Case report

A case report of delayed syphilis diagnosis in pregnancy

ABSTRACT

Aims: To report a case of primary genital syphilis in a pregnant woman, which is atypical due to the delayed diagnosis, course of the disease and to emphasize its reasons and clinical management.
Presentation of case: We present a pregnant primiparous woman G1P0A0 complaining of pain and growing lesion in the perineal area. She was misdiagnosed and unsuccessfully treated for the perineal abscess several times. The diagnosis of syphilis was delayed because of the negative prenatal syphilis test result in the first trimester. The negative test result misled doctors into immediately dismissing the diagnosis of syphilis. In addition to the delayed diagnosis, after the correct diagnosis regardless of an appropriate treatment with benzathine penicillin G, the pain and the chancre recurred possibly due to the reinfection during intercourse with an infected partner.
Discussion: Diagnosing syphilis may be complicated itself. In this case there were several factors that made the correct diagnosis and successful treatment even more difficult. These were: negative prenatal screening, reinfection and recurrence of the symptoms after treatment.
Conclusion: With this case we emphasize the importance to repeat the syphilis testing if the diagnosis of syphilis is suspected, regardless of previous negative first trimester syphilis screening result and importance of sexual partner's screening and treatment if infected.

***Keywords**:* Treponemal Infections. Syphilis. Case reports.

1. INTRODUCTION

Syphilis represents a current and emerging public health problem. The number of newly diagnosed cases of syphilis ranges from 5 to 12 million worldwide each year, albeit with differences in distribution and trend. [1] During the COVID-19 pandemic, many countries had reported low coverage for preventive, testing and treatment services related to sexually transmitted infections (STIs), which has led to a resurgence of STIs worldwide, including syphilis. [2] This resurgence threatens the health not only of mothers, but of newborns as well. [3] It is known that syphilis infection in pregnancy is the second leading cause of stillbirth globally and may result in prematurity, low birthweight, neonatal death, and infections in newborns. These adverse outcomes can be prevented with a simple and inexpensive rapid test followed by treatment with benzathine penicillin. [4] Early diagnosis and subsequent treatment may prevent mother to child transmission (MTCT) and improve maternal-fetal outcomes. [3][5] For this reason all pregnant women are tested for syphilis at the first prenatal visit and in some countries, including Eastern European region country Lithuania, they are screened again during the third trimester. [6][7] Thanks to such prenatal screening, 63 cases of syphilis in pregnancy were diagnosed in Lithuania over a five-year period (2014-2019). In four of them congenital syphilis (CS) was confirmed. [8] According to World Health Organization (WHO) data, in 2019, an

average of 3.2% of antenatal care attendees tested positive for syphilis in 78 reporting countries. [4] The Centers for Disease Control and Prevention (CDC) reported that the rate of CS in the United States has dramatically increased, from 334 cases in 2012 to 2148 cases in 2020 and reached a 20-year high. The emerging problem is that most newborns diagnosed with CS were born to mothers who received prenatal care, indicative of the need for better provider education and guideline adherence. [3][9] Diagnosing syphilis may be complicated, because it often imitates other diseases, thus it is crucial for the health care providers to renew the knowledge in order to better understand the pathogenesis and to diagnose syphilis in pregnancy as soon as possible. [10] For this purpose it is useful to know that maternal risk factors for syphilis during pregnancy include sex with multiple partners, sex in conjunction with drug use or transactional sex, late entry to prenatal care or no prenatal care, intravenous drug use, incarceration of the woman or her partner, and unstable housing or homelessness. Moreover, as part of the management of pregnant women who have syphilis, providers should obtain information concerning ongoing risk behaviors and treatment of sexual partners to assess the risk for reinfection. [11] We report a case of atypical primary genital syphilis in pregnant woman, who was misdiagnosed several times as the physicians immediately dismissed the diagnosis of syphilis based on the prenatal screening results and underestimated the need to repeat syphilis testing. In addition, despite an appropriate treatment the soft chancre recurred, possibly due to the reinfection while in close contact with an infected partner. We aim to emphasize the treponemal infection pathogenesis and draw the attention to antenatal syphilis screening tests interpretation as well as partner screening and treatment.

2. PRESENTATION OF CASE

All the data for this report was collected from medical records, photos were taken during physical examinations in period from May to October 2021. Patient consent was obtained for publishing an anonymous case report including the use of the images.

A 22-year-old primigravida Lithuanian woman at 25+0 weeks of gestation was referred to Vilnius university hospital “Santaros klinikos” for level III general surgeon consultation. She was complaining of pain and a progressively growing lesion in the perineal area, which arose 3 months ago. At first it localized in the anal area, later expanded towards vagina. Patient was consulted by II level general surgeons several times. She was diagnosed with a perineal abscess and treated with Ilon Abszess-Salbe liniment, baths and compresses – without improving.

