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Case Report

Candidiasis vulvovaginalis by candida tropicalis in chronic hepatitis B patient: A rare case

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Abstract Vulvovaginal candidiasis (VVC) is an infection caused by Candida, 85-90% by Candida albicans, 20% by non-albicans and due to high recurrence. Risk factor of VVC is immunocompromised patients such as diabetes mellitus and chronic hepatitis B. The purpose of this case report is increasing knowledge to provide appropriate management in VVC cases et causa C. tropicalis in chronic hepatitis B patient. A 34-year-old woman came with vaginal discharge 2 weeks ago and had chronic hepatitis B. Physical examination revealed cottage cheese like discharge. 10% KOH examination showed budding yeast cells and pseudohyphae and fungal culture showed C. tropicalis colonies. Patients were given 100.000 IU of intravaginal suppository for 14 days and showed improvement. Non-albicans species such as C. tropicalis are rare causes of VVC but have high virulence and often resistant to antifungals and causes morbidity due to its high recurrence rate. Direct microscopic examination using 10% KOH helps establish the diagnosis of VVC. Culture examination was performed on complicated VVC to determine the etiology. Management of VVC must consider comorbid factors, etiology and VVC episodes. Topical therapy is preferred in VVC et causa C. tropicalis with chronic hepatitis B due to its safety and high effectiveness.

Key words
Candida tropicalis; Candidiasis vulvovaginalis; Chronic hepatitis B.

Introduction

Vulvovaginal candidiasis (VVC) is a fungal infection in vulva and vagina area caused by *candida spp.* A and cause morbidity due to its high recurrence rate.[1] The research carried out by Li TY *et al.* showed that chronic B hepatitis infection was one of the infections caused immunocompromised condition due to immune response disfunction.[2] The success of VVC management depends on episode, etilogy, classification, comorbid disease determining patient immune status, other sexual transmitted infection, and antifungal drug sensitivity.[3] Antifungal therapy treatment must also consider liver disease existence due to 2.9% of hepatotoxicity risk increase.[4] The purpose of writing this case is that clinician can find out the therapy option in the VVC case with complication. The purpose of this case report is increasing knowledge to provide appropriate management in VVC cases et causa C. tropicalis in chronic hepatitis B patient.

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Case report

A 34-year-old woman came with a chief complaint of vaginal discharge since 3 months ago. At first the patient felt white vaginal discharge like milk, clotted, and itchy. The vaginal discharge increased more escpecially when the patient had sexual intercourse. It increased more and more, so the patient changed

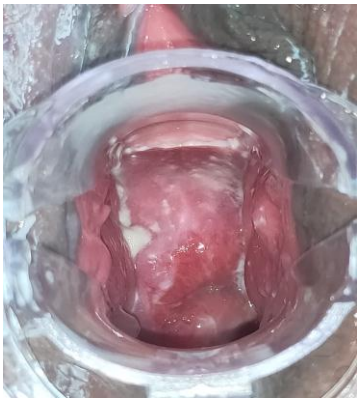

Figure 1 cervix et vagina showed erythema with cottage cheese like discharge.

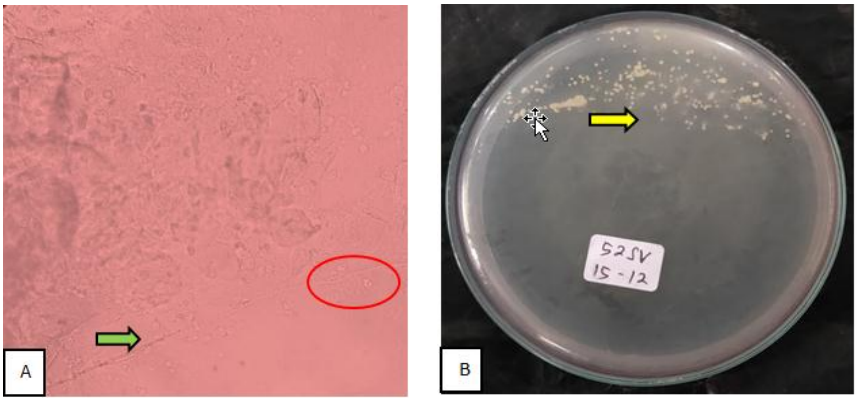

Figure 2 (A) The Microscopic examination using KOH showed pseudohyphae (green arrow) and budding cell (red circle), (B) The culture examination with saboroud dextrose agar medium showed Candida tropicalis fungal colony (yellow arrow).

underwear 4 till 5 times a day. It itched more, then the patient scratched and felt pain after urinating. The patient has chronic B hepatitis history, controls to internal disease polyclinic, and has been given tenofovir 300mg/24 hour orally and pegasys® (interferon alfa 2A) 180mcg/ week intradermally since four years ago. The patient works as motorcycle broker that moves one workplace to the others every day and always wears jeans pants.

