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Toxoplasmosis in Pregnancy, a Rare Clinical Manifestation: A Case Report

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Abstract

Introduction: When a mother is contaminated with the parasitic protozoan *Toxoplasma gondii* as a primary infection in pregnancy, the golden test to confirm fetus infection is polymerase chain reaction (PCR), for the parasite DNA in amniotic fluid that may reach fetus and cause congenital toxoplasmosis. Toxoplasmosis sometimes appears with very rare presentations that should be considered and treated to save mother and her baby.
Case Presentation: A 28-year-old pregnant mother was referred to the perinatology clinic of Shariati hospital, Tehran, Iran, for the diagnosis of her fetus problem. She was a rare case of congenital toxoplasmosis.
Conclusions: Diagnosis of toxoplasmosis in pregnancy is based on seroconversion of antibodies; based on many studies in the literature, the best method to confirm fetus is PCR for *Toxoplasma gondii* DNA in amniotic fluid.

Keywords: Congenital Toxoplasmosis, Polymerase Chain Reaction, Pregnancy

1. Introduction

When a mother is contaminated with the parasitic protozoan *Toxoplasma gondii* as a primary infection in pregnancy, the pathogen may reach fetus and cause congenital toxoplasmosis (1, 2). Congenital toxoplasmosis sometimes appears with very rare clinical manifestations that these rare presentations may cause misdiagnosis and the current case was a rare one. Acute infection in mother is usually asymptomatic (3). There is a direct relationship between the age of gestation and the risk of fetus contamination (3, 4). The rate of nervous system defect in fetus decreases by the increase in the gestational age (5-7). The golden test to confirm fetus infection is polymerase chain reaction (PCR) for *Toxoplasma gondii* DNA in amniotic fluid (8, 9). Prenatal treatment is justified to reduce the risk of serious neurological sequels (8).

2. Case Presentation

A 28-year-old pregnant mother was referred to perinatology clinic of Shariati hospital, Tehran, Iran, based on her sonographic diagnosis of polyhydramnious, pleural effusion, ascites, and mild ventriculomegaly in 32 weeks of pregnancy (Figures 1 - 3).She was referred for fetal echo, which was normal. Then, the mother was checked for TORCH antibody, and simultaneously amniocentesis was performed for karyotyping and TORCH PCR. The results of serological tests were negative, but *Toxoplasma* PCR was positive; therefore, anti-toxoplasmosis therapy was immediately started. After 3 weeks, sonographic control reported that effusion diminished, and finally the pregnancy was terminated at week 39 and baby was healthy. The therapy was continued for the baby and the control tests showed that the complication improved in the baby.



Figure 1. Ascites in Sonographic Image in Congenital Toxoplasmosis (Reference: sonoworld.com/TheFetus/Case)

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Figure 2. Pleural Effusion in Sonoghraphic Image in Congenital Toxoplasmosis

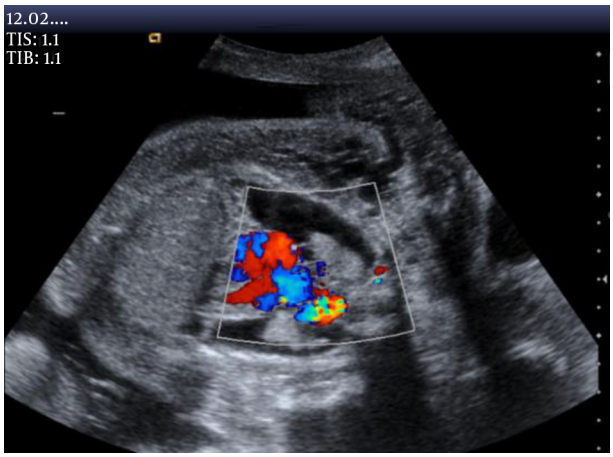


Figure 3. Pleural Effusion in Sonoghraphic Image in Congenital Toxoplasmosis

3. Discussion

The important origins of this infection are ingestion of undercooked or cured meat or meat products, soil-contaminated vegetables (1), or contaminated dirty drinking water (2). The incidence of maternal infection ranges from 1 to 8 per 1000 susceptible pregnancies (3). Maternal infection is usually asymptomatic, but nonspecific symptoms may be observed. The most serious consequence of maternal infection is transmission to the fetus circulation (3).Vertical transmission to fetus increases with gestational age increase (4). But, the risks of intracranial lesions and serious neurodevelopmental sequel decrease with gestational age increase (5). In rare cases, fetal infection leads to stillbirth or neonatal death (6). Abnormal findings involving areas other than the brain (eg, ascites) are less specific for toxoplasmosis. Calcification of the liver, placentomegaly, and fluid accumulation in different spaces such as fetal abdomen and pericardium was also observed (7).

Seroconversion observed after 2 measurements of *Toxoplasma gondii* IgG or IgM in a minimum of 14 days and confirmed the infection (8). PCR is the most valuable method to detect *Toxoplasma* DNA in amniotic fluid for fetal contamination diagnosis (9). Sonography of an infected fetus may show ventricular dilatation or intracranial calcification after 21 weeks of gestation.

It is not suggested to perform routine universal prenatal screening for toxoplasmosis in pregnancy, but prenatal serologic investigations or sometimes PCR method should be used as an indication to diagnose infection in females with symptoms of toxoplasmosis or at high risk of recent exposure.

For females planning a pregnancy or the pregnant ones, it is recommended to avoid eating raw or undercooked meat (10).

Mothers should use clean filtrated water and be aware of the sources of infection.

Antenatal anti-toxoplasmosis therapy is usually the best option in cases that are infected in pregnancy period. It is preferred to treat them with pyrimethamine and sulfadiazine (11).

3.1. Conclusion

Diagnosis of maternal toxoplasmosis during pregnancy is based on seroconversion in pregnancy, and anti-*Toxoplasma gondii* IgG or IgM was detected and changed to positive. Moreover, amniotic fluid survey for *Toxoplasma gondii* specific DNA by PCR method is a valuable diagnostic test to detect fetal disease. Therefore, it is better to use PCR method, and start treatment as soon as possible.

For females planning a pregnancy or the pregnant ones, it is recommended to avoid risky behaviors such as eating raw or undercooked meat. Prenatal treatment is usually offered to pregnant mothers diagnosed with toxoplasmosis.

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