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Listeriosis in pregnancy

Listeriosis en el embarazo

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SUMMARY

We present 4 sporadic cases of listeriosis during pregnancy. In all of these cases the newborn was alive. The commonest symptom was fever. Each case is discussed and the medical literature is reviewed.

KEYWORDS: *Listeria monocytogenes*, listeriosis, pregnancy. (Source MeSH NLM).

RESUMEN

Presentamos 4 casos esporádicos de Listeriosis y embarazo. En todos ellos se obtuvo un recién nacido vivo. El síntoma común fue fiebre. Discutimos cada caso en particular y revisamos la literatura.

PALABRAS CLAVE: *Listeria monocytogenes*, listeriosis, embarazo (Fuente DeCS BIREME).

INTRODUCTION

Listeriosis is a rare but severe foodborne infection disease produced by *Listeria monocytogenes*, named after Lord Joseph Lister (1). Listeria is a gram positive rod, facultatively anaerobic, flagellated, which most important pathogenic characteristic is an intracellular life cycle (2).

According to the Morbidity and Mortality Weekly Report, there were 1651 cases in the USA between 2009 and 2011. The incidence was 3/100,000 in pregnant women and 1.3/100,000 in adults with neoplasia or immunosuppression (3).

Listeriosis during pregnancy has been associated with unpasteurized dairy products like Mexican-style cheese or contamination post pasteurization. Other contamination sources have been reported as cantaloupe, hot dogs, sushi rolls, and meat pates. Most cases are sporadic and others are associated with an outbreak (1,3,4,5).

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Clinical diagnosis is a challenge. According to the largest series revised from Mylonakis et al (4), from 191 cases, most of them had fever (65%), flu like symptoms (32%), abdominal or back pain (21.5%), headache (10%), vomiting/diarrhea (7%), minor complaints could be myalgia and sore throat but there are asymptomatic patients in 29%. The effect over the fetus is serious; the infection produces miscarriages, preterm births, impaired fetal growth and fetal death.

The aim of this report was to describe the clinical picture, treatment and maternal outcome of Listeriosis in our Hospital and review of literature about this rare disease.

PRESENTATION OF CASES

Case 1

A 22 year old woman G1 P0 presented at the emergency room with fever the past 4 days and sore throat, with 32.4 weeks of gestational age. She was hospitalized because of fever, which resolved spontaneously and left hospital one day before the new admission.

Laboratory tests other than anemia were unremarkable: CBC, urine culture, agglutination for Brucella and Salmonella, amniotic fluid analysis. More than one Biophysical Profile was normal.

After 4 days a blood culture was informed as Listeria spp and ampicillin was started at high doses, 12 gr/d. Fever resolved after three days. After 16 days of treatment, she was discharged at 35.2 weeks of gestation.

She had spontaneous labor and vaginal delivery at 39 weeks of gestation. The male newbornweight was 3,150 g and had an Apgar score of 9-10 (1 min and 5 min, respectively). No pathological study of placenta was done.

Case 2

A 20 year old woman was admitted with threat of preterm labor at 35.1 weeks with two days of chills. The baby was in good conditions.

Few hours later she developed fever, leukocytosis with a white blood cell count of 21,600, contractions and a biophysical profile with oligohydramnios and breath movements absent. She refused amniocentesis. Ceftriaxone and Clindamycin were started and a cesarean section was performed. She delivered a healthy 2,690 g, boy with Apgar score of 9-10 (at 1 and 5 minutes respectively), at 40 weeks of gestation.

Amniotic fluid was meconial and membranes were yellowish and dark and close to the uterus wall. Purulent material was found between the chorion and amnios. Fluid culture grew Listeria monocytogenes. Pathological examination of the placenta showed villitis and focal funnisitis.

The patient was discharged three days after surgery in good conditions.

