

TEACHING FILE

Grand Rounds

Ira Shah

RECURRENT DIARRHEA WITH FAILURE TO THRIVE

Clinical Problem: A 15 month old boy born of non consanguineous marriage presented with recurrent diarrhea and failure to thrive since 1 month of age. The stools are semi-loose with mucus 8-10 times per day with 2 episodes per month. He was hospitalized for similar complaints at 6 and 7 months of age. He was a full term normal delivery with a birth weight of 1.9 kg. An elder sib had died 7 months of age due to recurrent diarrhea. He had delayed gross motor milestones and is only able to sit with support. The child was on exclusive breast feeds till 8 months of age following which weaning food was started. On examination, he was malnourished with weight of 4.75 kg (<5th centile) and height of 62 cm (<5th centile). He had pallor with hyperpigmented hair and hepatomegaly. Other systemic examination was normal. Investigations showed leucocytosis with anemia (Hemoglobin = 9.3 gm/dl, WBC = 19,600/cumm with 38 percent polymorphs, 61 percent lymphocytes and 1 percent monocyte and ESR of 10 mm at end of 1 hour) Venous blood gas, serum electrolytes, renal function tests were normal. Total proteins were 5.0 gm% with serum albumin of 2.8 mg %. Stool examination was normal. Stool for cryptosporidium was negative. Stool pH was 6.0 with reducing substance negative. HIV ELISA was negative, serum immunoglobulins were normal (IgA = 163 mg/dl, IgG = 1123 mg/dl, IgM = 62 mg/dl). He was treated with IV antibiotics and chicken broth.

How should one investigate this child?

Expert Opinion : This child has chronic diarrhea. A differential diagnosis of infections (amoebiasis, giardiasis), Celiac disease, cystic fibrosis, congenital immunodeficiencies, liver disease and protein losing enteropathy should be considered in this child. Thus the child should be investigated with anti gliadin antibodies, intestinal biopsy, sweat chlorides, liver function tests, lymphocyte subset analysis and albumin scan should be considered. Since diarrhea started at one month of age, celiac disease seems unlikely and since albumin: globulin ratio is maintained, protein losing enteropathy may be unlikely. The low albumin may be due to malabsorption.

Since an elder child has died due to the same problems, one must rule out a genetic problem such as cystic fibrosis and immunodeficiency. The serum immunoglobulins are normal and the child has an onset at one month of age, hence a problem in T cell immunity should be ruled out. Since the absolute lymphocyte count is normal, T cell defects also seem

less likely. In this child, lymphocyte subsets were normal, liver function tests were normal. Sweat chlorides were > 60 suggestive of a diagnosis of cystic fibrosis..

DOI No. : 10.7199/ped.
oncall.2013.61

E-published : October 2013

**BILIARY ATRESIA**

Clinical Problem : A 5 months old girl presented with jaundice, high coloured urine and clay coloured stools since birth. There was no fever or rash in mother during pregnancy. On examination, child was well grown, had jaundice with hepatomegaly with leafy borders and nodular liver. Investigations were suggestive of biliary atresia.

Should this child undergo Kasai surgery?

Expert Opinion : Success of Kasai's portoenterostomy depends on several factors namely:

- Age of surgery (success is better if operated by 8-12 weeks of age)
- Size of bile ducts at porta (sizes < 200 microns have poor prognosis)
- Skill of the surgeon
- Condition of the liver (an already cirrhotic liver has poor prognosis)

In this child, the age is already 20 weeks, the liver is already cirrhotic, thus Kasai portoenterostomy will not be successful. Infact, the treatment of choice in this child would be liver transplant..

