

Background

Toxoplasmosis is a parasitic disease caused by *Toxoplasma gondii*. Most of immunocompetent people who contract the disease are asymptomatic or have nonspecific flulike symptoms such as fever, headache, muscle pain, and lymphadenopathy.

The infection can be contracted by ingestion of undercooked meat, eating unwashed fruits or vegetables, drinking contaminated water and by contact with cats faeces. In pregnant women the parasite can be transmitted across placenta to the fetus causing congenital toxoplasmosis.

Case Report

A 19-year-old P0 was under Consultant Led Care in Preterm Prevention Clinic due to previous pregnancy loss at 20 weeks. Her booking bloods were unremarkable. She was on therapeutic enoxaparin due to bilateral Pulmonary Embolism from 13 weeks of gestation.

Scan at 28 weeks at Fetal Medicine Clinic identified SGA <3rd Centile. Fetal dopplers and AFI were normal. She had congenital viral infection screen which shown positive for IgM and IgG Toxoplasmosis antibodies. Toxoplasmosis avidity result was suggestive of acute or recently acquired infection. The booking bloods were confirmed to be negative for Toxoplasmosis. Patient only symptom was an enlarged cervical lymph node. Patient confirmed having a cat at home.

Maternal Toxoplasmosis Serology:	
IgM - Strong Positive	IgG Avidity - Borderline
IgG - Weak Positive	IgG Dye test – 123IU/ml

She had counselling at local FM clinic and weekly follow ups, other than SGA no other USS signs of toxoplasmosis were noted and she was referred to tertiary FM clinic.

She had a review in a tertiary centre at 32 weeks and had amniocentesis which shown negative Toxoplasmosis serology result. Ultrasound scan shown echogenicity around the cerebral cortex and the inner skull especially posteriorly, with reduced cortex volume. MRI of fetal brain was normal. She was commenced on Spiramycin until the end of pregnancy as per Virology advice. Patient had twice weekly scans until the end of pregnancy which consistently shown SGA with static growth. Decision was made for an elective Cesarean Section at 34 weeks.

Baby was born in a good condition on 1.2 centile of weight. The baby did not show any dysmorphic features or systemic signs of Toxoplasmosis. Serology showed no active infection, IgM Negative, PCR negative. IgG was positive, likely due to transplacental transfer. Hearing and eye tests, brain MRI and scan of abdomen were normal.

Discussion

Toxoplasmosis in pregnancy is a concern due to a possibility of vertical transmission to the fetus. The transmission risk is greater in 3rd trimester, however in 1st trimester the risk of abnormalities is higher.

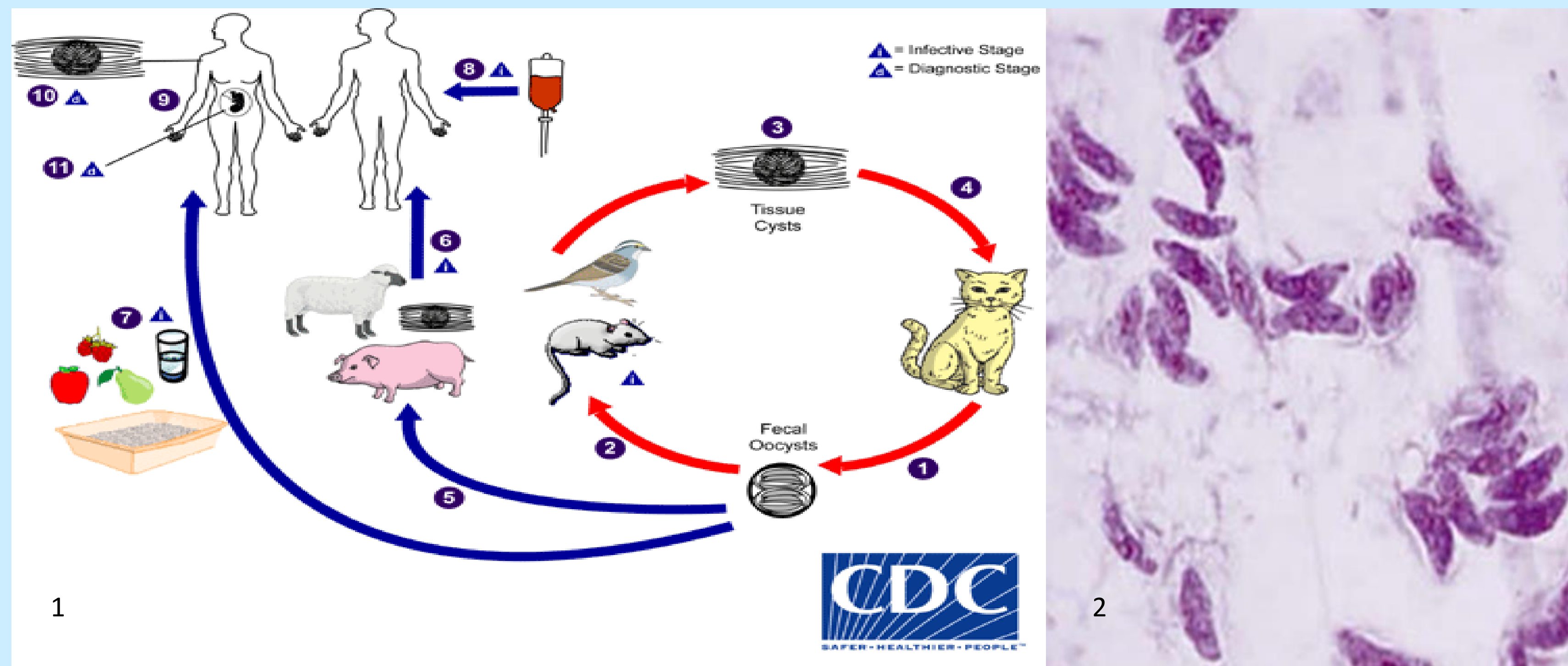
Differential diagnosis should include other congenital infections such as CMV, Rubella, Lymphocytic choriomeningitis virus, Varicella, Herpes simplex virus.