Case 3

A 31 year old primigravida was admitted at 34.3 weeks of gestational age with a twin pregnancy, fever, lumbar pain, sporadic contractions and decreased fetal movements. Her physical exam was unremarkable except for fever, blood work and biophysical profiles were normal. She received antibiotics and corticoids. Two days later she became afebrile, but one of the twins developed bradycardia (108-112 beats/min). A cesarean section was performed and two healthy neonates were born. Their birth weights were 2,255 g and 2,175 g, with Apgar scores of 8-9 and 9-10, respectively. The placenta was monochorionic biamniotic. The membrane culture grew *Listeria spp*. Histological examination of the placenta revealed: infarctions, villitis and intervillositis.

Case 4

A 34 year old woman, G2 P0010, with 36.1 weeks of gestational age presented to the Emergency room with fever, flu-like symptoms and sporadic uterine contractions. Ceftriaxone was started but the fever persisted for 4 days. She underwent a cesarean section because of leucopenia, fever and absent variability of the fetal heart rate. A healthy male newborn was delivered with an Apgar score of 8-10. His birth weight was 2,675 g.

The blood culture was positive for *Listeria monocytogenes* and the patient was treated with ampiciline 12 g/d for fourteen days.

On pathology the placenta showed infarctions, villitis and perivillositis.

DISCUSSION

Clinical Presentation

Four sporadic cases of maternal listeriosis are presented, managed in the Obstetric Service of Hospital Nacional Cayetano Heredia between 2009 and 2013, all of them with excellent maternal outcome and no fetal deaths.

Our 4 patients came to the hospital with high fever, as in the largest series of cases reviewed by Mylonakis (4). Cases 1 and 4 had upper respiratory symptoms. Case 2 presented a preterm delivery threat and case 3 had urinary symptoms, vomiting and back pain. All of these symptoms have been described in the medical literature (4,6,7). Case 3, a twin pregnancy, also had a discordant infection, as has been described (1). However, there could be other clinical presentation as meningoencephalitis (7), placental abruption (8), and postpartum heart block (9).

The blood culture was positive in two cases of our cases, while the other two cultures were positive in the membranes. The laters had a faster course towards the end of the pregnancy. *Listeria monocytogenes* was identified in 2 cases and in the other 2 *Listeria spp* was reported. We could not do a serotype analysis, but around the world, the predominant serotypes tend to be similar: 1/2a, 1/2b and 4b (1,7,10).

The source of contamination and the incubation period are unknown but the later is estimated between three weeks and six weeks (1,11).

We think that there are two types of clinical picture; one of them looks like a febrile syndrome with positive blood culture and the other as a chorioamnionitis picture with fetal distress. The last one needs an immediate delivery and the former needs to be treated for a long time in order to maintain the pregnancy.

Treatment

The antibiotic treatment is based on in vitro and in vivo experimental studies, series of cases experience and historical cohorts' studies, but not in clinical randomized studies (12).

The antibiotic needs to penetrate the host cell and maintain high intracellular levels. The antibiotic must joint the 3-protein of listeria in order to kill the bacterium. Beside the antibiotic must cross the placenta in high doses (2).

Two patients, cases 1 and 4, received high dose ampicillin (12 g/day) for sixteen and fourteen days, respectively. Ampicillin is the first antibiotic choice around the world. In England Amoxicillin is the most used antibiotic (2,12). Case 1 was a challenge because we treated and made a follow up until term. Fortunately we did not have cases in the first trimester, Chan et al (13), prescribed Ampicillin for 4 weeks in one case of first trimester.

In cases 2 and 3 the result of the Listeria culture was positive after the delivery. The patient of case 2 received ceftriaxone and clindamycin as in choriamnionitis and the patient of case 3 received ceftriaxone and cephalexin because for prominent urinary symptoms. These patients went to the puerperal control in healthy state 11 days post delivery. The elimination of the septic focus and the patient's cellular immunity recovery can explain their good outcome (6).

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JDH, JSP, CMV, JCG: Participated in the description of the cases, bibliographic review and revision of the final version of the report.

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