In our hospital she was examined by gynecologists. The patient did not reveal any risk factors for syphilis infection, but nevertheless due to the clinically suspected syphilis the patient was referred for dermatovenerologist’s consultation. After detailed physical examination dermatovenerologist also suspected that the lesion is a syphilitic hard chancre (Fig. 1). Regardless of the negative prenatal syphilis screening result, at the time of the visit, syphilis tests were repeated. The results were in line with the primary genital syphilis diagnosis: treponema pallidum hemagglutination assay (TPHA) was positive (4+), rapid plasma reagin (RPR) – positive with a title of 1:32, Treponemal enzyme immunoassay 22.79 (negative < 1.0). The human immunodeficiency virus (HIV) test was negative. After confirming the diagnosis an immediate antibiotic therapy was started with benzathine penicillin G, 3 doses of 2.4 million units intramuscular injection (IM), each at 1-week intervals according to the stage of syphilis, in line with CDC guidelines. During the last administration of antibiotic, the chancre and the pain were reduced (Fig. 2). At 32+1 weeks of gestation the patient arrived with the renewed complaints – pain and soft chancre in the perineal area. RPR was found positive with a title of 1:8 (Fig. 3). Following the results, an identical course of antibiotics was administered.

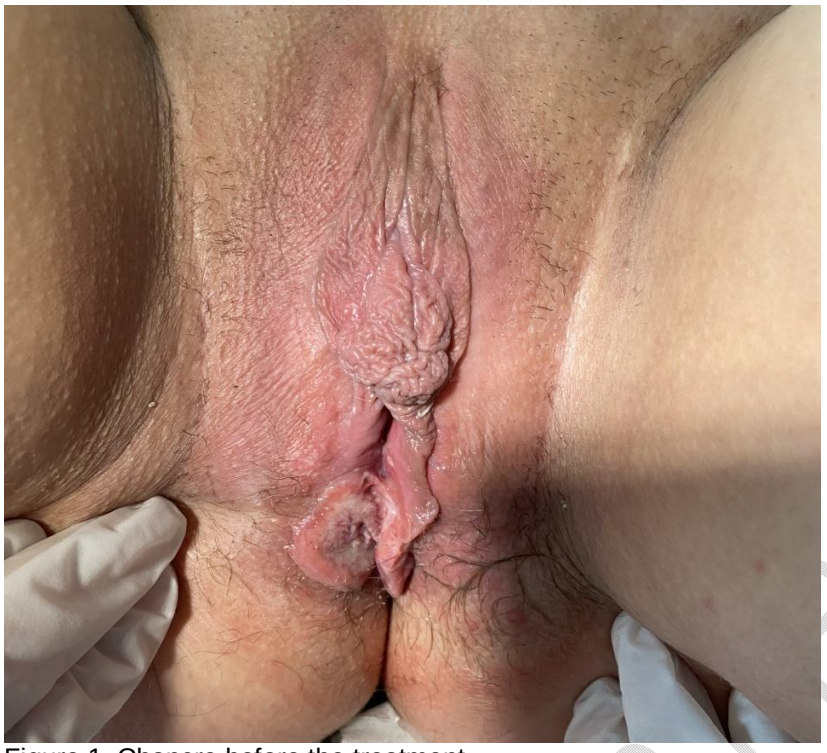

Figure 1. Chancre before the treatment

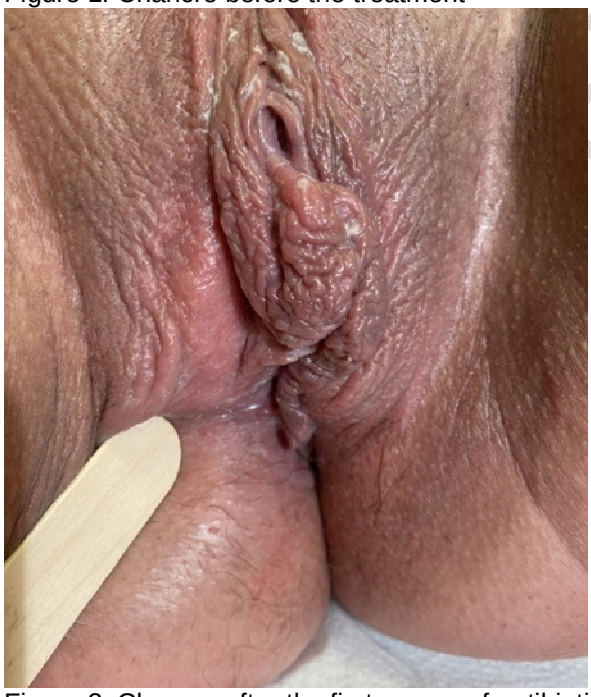

Figure 2. Chancre after the first course of antibiotics.

