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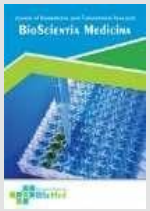

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Recurrent Genital Herpes and Balanoposthitis Candidiasis in Men with Incomplete Circumcision: A Case Report

Qaira Anum[1], Redha Cipta Utama[1*]

[1]Department of Dermatology and Venereology, Faculty of Medicine, Universitas Andalas/Dr. M. Djamil General Hospital, Padang, Indonesia

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***Corresponding author:**
Redha Cipta Utama

E-mail address:
redha372@gmail.com

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A B S T R A C T

Background: Circumcision can reduce the risk of sexually transmitted diseases (STDs). It may reduce males acquiring HSV-2 by 30% and 68% lower prevalence of balanitis than uncircumcised males. There is no report of incomplete circumcision as a risk for STD infection. **Case presentation:** A 31-year-old male complained of multiple ulcers that covered a yellowish crust on the penile with a burning sensation since 7 days ago. Initially, it was vesicles that turned into ulcers. One month ago, he complained of moist scales on his preputium that felt itchy and smelly. The patient is married and sexually active. History of intercourse with female sex workers without condoms 2 weeks ago. The patient had incomplete circumcision when he was a child; the preputium is still persistent and seldom cleaned regularly. One year ago, there was a history of vesicles on the penis. Physical examination revealed obesity grade 2. Venereological findings showed a whitish pseudo-membrane on the preputium, glans penis, and ulcers in various sizes covered pseudo-membrane surrounded erythema oedema. Laboratory revealed positive IgG HSV1, IgM, and IgG HSV2. A fungal culture is positive candida. Diagnosis established as recurrent genital herpes, balanoposthitis candidiasis, non-specific genital infection, candidiasis intertrigo. The patient has persistent preputium as the entry of commensal pathogens through abrasions in the mucosa, which causes infection. The patient had complete resolution after being administered oral acyclovir, doxycycline, and topical miconazole. **Conclusion:** Persistent preputium in incomplete circumcision is a risk for developing candidiasis, balanoposthitis, and recurrent genital herpes.

1. Introduction

Male circumcision (MC) reduces the risk of sexually transmitted diseases (STIs), including human immunodeficiency virus (HIV), herpes simplex virus (HSV) infection, and urinary tract infection.[1] Circumcised men were at lower risk of HSV-2 seropositivity than uncircumcised men.[2] Genital herpes is a sexually transmitted disease (STD) caused by herpes simplex virus type 2 (HSV-2). This infection can be prevented with a proper condom.[3]

Inflammatory of the glans and preputium (balanoposthitis) are common in uncircumcised males. This condition often occurs due to Candida albicans.[4] Balanitis is not a sexually transmitted infection. The yeast can cause infection, especially when the patient has underlying conditions, poor hygiene, overgrowth, or changes in baseline pH.[4] This case report explains if incomplete circumcision and unprotected sexual intercourse are risk factors for developing recurrent genital herpes and balanoposthitis candidiasis. The patient has a sexually transmitted infection and genital infection at the same time.

2. Case Presentation

A 31-year-old male came with multiple ulcers covered on a whitish scale on the penile with a burning sensation and painful urinating since 4 days ago.

Seven days ago, there were painful grouped vesicles on the penile that broke and turned into painful ulcers with a burning sensation. During this time, the patient seldom wipes his penis after urinating. The patient also did not regularly clean the penis. The patient had a history of incomplete circumcision when he was a child; the preputium still persists and covers the glans. Three days ago, the patient felt a burning sensation on the penile tip when he started urinating, and there was clear urethral discharge. One month ago, the patient felt an itchy, reddish patch that expanded widely on both of the inguinal areas. The patient has a wife and is sexually active. The last intercourse was 2 weeks ago with sexual workers (oral and genital) without condoms. The venereal disease history of sexual workers is unknown.

Physical examination showed obesity grade 2. Venereological findings revealed a thick whitish scale on the oedema-erythematous preputium and glans penis and multiple ulcers covered with a thick whitish scale surrounded with oedema and erythematous skin. There is minimal mucoid discharge on orificium urethrae. Multiple ulcers in various sized (biggest ulcer: 1 x 0.7 x 0.1 cm) and (smallest ulcer: 0.5 x 0.3 x 0.1 cm) with an irregular border, the wall doesn't resonate, erythematous bases filled with pus and yellowish crust on the penis. Palpation revealed multiple tenderness soft ulcers without induration. Dermatological findings revealed erythematous macules with thin, whitish scales on the bilateral inguinal area.

Figure 1. Preputium erythema oedema surrounded pseudo-membrane. Whitish pseudo-membrane on glans penis. Erythematous orificium urethrae with mucoid discharge.

