bacteria such as *Gardnerella vaginalis, M. hominis*, and *Mycoplasma curtisii*.[2] The patient is 26 years old and currently 8 weeks pregnant. Vaginal discharge is common during pregnancy and may be physiological in women with persistent vaginal discharge. Screening for lower genital tract (vaginal and cervical) infections is recommended for pregnant women. The presence of bacterial vaginosis has consistently been shown to be a risk factor for adverse obstetric outcomes, such as premature labor, premature rupture of membranes, spontaneous abortion, chorioamnionitis, sepsis and postpartum infections such as endometritis and cesarean section.[2]

On examination, the patient was found to have a yellowish-white vaginal discharge with a positive clue cell whiff test result and a vaginal pH of 6. Diagnosis of BV using the Amsel criteria, namely:
1. Profuse milky vaginal discharge,
2. Positive Whiff test result (fishy odor when the discharge is exposed to 10% or 20% potassium hydroxide),
3. pH of vaginal fluid greater than 4.5,
4. The presence of clue cells greater than 20% on microscopic examination.
Based on these criteria, the patient was diagnosed with BV.

Many treatments for condylomata acuminata are currently available. However, there is no data to indicate which treatment is most effective. Therefore, treatments are determined with consideration of the following factors: lesion size, lesion number (single or multiple), lesion extent (intensive or extensive), anatomical site (internal or external genitalia), patient preference, ease of treatment, adverse effects of drugs and surgery, and the doctor's experience, among others. The number of gestational weeks during treatment is also important. In pregnant women with condyloma acuminata, the lesions generally tend to grow rapidly. This may be because of changes in hormone levels (e.g., elevated progesterone levels), increased vaginal discharge, a moist local environment, and reduced immune responsiveness. In addition, clinicians must consider pregnancy complications such as preterm birth and their effects on the fetus. For these reasons, it is reasonable to consider the treatment for pregnant and non-pregnant women separately.[12] This is also in accordance with the guidelines for BV therapy, with metronidazole 3x250 mg or 2x500 mg orally.[5] The patient was then treated with TCA 80- 90% and electrocautery due to her pregnancy condition. TCA 80-90% and electrocautery are modalities for condylomata acuminata therapy.[1] The patient also received metronidazole 2x500 mg orally for BV.

It is important to note that pregnant women with condylomata acuminata have a higher chance of vertical mother-to-child transmission, and therefore, it is important to treat condylomata acuminata in pregnant women to decrease the possibility of transmission.[13] It is important to treat both conditions in pregnant women to decrease the possibility of complications such as preterm labor and low birth weight.[15] The relationship between HPV and BV tends to form a vicious circle. Low-risk types of HPV cause warts, including condyloma acuminatum HPV infection is associated with an imbalance of the vaginal microbiota and may impair mucosal metabolism or immune response, thereby leading to an imbalance of the vaginal microbiota and the occurrence of vaginal infections, including BV. Screening for sexually transmitted diseases in pregnant women is necessary to prevent complications for both mother and fetus.

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