DOI No. : 10.7199/ped.
oncall.2013.63

E-published : November 2013

**SUB CARINAL LYMPHADENOPATHY**

Clinical Problem : A 1½ years old presented with recurrent episodes of cough since 4 months of age. He was hospitalized 4 times. First admission – at 4 months of age for LRTI. Treated with antibiotics for 7 days. Echocardiography done at that time showed moderate size VSD. A repeat echocardiography done after 1 month showed spontaneous closure of VSD. Second admission at 9 months of age for bronchopneumonia. Treated with antibiotics, steroids and beta agonist nebulization. Third admission at 1 year of age for bronchitis. Treated with nebulization and steroids and antibiotics. Fourth admission at 1½ years of age and treated with antibiotics, magnesium sulfate and

nebulization. Chest X-Ray done was normal. He also had an episode of diarrhea 1 month ago. Patient was put on budesonide inhaler for past 2 months. There is history of asthma in great grandfather. Birth history, milestones are normal. He is immunized till date. He has a poor unbalanced diet predominantly on milk and biscuits. He was exclusively breast fed till 7 months and then weaning was started. On examination his weight is 8 kg and height is 73 cm. Other examination findings are normal.

Investigations showed:

- Chest X-Ray = Normal
- Hemoglobin = 8.9 gm/dl, WBC = 13,000/cumm (polymorphs 16 percent, lymphocytes = 83 percent, eosinophil = 1 percent, MCV 29.4 percent, MCHC = 57.5 ft, RDW = 18.5 percent, Reticulocyte = 0.4 percent, Platelets = 9,19,000/cumm.
- ESR = 5 mm at end of 1 hour
- Serum calcium = Normal
- Serum IgG, IgA, IgM = Normal
- HRCT Chest = Subcarinal lymphadenopathy (solitary) = 0.8 cm just below right bronchus without central caseation.
- Mantoux test = Negative
- S. IgE = Normal
- Gastric lavage for Acid Fast Bacilli = Negative
- HIV ELISA = Negative.

Does this child have asthma? Does this child have TB?

Expert Opinion: This child has had recurrent respiratory infections. First infection may be related to the VSD and increased pulmonary blood flow. Subsequent hospitalizations have all required nebulization and antibiotics. Thus it is not clear whether the child had a wheezing episode or infection. There is history of "asthma" in great grandfather. This is suggestive of breathlessness in a 4th generation relative where diagnosis may be even COPD, smoking, cardiac asthma or even tuberculosis. Thus there is no clear cut history of asthma in family. Also the child has been alright in between the episodes suggestive that it is not a persistent disease. Serum IgE is also normal not suggesting an allergic phenomenon. Thus asthma does not seem to be the problem in this child.

Regarding TB, it does not cause recurrent infections over a period of 1 year. The child has no contact with a patient with TB, his Mantoux test is negative and ESR is also normal. CT scan is suggestive of subcarinal single lymphnode. In TB, there would be multiple lymphnodes with central caseation which could be very well picked up on a CT scan. Thus tuberculosis is also unlikely in this child.

The child's diet is very poor and he is also underweight, has anemia and probably other micronutrient deficiency which can lead to recurrent infections. As explained 1st admission at 4 months may be due to VSD. Subsequent admissions have been after the weaning process has been initiated. Poor nutrition can lead to increased susceptibility to infections. In addition to respiratory infections, the child also had diarrhea suggestive of both GI and respiratory system affection. HIV, hypogammaglobulinemia have been excluded as the probable immunodeficiencies. Thus, most likely, all the problems in this child may be due to his nutritional status. A repeat CT reporting was suggestive of reactive lymph node most likely due to viral infection and CBC was also suggestive of lymphocytosis in this child again pointing to a recent viral infection. The child was treated with proper diet and micronutrient supplements. He has been asymptomatic ever since.

From: Medical Sciences Department, Pediatric Oncall, Mumbai.

Address for Correspondence Dr Ira Shah, 1/B Saguna, 271, B St Francis Road, Vile Parle (W), Mumbai 400056.

E-published: December 2013 . **Art#64**

10.7199/ped.oncall.2013.64

Quick Response Code