Figure 2. Multiple ulcers in various size, covered with pseudo-membrane surrounded with oedema and erythematous.

Figure 3. Erythematous macules with thin whitish scales on both of the inguinal areas.

Wood's lamp examination on the inguinal area did not show coral red fluorescence. Dermoscopy revealed a diffuse whitish scale in skin lines without a vascular pattern.

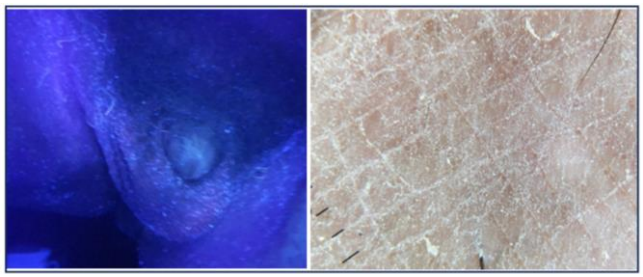

Figure 4. Wood's lamp did not reveal coral red fluorescence. Dermoscopy showed a diffuse whitish scale (10x magnification, non-polarized).

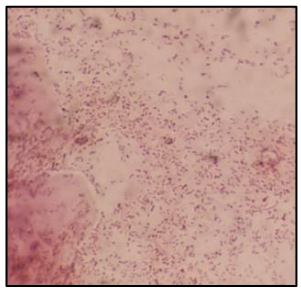

Figure 5. Gram staining urethral discharge (100x magnification).

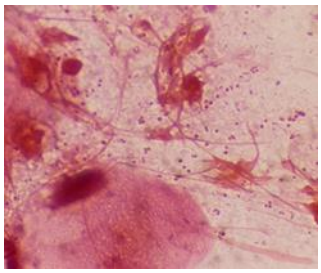

Figure 6. Gram staining base of ulcer (100x magnification).

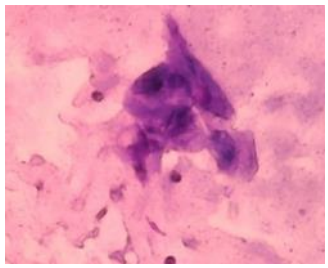

Figure 7. Tzanck test revealed a multinucleated giant cell (100x magnification).

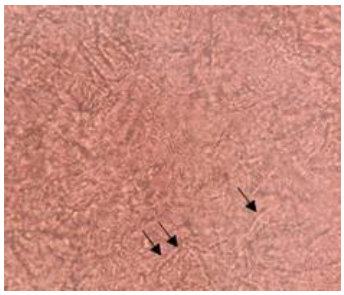

Figure 8. Potassium hydroxide (KOH) 10% from the glans penis revealed pseudo-hyphae (10x magnification).

Laboratory examination revealed negative for HIV, TPHA, and VDRL test. Serological examination was positive for IgM HSV2, IgG HSV2, and IgG HSV2.

Based on anamnesis, physical examination, and laboratory examination, the diagnosis was established as a recurrence of genital herpes, balanoposthitis candidiasis, non-specific genital infection, and intertrigo candidiasis. The patient was treated with acyclovir 200mg five times a day (5 days), doxycycline 100mg twice a day (7 days), and topical 2% miconazole cream, which was applied twice a day (14 days). A follow-up after 10 days showed multiple ulcers completely closed, and there was no itchy, painful skin or new vesicles. The itchy reddish patch on both inguinals disappeared. There was no painful and burning sensation when urinating. The patient was agreed for scientific publication by signing approval information.

Figure 9. After 10 days, there were no abnormal findings on the genital area.

3. Discussion

Circumcision decreases the entry of pathogens through abrasions in the thinly keratinized inner mucosal surface of the foreskin and eliminates the moist environment under the foreskin.[5] Male circumcision reduces the risk of HIV and STI infection, and the WHO now recommends voluntary medical male circumcision (VMMC) as one of the key HIV and STI prevention strategies.[6] Circumcision does not only protect the male partner, but evidence shows that the female partner is also protected and decreases the risk of STIs when their male partners are medically circumcised.[7]

A study by Iyemosolo (2021) revealed the prevalence of STIs was higher in uncircumcised males compared to those circumcised (33.6% vs 15.5%, respectively). Further, the prevalence of STI syndrome in participants who were medically circumcised was 17.7% versus 10.8% in those who were traditionally circumcised. Both medical and traditional circumcision are associated with a lower risk of sexually transmitted infections in a population with a relatively high STI syndrome prevalence and where one-third of males are circumcised.[7]

This patient has an incomplete circumcision. This predisposing factor may induce pathogen persistence and candida reproduction. This condition is aggravated by poor penile hygiene. The patient seldom wipes and cleans the foreskin regularly. Smegma on the foreskin contains several commensals, especially candida sp, which in humid environments may lead to overgrowth and cause an infection.

