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Case Report:

Successful Pregnancy Outcome in a Patient of Chronic Myeloid Leukaemia (CML) Without Any Therapy

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Abstract:
The management of cancer during pregnancy may pose difficulty for patients, their families and physicians. The concomitant occurrence of pregnancy and CML is very rare since it is a malignancy which is most commonly detected in elderly. A 30 years old female was diagnosed as a case of CML and prescribed hydroxyurea which she stopped on her own after taking for few months. The patient conceived one month after stopping hydroxyurea. She did not agree to terminate the pregnancy even on repeated requests. Though the total leucocyte count was in the range of 150-200X10^3/ml, she refused to take any form of therapy till delivery. Antenatal period was uneventful and at term she delivered a male child normally. The mother developed secondary postpartum hemorrhage which was controlled after exploration and removal of retained bits of placenta. Hydroxyurea was started 4 weeks after delivery. Both the mother and the child are doing well till date.

Key Words: Chronic myeloid leukemia, Pregnancy

Introduction:
The real incidence of leukemia during gestation is not well known. It is estimated to range from 1 in 75,000 to 100,000 pregnancies.[1] Acute leukemias are more frequent with pregnancy. CML is very rare and accounts for less than 10% of all cases. The management of CML during pregnancy is a difficult problem because of the potential effects of therapy on the fetus. In this circumstance, the physician should not only provide adequate treatment to ensure continued maternal well-being but also avoid fetal compromise. In this case report, we describe a CML patient with pregnancy who delivered a healthy baby at term without any therapy.

Case Report:
A 30 year old woman with chronic myeloid leukemia attended antenatal clinic of NRS Medical College, Kolkata around 32weeks of pregnancy. The patient was married for 6 years. She had history of two spontaneous abortions at 12 and 20 weeks of gestation in early years of her married life. Following these miscarriages, she was suffering from secondary infertility. Old documents showed that she attended local physician for dragging pain in the left upper abdomen and was found to have moderate splenomegaly. Subsequent peripheral blood and bone marrow examination confirmed it to be a case of Philadelphia chromosome positive CML. She was prescribed hydroxyurea, which she took for 5 months and stopped on her own. She conceived in the next cycle spontaneously. Physical examination showed that she had mild pallor associated with a huge splenomegaly. Uterus was 28-30 weeks (4 cm above the umbilicus) deviated to the right and carrying a small, growth-retarded fetus with a heart rate of 140/min. Opinion of the hematologist was immediately sought for. Complete hemogram showed Hb-9.2 g%, Hct-28.2%, MCV-94.3fl, MCH-33.4 pg/ml, WBC 175X10^3/l, platelets-601X10^3/l, and differential count showed Polymorphs 36, Lymphocytes 12, Monocytes 7 Basophils 4, Eosinophils 2, with myelocyte 19%, metamyelocyte17%, blast cell 3%. Blood biochemistry revealed normal liver function test, and blood sugar, urea, creatinine and uric acid levels were 133mg %, 24mg%, 0.8mg%, 11mg% respectively. She was advised to take hydroxyurea or to undergo leukapheresis till delivery. She refused to take any sort of therapy till the pregnancy got over.

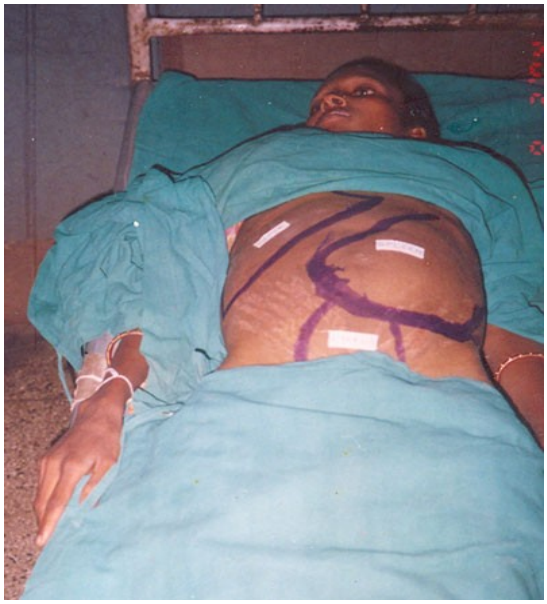

Figure 1: The Chronic Myeloid Leukaemia Patient with Hepatosplenomegaly

The patient was kept under close monitoring with weekly blood count and blood biochemistry. Her Hb% remained

around 9g%, WBC count varied between 150 –200 X 103/ml, blood biochemistry remained normal except a high uric acid level. She went into labour at 37 weeks and delivered normally a healthy male child of 2.5 kg. On 8th day of puerperium she developed secondary post partum hemorrhage, which required exploration under general anesthesia and blood transfusion. After one week she was discharged from the hospital, and asked to attend haematology out patient department and well baby clinic regularly. She was put on hydroxyurea as per advice of the haematologist. Both the mother and the baby are doing well after 6 months of follow-up.

Discussion:

The coincidence of CML and pregnancy is an uncommon event, in part because CML occurs mostly in older age groups. In contrast this patient is a case of CML presented at young age. Pregnancy and cancer is a complex situation. Often treatment cannot be delayed. When chemotherapy is needed urgently, this typically requires termination of pregnancy.[2] Many patients with CML have been reported to have a successful pregnancy. CML has been treated during pregnancy with busulfan, alpha-interferon, hydroxyurea and leukapheresis. Unfortunately, the potential teratogenic effects of chemotherapy on the fetus make their use during pregnancy much less attractive. Indeed, congenital malformations have been associated with busulphan therapy during pregnancy in at least three cases.[3] Teratogenic effects have also been seen in the offspring of rats given five times the normal human dose of hydroxyurea.[4] Although, alpha-interferon has not been associated with teratogenicity in either animal studies or in humans receiving the drug during pregnancy, it has been shown to have abortifacient effects in rhesus monkeys, albeit at doses many times higher than those used to treat patients.[5] Arguably, there are other reports[6-8] of pregnant patients receiving busulphan, hydroxyurea, or alpha-interferon without apparent teratogenic or abortifacient effects. However, there is paucity of data regarding CML patients on imatinib mesylate becoming pregnant and completing pregnancy.[2] Imatinib has been found to be teratogenic in rats. This patient with two previous fetal loss when conceived after a period of secondary infertility refused to take any form of therapy when explained about the potential effect of therapy on the fetus. But fortunately pregnancy without any medication in the antenatal period continued uneventful and had successful outcome. While CML may not need to be treated immediately, and pregnancy does not appear to affect the course of the disease, there is still a risk of leukostasis, as well as the risk of placental insufficiency with consequent below-normal fetal birth weight, increased fetal prematurity, and increased mortality if CML is left untreated through out the pregnancy.[9] Fortunately, the antenatal and intranatal periods of the patient were uneventful and she delivered a healthy baby. The secondary postpartum haemorrhage that she experienced was mainly due to the retained bits of placenta and not related to the disease process.

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