Thai Journal of Obstetrics and Gynaecology
November 2024, Vol. 32, No. 6, pp. 495-499.

CASE REPORT

Fournier's Gangrene in a Pregnant Woman with Genital Herpes: A case report

Jun Jiet Ng, M.D., MRCOG*,
Sukanda Jaili, M.D., MOG*,
Marcus Kang, M,D., MRCOG**,
Chee Khang Liew, MBBS*,
Kit Voon Ho, M.D.*,
Sing Chi Wong, M.D.**

** Department of Obstetrics and Gynecology, Sarawak General Hospital, Jalan Hospital, Sarawak*
*** Department of Obstetrics & Gynecology, Sibu Hospital, Jalan Ulu Oya, Sarawak*

ABSTRACT

Genital herpes is a viral infection caused by herpes simplex virus. Most of the literature on genital herpes in pregnancy focused on the transmission of the herpes simplex virus to the newborn and the majority of disseminated genital herpes had been reported as encephalitis, hepatitis and pneumonia. In this case report, the genital herpes was complicated with secondary infection and disseminated rapidly through the perineal subcutaneous tissue which is also known as Fournier's gangrene. In females, Fournier's gangrene is rare, and it is even rarer in pregnant women. There are only a few cases reported worldwide. To our best knowledge, this is the first case of genital herpes in pregnancy that progressed to Fournier's gangrene. This case report also highlighted the long-term complications of Fournier's gangrene.

Keywords: Fournier's gangrene, genital herpes, pregnancy, vaginal stenosis, colostomy, sexual dysfunction, hematocolpos, hematometra.

Correspondence to: *Jun Jiet Ng, M.D., MRCOG, Department of Obstetrics and Gynecology, Sarawak General Hospital, Jalan Hospital, 93586 Kuching, Sarawak. E-mail: njjgbb@gmail.com*

Received: 15 October 2023, **Revised:** 25 November 2023, **Accepted:** 7 February 2024

Introduction

Genital herpes and Fournier's gangrene (FG) are two distinct medical conditions and there are no reports of them occurring simultaneously in a pregnant woman. Genital herpes is a viral infection caused by herpes simplex virus (HSV) that can affect the genital and anal areas. During pregnancy, there are concerns about the transmission of HSV to the baby during childbirth[1]. FG is a medical emergency characterized by rapidly progressive necrotizing fasciitis of the perianal and genitourinary area with high mortality. FG is a polymicrobial synergistic soft tissue infection, with a mixture of gram-positive, gram-negative bacteria and aneroboic organisms. The most commonly cultured organisms are Escherichia coli, Streptococci, Staphylococci, Bacteroides and Pseudomonas[2]. Compared to males, FG is less common in females as the vagina allows the drainage of pelvic secretion and contents[3]. There is a lot of literature focusing on the acute management of FG. Early detection, intensive fluid resuscitation, systemic antibiotics, extensive wound debridement, wound care and nutritional support are the key components of FG management[4]. Our case report highlighted the long-term complications and consequences of FG: vaginal stenosis causing sexual dysfunction, genital tract outflow obstruction leading to hematocolpos and hematometra, and the need for lifelong colostomy.

Case report

A 28-year-old diabetic obese lady at 31 weeks of pregnancy presented with complaints of blisters over the perineal region, associated with worsening itchiness and pain for the past one week. Examination revealed a 3 cm ulcer at the posterior fourchette involving bilateral labia minora and labia majora (Fig. 1). Multiple vesicles were seen at the perianal region which subsequently erupted and turned into ulcers with pus discharge (Fig. 2). A diagnosis of genital herpes with secondary infection was made and confirmed with serum HSV polymerase chain reaction test. She was started on intravenous acyclovir and intravenous ampicillin /sulbactam. On day 3 of admission, she went into labor, and an emergency cesarean section was performed. A 1.6 kg baby girl was delivered and admitted to the neonatal intensive care unit for neonatal HSV infection.



Fig. 1. Genital herpes with ulceration.



Fig. 2. Worsening of genital herpes wound with secondary infection.

The perineal and perianal wounds expanded and worsened despite medical treatment and dressings. The patient went into severe sepsis with acute kidney injury and respiratory distress on day five of admission. She was intubated and a decision for wound debridement and colostomy was made to

prevent wound contamination from fecal soiling. Full dehiscence of the anal triangle with complete destruction of the external and internal anal sphincter muscles extending into the ischiorectal fossa was noted intraoperatively. Anteriorly, extensive wound debridement was carried out till the level of the clitoris, removing all the pus collection and necrotic tissue over the vulvar and vagina (Fig. 3). The diagnosis of Fournier gangrene was confirmed with histopathology examinations reporting obliterative endarteritis, arteriolar thrombosis and necrotic areas. Perineal tissue cultures grew a mixture of gram-positive and gram-negative microorganisms. The antibiotic was changed to intravenous piperacillin/ tazobactam and clindamycin. The perineal wound was left open and healed through secondary intention (Fig. 4).

She made an uneventful recovery after 3 weeks of intensive care unit stay.



Fig. 3. Surgical debridement of the Fournier's gangrene.



Fig. 4. Secondary healing of the perineal wound.

However, at 6 months follow-up, the patient revealed that she had no menstrual flow, and she was unable to consummate with her husband. She experienced severe pain and bleeding during sexual intercourse which traumatized her. Her vagina and anus were obliterated and stenosed with well-healed scared tissue (Fig. 5). She was scheduled for vaginoplasty and vaginal recanalization by urogynecologists and plastic surgeons.



