

Successful treatment of brucellosis in a twin pregnancy

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Summary

We diagnosed active brucellosis infection at the tenth week of gestation in a woman with a twin pregnancy. Antimicrobial therapy with rifampicin was started at 900 mg/day and continued for six weeks. Healthy twins were delivered at the 38th week of gestation. Early and adequate treatment of maternal brucella infection might have prevented the early detrimental consequences of the disease.

Key words: Brucellosis; Twin pregnancy; Prenatal diagnosis; Early treatment.

Introduction

Brucellosis is very common in animals, but its presence in humans, especially in pregnancy is of special interest. The incidence of spontaneous abortion, intrauterine death and poor perinatal outcome among women with active brucellosis is higher compared to healthy pregnant women [1]. Here, we present the case of a woman with a twin pregnancy successfully treated with rifampicin in early pregnancy who delivered healthy twins.

Case History

A 30-year-old, gravida 3, para 2, pregnant woman was admitted to the Obstetrics and Gynecology Department of the Government Hospital of Ahlat due to symptoms like back pain, fatigue and slight arthralgia. There was no finding on physical examination. At ultrasonographic evaluation, a twin pregnancy in the tenth week of gestation was established. Due to the endemic existence of brucellosis in our area, brucella standard tube agglutination (STA) and Rose-Bengal tests (RB) were performed. The RB test was positive and the STA test was also positive with a titer $\geq 1/200$ (Rose Bengal Brucella Antigen: Cenogenics Corporation Morganville NJ USA 07751, LB-06128-01, STA: Febril Test-BA, Brucella Abortus Bacterial Suspension Gökhan Lab. San. Ve Tic AŞ. İzmir-TURKEY). Blood culture of the mother yielded *Brucella abortus*.

The possible underlying detrimental consequences that can happen due to brucellosis infection in pregnancy were elucidated in detail to the parents and they chose continuation of the pregnancy. Consequently, we started antimicrobial therapy with 900 mg rifampicin/day, with an oral dose of 300 mg given every eight hours for six weeks.

During the antimicrobial therapy at the 14th and 17th weeks of pregnancy the patient came to our clinic for pregnancy controls; clinical observations, physical examinations and ultrasonographic evaluations were all normal.

The patient did not come to our clinic between the 17th and 37th weeks of her pregnancy. At the 37th week of gestation, STA, RB, *Brucella abortus* IgG, *Brucella abortus* IgM and blood culture tests were repeated to evaluate the success of our treatment. All tests were negative, except for RB. At the 38th week of pregnancy, since the babies were in breech presentation they

were delivered by cesarean section. The fetuses were 3,120 g and 2,920 g males, both with Apgar scores of 8 and 9 at one and five minutes, respectively. During delivery, we obtained cord blood for STA, RB, *Brucella abortus* IgG, *Brucella abortus* IgM tests and for blood cultures from both babies which were all negative.

The mother and the twins were discharged from hospital in good condition and both babies were physically and neurologically normal at 6-month follow-up.

Discussion

Brucellosis is an infection caused by gram-negative coccobacilli of the genus *Brucella*. *B. melitensis*, *B. abortus*, *B. suis* and *B. canis* are the most known *Brucella* species, which can be considered to be of importance to human health [2]. Transmission to humans is usually possible through contact with contaminated material, such as milk and cheese. Fever, chills, sweating, low back pain, fatigue and arthralgia are usually the main symptoms [3]. In our case the mode of transmission was determined to be cheese made with raw sheep milk, eaten by the mother before her pregnancy. Symptoms of the disease began to appear thereafter.

For diagnosis of brucellosis, suspicion can be the keyword, especially for the symptoms of the disease. In the diagnosis of brucellosis STA, RB, Coomb's test, *Brucella* IgM, *Brucella* IgG and blood culture are useful methods. In the STA test, a titer $\geq 1:160$ is considered significant for ongoing infection [2]. Therefore in our case diagnosis was active, ongoing brucellosis infection.

In the treatment of brucellosis, a combination of 200 mg/day doxycycline plus 900 mg/day rifampicin is considered the regimen of choice. The other options for treatment can be listed as, quinolones, azithromycin and streptomycin [2]. However, in pregnancy treatment options are generally limited to rifampicin, gentamicin, third generation cephalosporins and trimethoprim-sulfamethoxazole. Rifampicin is often reported to be successful in the treatment of brucellosis, at a dosage of 900 mg/day administered for six weeks [2, 3]. This treatment regimen was successful in our case of a twin pregnancy. A diagnosis determined in early pregnancy seems to be

the most important point in the prosperity of the treatment. In a twin pregnancy, monotherapy with rifampicin can be considered sufficient for treatment of brucellosis, with no signs of relapse six months after therapy. The hindrances for treatment of brucellosis in pregnancy can be therapy taking at least six weeks and the possible adverse effects of antimicrobial agents [4]. However, monotherapy with rifampicin appears to be safe for a twin pregnancy and not so difficult for the patient to tolerate the long duration of therapy.

Brucellosis infection can cause abortion, chorioamnionitis, preterm rupture of membranes and fetal death during pregnancy [3, 5]. It can be considered that, with appropriate and early therapy, brucellosis infection can be treated without complications.

To our knowledge this is the first case of a twin pregnancy with an early diagnosis and successful treatment of brucellosis. Brucellosis is an important problem for public health in some parts of the world. Early treatment of brucellosis in pregnancy is very important to prevent the possible detrimental consequences of infection, and

900 mg/day of rifampicin administered for six weeks can be considered the drug of choice for treating brucellosis in a twin pregnancy.

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