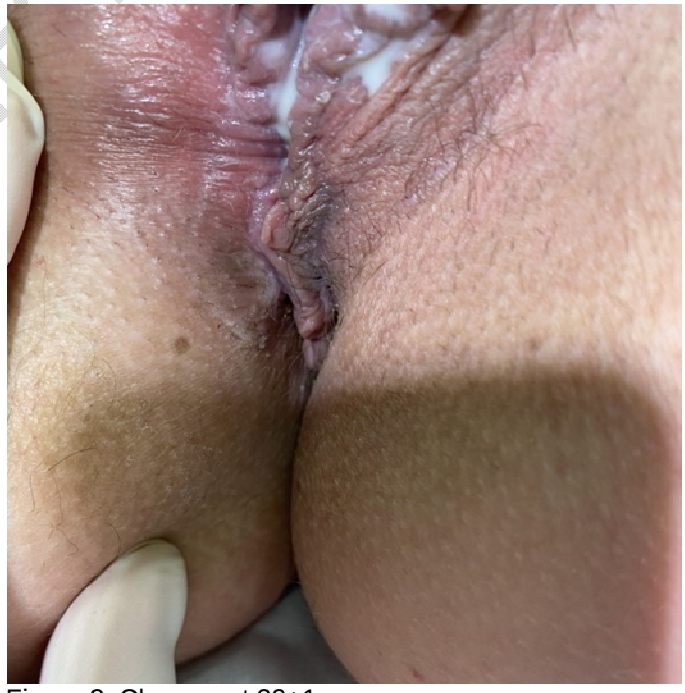

Figure 3. Chancre at 32+1.

Fetal ultrasound was performed regularly during the treatment and after. No fetal abnormalities were detected. At 41+2 gestation weeks patient was referred to our hospital for delivery. Due to an obstetric dystocia, an emergency caesarean section was performed. The neonate was born without the signs of congenital syphilis.

3. DISCUSSION

Screening and treatment early in pregnancy is associated with decreased incidence of adverse outcomes. [12] It is proved that a cost effective strategy is the first pregnancy trimester women screening for syphilis. [3][5] However, we have to bear in mind, that the *T.pallidum* has a long latent period during which patients have no signs or symptoms, but can remain infectious. [10] The average time between acquisition of syphilis and the start of the first symptoms is 21 day, but can range from 10 to 90 days. [13] That is why health care providers must interpret prenatal screening results carefully. It is possible that women who screen negative for syphilis become positive later in pregnancy, either because they become infected with syphilis later, or because their infection was too recent for a detectable antibody response to have been mounted at the time of the first screen. [5] We presume, that one of these two events could have been the reason why the first prenatal syphilis test result for our patient was negative. Thus, we strongly recommend carefully interpret prenatal testing results, because it might not always be correctly negative. In addition we support the idea of addition syphilis screening during pregnancy, as current rates suggest that screening for syphilis should be performed at the first prenatal care visit and not once, but twice during the third trimester. [3]

In terms of the infection, infected individuals typically follow a disease course divided into primary, secondary, latent and tertiary stages over a period of ≥10 years. [5] Patients with primary syphilis present with a single chancre (which size may variate from several millimeters to 2-3 cm) or multiple lesions on the genitals or other body sites involved in sexual contact and regional lymphadenopathy ~3 weeks post-infection. These are typically painless and resolve spontaneously in 3 to 6 weeks. [13] However, clinical manifestations might differ from those described as typical and despite possible spontaneous chancre resolution, treatment should be administered as soon as possible, as the best neonatal outcomes are seen when treatment is initiated >30 days before delivery. [3] The represented case demonstrates that chancres also might be atypically painful and reoccur even after treatment. We tend to think, that in this case reinfection occurred due to the repeated sexual intercourse or contact with an infected person, because usually penicillin is extremely effective in treating early syphilis. [14] Unfortunately, we encountered some limitations trying to prove this idea, as there were no medical records concerning syphilis screening of the patient's partner and we were not able to contact and gather this information directly from a patient after her discharge from the hospital.

4. CONCLUSION

We presented a case report of the patient who was screened for syphilis in the first trimester and the test was negative. Following this result physicians immediately ruled out the possibility of syphilis diagnosis although the lesion may have resembled a chancre. For this reason, in case when the diagnosis is not clear and clinical signs suggest syphilis, we highlight the importance of repeated testing for syphilis, even if previously certain test was negative.

