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TEACHING FILES (GRAND ROUNDS)

IS IT CONGENITAL TOXOPLASMOSIS?

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Clinical Problem:
A 1 month old male child delivered by lower section cesarean section (LSCS) at 8 ½ months of gestation in view of meconium stained liquor with a birth weight of 2.09 kg was referred in view of a positive toxoplasma IgM (1.25 AU/ml). He had seizures from day 1 of life along with jaundice. There was no history of clay coloured stools. Other TORCH IgM were negative. Mother's TORCH titres showed Toxoplasma IgM to be 0.29 Au/ml and Toxoplasma IgG of 6.37 Au/ml along with positive titres for HSV IgG and Rubella IgG. On Day 14 of life, the child's ultrasound abdomen showed hepatomegaly and presence of gall bladder. Hemogram showed hemoglobin of 15.8 gm/dl, white cell count of 8000 cells/cumm, platelets of 172000 cells/cumm, bilirubin of 15 mg/dl (direct bilirubin 7.2 mg/dl) SGPT 37 IU/L and thyroid function tests were normal. On presentation to us, weight was 2.4 kg, head circumference was 32 cms and there was jaundice with a small anterior fontanelle. Other examination findings were normal.

Is it congenital toxoplasmosis and how to manage congenital toxoplasmosis?

Discussion:
Congenital toxoplasmosis is a condition where a pregnant woman gets infected with Toxoplasma gondii, either during pregnancy or just before it. This condition can cause various symptoms in the newborn, but in 75% of cases, there may not be any noticeable symptoms. The most common symptoms of congenital toxoplasmosis are chorioretinitis, intracranial calcifications and hydrocephalus, which together are known as the classic triad of the disease. The condition primarily affects the central nervous system of the newborn.[1,2] Severe congenital toxoplasmosis is characterised by microcephaly, hydrocephalus, cerebral calcifications, abnormal cerebrospinal fluid findings and fever.[2] During gestation, the diagnosis of CT can be made by detecting the parasite with Polymerase Chain reaction(PCR) in the amniotic fluid or fetal tissue samples.[1] It is important to diagnose congenital toxoplasmosis after birth in two specific situations. The first is when a child shows clinical signs of the disease within the first six months of life and there is no information available on the mother's antenatal serostatus, such as in the case of this patient. The second is when seroconversion is detected during pregnancy. During pregnancy, a mother's IgG antibodies can easily pass through the placenta barrier to provide immunity for the baby. However, during labor, there is a possibility of IgM and IgA antibodies to leak through the placenta and enter the newborn's bloodstream.[3] The persistence of Toxoplasma IgG in the child by 12 months of age is the gold standard for establishing a CT diagnosis in the postnatal period. However, in children less than 6 months of age, IgM immunosorbent agglutination assay (ISAGA) is regarded as the preferred method for detecting Toxoplasma.[1] The presence of Toxoplasma-specific IgA or IgM antibodies in the first week of life is considered a definite marker for CT.[4] Hence this patient is a case of congenital toxoplasmosis. Treatment for CT should be started as early as possible. It is a continuous treatment for 12 months and one of 3 protocols should be followed[5] Protocol 1 – pyrimethamine 1 mg/kg/day for initial 2 months followed by 0.5 mg/kg/day along with sulfadiazine 50 mg /kg twice a day and folinic acid. Protocol 2 - sulfadoxine 17.5 mg/kg once per week and pyrimethamine 0.875 mg/kg once per week along with folinic acid. Protocol 3 - Pyrimethamine and sulfadiazine as in Protocol 1 for the first two months to assess tolerance, followed by sulfadoxine-pyrithamine as in Protocol 2 for the remaining ten months. In addition to the drug therapy, clinical, serological and ophthalmological evaluations should be done every 3 months. The infant can be breastfed and should be given regular vaccinations. Spiramycin is not effective in cases where CT has already been established.[5]

Compliance with ethical standards
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Conflict of Interest: None

References:
1. Pomares C, Montoya JG. Laboratory Diagnosis of Congenital Toxoplasmosis. J Clin Microbiol. 2016/05/04 ed. 2016 Oct;54(10):2448-54.

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2. McAuley JB. Congenital Toxoplasmosis. J Pediatric Infect Dis Soc. 2014 Sep;3 Suppl 1(Suppl 1):S30-5.
3. Pinon JM, Dumon H, Chemla C, Franck J, Petersen E, Lebech M, et al. Strategy for diagnosis of congenital toxoplasmosis: evaluation of methods comparing mothers and newborns and standard methods for postnatal detection of immunoglobulin G, M and A antibodies. J Clin Microbiol. 2001 Jun;39(6):2267-71.
4. Paul M. Serological Screening of Newborns for Toxoplasma Gondii-Specific IgA and IgM Antibodies in Peripheral Blood Collected on Filter-Papers. EJIFCC. 2007 Oct 4;18(3):91-114.
5. Peyron F, L'ollivier C, Mandelbrot L, Wallon M, Piarroux R, Kieffer F, et al. Maternal and Congenital Toxoplasmosis: Diagnosis and Treatment Recommendations of a French Multidisciplinary Working Group. Pathogens. 2019 Feb 18;8(1):24.