There are no pathognomonic ultrasound findings to confirm Toxoplasmosis. However, studies show that some features can be seen in toxoplasmosis such as: ventriculomegaly, intracranial calcifications, increased placental thickness, hepatomegaly, ascites, severe growth restriction, hydrops fetalis, pericardial/pleural effusion, polyhydramnios. These findings should warrant further testing.

Diagnostics in toxoplasmosis remains a challenge, due to difficulty in determination of the timing of infection particularly if mother is positive for both IgM and IgG antibodies. The IgG avidity assay is more beneficial as low result suggest recent infection and high or borderline result shows past infection. Early diagnosis of congenital disease is possible by detection of Toxoplasmosis DNA in amniotic fluid with use of PCR method.

Treatment options include Spiramycin for prevention of intrauterine infection or combined Pyrimethamine, Sulfadiazine, Folinic acid as a treatment of progressing fetal infection.

In Neonates congenital toxoplasmosis can be a cause of severe neurological manifestations, blindness, hearing loss, seizures, endocrine abnormalities, learning disabilities. Babies born to toxoplasmosis positive mothers should have neonatal review.



Conclusion

In the case presented the patient acquired Toxoplasmosis in pregnancy. She was diagnosed in 3rd trimester; the results were suggestive of a recent infection. Antenatal and postnatal tests of the baby shown that the infection was not transmitted to the baby. Both mother and baby were well post-delivery.

This case is presented to increase the awareness about Toxoplasmosis infection in pregnancy as this infection can cause significant adverse outcomes in fetus and neonate. The later in pregnancy transmission occurs the less risk of fetal abnormalities, although the risk of transmission is higher towards the end of pregnancy. Some studies indicate that risk of transmission in 3rd trimester is as high as 60- 81%.

In United Kingdom Toxoplasmosis not a part of routine antenatal screening. During antenatal appointments patients should be instructed on types of food that should be avoided in pregnancy and to avoid contact with cats litter.

It is very important to identify patients in risk, such as those who are symptomatic, and those with high-risk ultrasound features, so that they can be offered appropriate testing. In the case presented severe SGA warranted the screening in line with Green top Guideline 31 advice.

Patients found to be positive for Toxoplasmosis should be reviewed by multidisciplinary team to ensure appropriate antenatal care, as well as treatment of the disease.

Babies of Toxoplasmosis positive mothers should have detailed examination postnatally and a follow up arranged to assess for long term sequela of infection.

References

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Pictures:

- 1 - <https://www.cdc.gov/parasites/toxoplasmosis/biology.html>
- 2 - <https://mykindofscience.com/2017/01/14/life-under-the-microscope-toxoplasma-gondii/>