In this case, patient had a single genital ulcer, but it was atypically painful and reocurred even after treatment with penicillin. Reinfection might have happened due to the repeated sexual intercourse with an infected partner. Thus, we recommend to gather an information about sexual partner or partners and if possible perform their screening and treatment if infected. Though the chancre recurred, MTCT did not happen and we strongly assume that antibiotic therapy was effective at least in preventing congenital syphilis.

Congenital syphilis is still a big healthcare problem worldwide. As more and more emphasis is placed on new pathogens and diseases, old but well-known diseases are forgotten, especially during the last two years of COVID-19 pandemic. Despite relatively clear clinical signs and easy laboratory diagnosis, it took time from the onset of the disease to the correct diagnosis. Therefore, with this case we want to emphasize the pathogenesis of syphilis, the significance to not blindly rule out the diagnosis based only on the prenatal screening results and the importance

of sexual partners' screening and treatment in order to shorten the chain of transmissibility and avoid recurrent cases.

Ethical Approval:

As per international standard or university standard written ethical approval has been collected and preserved by the author(s).

CONSENT

All authors declare that written informed consent was obtained from the patient for publication of this case report and accompanying images.

REFERENCES

1. Pinchera B, Viceconte G, Buonomo AR, Zappulo E, Mercinelli S, Moriello NS, et al. Epidemiological and clinical features of syphilis in the 21st century: A seven-year observational retrospective study of outpatients. Clin Epidemiol Glob Health. 2022;16:101100. DOI: 10.1016/j.cegh.2022.101100
2. World Health Organization. STIs in 2022: emerging and re-emerging outbreaks. 2022. Accessed 16 October 2022. Available: https://www.who.int/news/item/02-09-2022-stis-in-2022-emerging-and-re-emerging-outbreaks
3. Rac MWF, Stafford IA, Eppes CS. Congenital syphilis: A contemporary update on an ancient disease. Prenat Diagn. 2020;40(13):1703–14. DOI: 10.1002/pd.5728
4. World Health Organization. Data on syphilis. 2020. Accessed 16 October 2022. Available: https://www.who.int/data/gho/data/themes/topics/topic-details/GHO/data-on-syphilis
5. Genc M, Ledger WJ. Syphilis in pregnancy. Sex Transm Infect. 2000;76(2):73–9. DOI: 10.1136/sti.76.2.73
6. Workowski KA, Bachmann LH, Chan PA, Johnston CM, Muzny CA, Park I, et al. Sexually Transmitted Infections Treatment Guidelines, 2021. CDC. Accessed 16 October 2022. Available: https://www.cdc.gov/std/treatment-guidelines/STI-Guidelines-2021.pdf
7. Ukrečiamųjų ligų ir AIDS centras. Sifilis - ULAC. Accessed 5 October 2021. Available: http://www.ulac.lt/ligos/S/sifilis
8. Ukrečiamųjų ligų ir AIDS centras. Nėščiųjų patikros metu išaiškinti 63 sifilio atvejai - ULAC. Accessed 6 October 2021. Available: http://www.ulac.lt/naujienos/pranesimai-spaudai/nesciuju-patikros-metu-isaiskinti-63-sifilio-atvejai
9. Centers for Disease Control and Prevention. Syphilis. 2022. Accessed 16 October 2022. Available: https://www.cdc.gov/nchhstp/pregnancy/effects/syphilis.html
10. Peeling RW, Mabey D, Kamb ML, Chen XS, Radolf JD, Benzaken AS. Syphilis. Nat Rev Dis Primer. 2017;12;3:17073. DOI: 10.1038/nrdp.2017.73
11. Centers for Disease Control and Prevention. Congenital Syphilis - STI Treatment Guidelines. 2022. Accessed 16 October 2022. Available from: https://www.cdc.gov/std/treatment-guidelines/congenital-syphilis.htm
12. Adhikari EH. Syphilis in Pregnancy. Obstet Gynecol. 2020;135(5):1121–35. DOI: 10.1097/AOG.0000000000003788
13. Centers for Disease Control and Prevention. STD Facts - Syphilis (Detailed). 2021. Accessed 5 October 2021. Available from: https://www.cdc.gov/std/syphilis/stdfact-syphilis-detailed.htm
14. Wu H, Qi M, Wang H, Liu Q, Liu Y. Efficacy of minocycline in the treatment of early syphilis. Int J STD AIDS. 2021;32(7):648–53. DOI: 10.1177/0956462420984695