The physical inspection exmanination of external genitalia revealed that there was erythema in the mayor and minor labia with sticky white discharge, no lump or erosion. The interna genitalia regio showed white discharge, unsmelled, lumpy like cheese in the cervix and vagina with erosion in some parts **(Figure 1)**. pH examination result in the patient was 7 and negative amine test. The direct KOH microscopic examination result in the vaginal swab was revealed pseudohyphae and budding cell **(Figure 2)**. The vaginal swab culture examination was revealed Candida tropicalis funginal colony. Based on the history, physical and supporting examination of the patient's diagnosis was vulvovaginal candidiasis et causa Candida tropicalis.

The patient was treated with 100.000IU intravaginal suppository nystatin once a day for 14 days. The patient was educated to wear sweat absorbing and untight pants, change underwear as frequent as possible if it had been humid, toilet hgyene knowledge, not to use feminine soap, and not to have sexual intercourse during treatment and routine control.

Discussion

Vulvovaginal candidiasis generally occurs to 75% women and 40 to 50% suffers recurrence. The increases of VVC incidence are caused by freely antibiotic usage, immunosurppresive therapy, and immunocomprised condition. Vulvovaginal candidiasis is classified into two, namely VVC without and with complication. One of the conditions of VVC with complication is VVC occuring in immunocomprised patients or proved as non–albicans infection.[5] The Candida infection in the patient was proved due to C. tropicalis or non-albicans species so the patient was VVC with complication.

The direct microscopic examination using 10% KOH was used to detect the existence of yeast Candida. This examination would show yeast budding cell with or without hyphae and pseudohyphae.[6] The culture examination had better sensitivity and carried out to the

immunocompromised patient and suspected caused by non-albicans species. The culture examination to the patient was sensitive C. tropicalis to all antifungal group.

Candida tropicalis is one of the non-albicans fungal species causing VVC. Candida tropicalis has hydrolase enzyme namely caogulase, phospholipase or proteinase which can perform biofilm formation and phenotype change and it shows virulence to tissue invasion.[7] The research carried out by Arastehfar *et al.* showed that C. tropicalis was resistant to azol group including voriconazole, fliconazole, itraconazole and posaconazole.[8]

Administration of 600 mg boric acid intravaginally once a day packaged in gelatine capsule for 10 to 14 days showed the effectiveness to VVC case due to non-albicans species. Intavaginal suppository nystatin with 100.000UI dosage for 7 to 14 days was one of the therapy recommendations to non-albicans VVC patient. Nystatin is broad spectrum anti fungal drug and formed from double bonded lactone ring and sensitive to sterol in the fungal cell membrane and inducting cell membrane permeability. Nystatin will only be bound by fungus or sensitive yeast which can be used in the Candida and non-albicans species infection.[9]

The selecting of VVC therapy must also consider liver function. Hepatotoxicity can be caused by direct effect of antifungal drug given or toxic liver damaging metabolites. The research carried out by Potschka *et al.* showed that antifungal amphotericin B and caspofungin showed low hepatotoxicity while azol group such as fluconazole and variconazole showed high hepatotoxicity. Azol antifungal group caused the increase of liver enzyme level and hepatocellular and cholestatic damage.[10] The consideration of selecting topical therapy compared to antifungal recommendation based on culture result was fluconazole because the patient had chronic hepatitis B history so topical therapy was safer than azol group with hepatotoxicity effect.

Conclusion

Diagnosis of candidiasis vulvovaginalis is established by history taking and general examination. Vaginal swab culture examination is used to determine the causative fungus and antifungal resistance. Treatment of non albicans VVC is still a challenge especially the presence of comorbid disease such as hepatitis B. The patient is given nystatin 10.000IU suppositoria for 14 days and had clinical improvement.

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