TEACHING FILE

GRAND ROUNDS

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HEMATEMESIS AND MALENA

Case:- A 3 years old boy born of non consanguineous marriage presented with hematemesis and malena 1 year ago and again with malena 6 months ago for which child required blood transfusion. There is no jaundice or bleeding from any other site. On examination, he is pale. There is no jaundice and spleen is just palpable. Other systems are normal. Investigations are depicted in Table 1.

- Hemoglobin = 6.7 gm/ dl, WBC = 6400/ cumm, platelets = 1,27,000/ cumm
- Bilirubin = 0.8 mg/ dl, SGOT = 51 IU/ L, SGPT = 67 IU/ L, Total proteins = 6.9 gm/ dl, Albumin = 3.9 gm/ dl.
- Prothrombin time, partial thromboplastin time = Normal
- Ultrasound abdomen = Normal.

What is the cause of hematemesis and malena in this child ?

Expert's opinion:- This child has hematemesis and malena with just palpable spleen, mildly elevated liver enzymes, thrombocytopenia, Thus one should consider differential diagnosis of extrahepatic portal hypertension, chronic liver disease, hemolytic anemia with hypersplenism and bleeding disorder. For chronic liver disease, the liver should be palpable. A non-palpable liver would suggest shrunken liver and cirrhosis. However, then patient should have hypoalbuminemia and coagulopathy which are all normal. Thus, in this child, chronic liver disease seems unlikely. Hemolytic anemia with hypersplenism would imply a large spleen and pancytopenia. In this child, spleen is just palpable and there is no pancytopenia so hypersplenism is also unlikely. In case of bleeding disorder, though this child has low platelet count, they are not that low to cause bleeding. Also, prothrombin time and partial thromboplastin time are normal. Thus, platelet function defects could be the cause of bleeding. However, bleeding disorders should cause bleeding in other areas as well and there should be petechiae or other signs of bleeding. Thus, bleeding disorder should not be considered as primary diagnosis. Extrahepatic portal hypertension can cause hematemesis and malena. Mildly elevated liver enzymes can occur due to portal biliopathy. In this child esophageogastroscopy and colour doppler of abdomen should be done. Colour doppler showed portal cavernoma following portal vein thrombosis and multiple collaterals in periportal region suggestive of portal cavernoma. Thus, this child was diagnosed as extrahepatic portal hypertension.

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THROMBOCYTOPENIA IN AN HIV INFECTED CHILD

Case: - An 18 months old HIV infected boy on antituberculous therapy (ATT) had persistent thrombocytopenia. He had failure to thrive (height 71 cm, weight = 7 kg) with delayed milestones and hepatosplenomegaly. His serial platelet counts are depicted in Table 1.

His bone marrow aspiration done in August 2010 showed hypocellular marrow with normoblastic erythropoiesis, normal myeloid maturation and normal megakaryocytes. He was started on antiretroviral therapy (ART) consisting of Zidovudine (AZT), Lamivudine (3TC) and Nevirapine (NVP) to which he had a weight gain of 2 kg in next 2 months.

Table 1:- Serial platelet counts

	June '11	July '11	Aug '11	Sept '11
Hemoglobin	9.3	8.2	8.2	7.3
WBC	20,800	16,100	25,300	22,000
Platelets	1,21,000	85,000	26,000	1,01,000
Treatment	Antituberculous therapy (ATT)	ATT	ATT Antiretroviral therapy (ART) started	ATT + ART

What is the cause of thrombocytopenia?

Expert's opinion: Thrombocytopenia is a known complication in patients infected with HIV-1. However, the exact immune mechanism leading to platelet destruction is unclear. Elevated levels of antiplatelet IgG antibodies and non-specific deposition of circulating immune complexes and complements have been suggested as the cause of increased clearance of platelet. However studies have depicted that increased levels of anti platelet IgG antibodies are not causally related to the development of thrombocytopenia in children. With evidence of viral RNA present in megakaryocytes, a direct role of HIV in the pathophysiology of thrombocytopenia may be present. ART can help to increase the platelet count as is seen in this patient.

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HOW DID THE CHILD GET HIV?

A 7 years old boy born to a commercial sex worker was referred by an orphanage for HIV testing. Both parents had abandoned the child and the child was living in the orphanage for the past 2 years. His HIV ELISA at time of admission to the orphanage was negative. Currently the child was on antituberculous treatment for past 3 months in view of primary complex with mantoux positive. His HIV ELISA now was positive. On retesting, it was again positive. He had never received any blood products.

How did this child's HIV ELISA change from negative to positive?

Expert's opinion: There are several explanations for the same:

1. First HIV ELISA report was wrong. This is possible since the child was born to a commercial sex worker. It is quite likely that the mother may have had HIV infection and the child may have acquired the infection vertically and was HIV infected. However, the child has had no opportunistic infections in past or other HIV related illnesses apart from tuberculosis which is anyway endemic in the country.
2. Sexual abuse since the child was HIV negative at the time of admission in the orphanage, it is likely that the there may have been sexual abuse leading to HIV infection. However, it can only be an assumption and it may not be possible to prove the same.

To prove that the report was wrong, one needs to do a confirmatory test which should be a Western blot test. In this child, the western blot test was positive.

There are instances where transmission of HIV in a child may be unknown and one would need to always rule out sexual abuse as an underlying cause.

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