Fig. 5. Vaginal and anal stenosis.

Discussion

Genital herpes in pregnancy can progress to FG if it is not managed appropriately. Obesity, diabetes mellitus, and pregnancy itself, which is an immunomodulatory event, predispose patients to FG[5]. Blisters and ulcers in genital herpes serve as an entry port for secondary infection. Furthermore, the proximity of the anal opening lead to wound contamination with feces. This highlights that besides antiviral treatment; perineal hygiene is an important part of genital herpes management. Worsening of the perineal wound needs to seek immediate medical attention and FG needs to be suspected.

FG is a clinical diagnosis with the hallmark of severe pain, erythema, subcutaneous crepitation, purulent discharge and gangrene in the genitalia and perianal tissue.

Laboratory parameters are non-specific and imaging tests may aid in determining the origin and the extension of the gangrene[6].

Broad-spectrum antibiotics, early wound debridement and aggressive resuscitation are the mainstay of treatment for FG. Antibiotic therapy used needs to cover gram-positive, gram-negative, and anaerobic organisms which are usually associated with Fournier gangrene. The combination of a third-generation cephalosporin, aminoglycoside, penicillin, and metronidazole has traditionally been used as triple therapy antibiotic coverage. However, in pregnancy, aminoglycoside (Food and Drug Administration (FDA category D) is usually avoided and replaced with piperacillin/tazobactam, vancomycin or carbapenems (FDA Category B)[7]. For pregnant women whose condition deteriorates, timely delivery of the baby is important to enhance maternal resuscitation.

Colostomy has a contentious role in the treatment of FG. Although it minimizes fecal contamination and promotes wound healing, it is associated with increased mortality, exposing the patient to further surgical operations and the possibility of anastomosis breakdown[8]. Colostomy was performed in our case due to extensive anal sphincter damage. Vaginal stenosis and sexual dysfunction are long-term complications of FG that are rarely discussed. Patients may be embarrassed to admit that they are unable to consummate with their spouse. According to the diagnostic and statistical manual of mental disorders fifth edition (DSM-5), this will fall under the category of genito-pelvic pain/penetration disorder (GPPD)[9]. Information on sexual function needs to be checked during follow-up. Radiation therapy, vaginal surgery, and trauma are the most common causes of vaginal stenosis; to the best of our knowledge, this is the first case of vaginal stenosis following FG. Vaginal estrogen therapy, early vaginal dilatation, and wound dressing, in our opinion, would prevent vaginal scarring and stenosis. Furthermore, genital tract outflow obstruction will lead to hematometra, hematocolpos and retrograde flow of menstruation into the abdominal cavity, causing severe abdominal pain. Vaginal recanalization and reconstruction are the solutions to these complications. These procedures require expertise, such as urogynecologists and plastic surgeons.

Conclusion

Genital herpes in pregnancy should not be treated lightly as it can progress to FG in the presence of risk factors. FG is a life-threatening condition that requires urgent treatment to prevent the rapid spread of infection and tissue necrosis. The management of FG in pregnancy is complex. A multidisciplinary approach and timely delivery of the baby are important to improve maternal resuscitation and outcomes. Not only the physical health but also the psychological well-being of patients with FG needs to be taken care of. Long-term complications including sexual dysfunction and lifelong colostomy should be addressed and monitored in patients with FG.

Potential conflicts of interest

The authors declare no conflicts of interest.

References

1. Money DM, Steben M. No. 208-Guidelines for the

management of herpes simplex virus in pregnancy. J Obstet Gynaecol Can 2017;39:199-205.
2. Bjurlin MA, O'Grady T, Kim DY, Divakaruni N, Drago A, Blumetti J, et al. Causative pathogens, antibiotic sensitivity, resistance patterns, and severity in a contemporary series of Fournier's gangrene. Urology 2013;81:752-8.
3. Rondon-Tapia M, Torres-Cepeda D, Reyna-Villasmil E. Vulvar fournier's gangrene. Rev Peru Ginecol Obstet 2021;67:1-4.
4. Sinha R, Arachchi A, Lee P, Marwan K. Fournier gangrene in pregnancy. Obstet Gynecol 2015;125: 1342-4.
5. Sobrado LF, Averbach P, Jayme VR, de Camargo MGM, Sobrado CW, Nahas SC. Fournier's gangrene during pregnancy in a patient. with Crohn's disease. Am J Case Rep 2022;23:934-42.
6. Althunayyan S, Karamitosos E. Fournier's gangrene in an obese female in third trimester of pregnancy. Saudi Med J 2018;39:415-8.
7. Bookstaver PB, Bland CM, Griffin B, Stover K, Eiland LS, McLaughlin M. A review of antibiotic use in pregnancy. Pharmacotherapy 2015;35:1052-62.
8. Planellas Giné P, Rodríguez-Hermosa JI, Codony Bassols C, Marinello F, Salvador Roses H, Gil Garcia J, Codina-Cazador A. Role of derivative colostomy in Fournier's gangrene: Analysis of 46 cases. Surgical Practice 2017;21,111-5.
9. American Psychiatric Association. Diagnostic and statistical manual of mental disorders. 5th ed. American Psychiatric Association Publishing; 2013.