Balanitis is most common in uncircumcised males due to poor hygiene and the accumulation of smegma beneath the foreskin. Smegma is a whitish sebaceous secretion composed of epithelial cells and the sebum produced by the sebaceous glands genitalia. Under normal circumstances, smegma aids in the lubricating movement of the foreskin; without it, friction and irritation result. Poor hygiene, a tight foreskin, and a buildup of smegma serve as a nidus for bacterial and fungal overgrowth, which can lead to irritation and inflammation. Fungal infections are usually responsible, most commonly involving the yeast Candida albicans.[8] History and physical examination findings sometimes point to other etiologies that have management implications.

Infections arise in the accentuated skin folds seen in obesity. In particular, candida infection and skin fold mycosis were present in 22.8% of obese patients. Intertrigo, which occurs in skin folds below the abdominal pannus, inguinal area, inframammary area, and gluteal cleft, is a combination of inflammation and infection. Inflammation occurs secondary to friction, maceration, and occlusion and is frequently colonized by bacteria, yeast, and dermatophytes. Candida is the most common infection.[9]

Physical examinations revealed that the patient has obesity grade 2 and was diagnosed with candidiasis intertriginosis. Mechanism of infection through friction, maceration, and occlusion, which are aggravated with poor self-hygiene. The patient is wearing long pants that do not regularly change.

Genital herpes is an STI caused by HSV-2 during sexual intercourse with a previously infected genital partner. The increase in HSV-2 infection prevalence was associated with the increase in sexual activity.[3] Approximately 28,5 cases of HSV-2 were transmitted from men to women among 1.000 unprotected sexual intercourse. On the other hand, the transmission of HSV-2 from women to men was 1,7 cases among 1.000 unprotected sexual intercourse.[10] A condom can reduce as much as 65-96% transmission.[11]

This patient had a history of unprotected partner sexual intercourse with sexual female workers, which may be a risk factor for acquiring HSV-2 infection. Serological evaluation of the patient for genital herpes revealed positive results for IgM HSV-2, IgG HSV-2, and IgG HSV-1. The findings show that the patient had past infections of HSV-1 and also HSV-2. Anamnesis revealed any unclear medical history of having symptoms of genital and labial herpes. History of oral-genital sex may be a cause of cross infection of HSV-1 to the genital.

Global data on the prevalence of genital herpes is based mainly on HSV type 2 (HSV-2) seroprevalence, which is a common cause of genital infection. However, a growing number of reports show that HSV type 1 (HSV-1) is increasingly associated with primary genital herpes in the Western world. The majority of HSV-1 infections in primary genital herpes are caused by the oro-genital route of transmission.[12]

The patient was treated with acyclovir. Acyclovir is the most commonly used drug in genital herpes; however, with existing acyclovir regimens, the drug needs to be given 3–5 times in a day for 7–10 days in the first episode and for 5 days in recurrent herpes infection. Five times a day, intake of a drug may be particularly inconvenient for patients, and some of the doses may be missed. A convenient alternative regimen may be a higher dose, which should help reduce the frequency of administration and shorten the course of therapy based on the fact that viral replication is maximal within the first 24 hours.[13]

The patient complained of pain when they started urinating, which may indicate an infection of the lower urinary tract. Anamnesis revealed there is minimal discharge from the urethra. Based on physical examinations, there is mucoid-type urethral discharge. Gram staining revealed multiple coccus gram-negative bacteria and diplococcus extracellular bacteria that may indicate a chronic process infection due to a non-specific organism. Diagnosis established as non-specific genital infection.

For the treatment of non-specific genital infection, both azithromycin and doxycycline can be an option

treatment and have excellent efficacy. Chlamydia is a common aetiology of non-specific genital infections. In the context of a closed population receiving directly observed treatment for urogenital chlamydia infection, the efficacy of azithromycin was 97%, and the efficacy of doxycycline was 100%. However, azithromycin is first-line therapy for non-specific genital infection.[14]

The patient was treated with doxycycline 100mg twice a day for 7 days, acyclovir 200mg five times a day for 5 days, and topical 2% miconazole cream. After 10 days, the lesions completely healed, and all wounds were well closed without any painful sequelae. Key points from this case are the identification and management of risk factors to prevent the recurrence of infection. The patient was advised to keep good penile hygiene with regular wipes, especially after urinating, and clean daily when bathing. The patient was also advised to consult the department of urology for re-circumcision because preputium excess may lead to re-infection. Another important message is using condoms to prevent sexually transmitted disease infection.

4. Conclusion

Incomplete circumcision is a risk factor for herpes genital herpes and balanoposthitis candidiasis. Identification and management of risk factors for genital infection and STDs is important to prevent the recurrence of infection.

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