CASE REPORT

Pregnancy in Survivor of Acute Lymphoblastic Leukemia with Thalassemia Trait

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Introduction

Of all cancers in India, 1.6–4.8 % cancers occur in children less than 15 years of age [1]. Leukemia is the most common childhood cancer in India with the relative proportion varying between 25 and 40 %. 60–80 % percent of all leukemias are acute lymphoblastic leukemia (ALL). The five-year overall survival for ALL is 33 % [1].

Case Report

Mrs XYZ, a 30-year-old woman, came with complaints of three and half months of amenorrhea. She was G2P1L1 with a previous LSCS done for cephalo pelvic disproportion (CPD).

She had presented with symptoms of fatigue, malaise, weakness, and anemia and was referred to a hematologist in 1985. Her hemoglobin was 8 g %, Hematocrit 25 %, total count 75,000, Lymphoblast 88 %, and Platelet 1.6 lacs. Her bone marrow examination revealed total replacement with lymphoblast over 90 %. She was diagnosed as Tcell-type ALL. CT scan brain showed CNS involvement. She received multiple chemotherapy treatments in 1985 and 2,400 rads of radical cobalt radiation to the cranium for metastasis. She

developed paralysis following a lumbar puncture in 1986 and developed foot drop and loss of power below the hip, Fig. 1.

In the first pregnancy, she had presented with 4 months of amenorrhea. She had presented with pallor. Her hemoglobin was 7.4 g %, with hypochromia and microcytosis on peripheral smear. Her hemoglobin A2 was more than 4.5 %. She was diagnosed with the thalassemia trait. Her husband's hemoglobin electrophoresis was normal. Her pregnancy was uneventful except at 36 weeks, there was a slight increase in total and direct bilirubin. The total bilirubin was 1.8 and direct was 1 mg %. She was referred to a hematologist and was diagnosed as being on complete remission of ALL with the thalassemia trait to be managed conservatively as no special care would be needed during delivery. Clinical and MRI pelvimetry showed cephalo pelvic disproportion. Elective LSCS was done on November 7, 2006, at K.J Somaiya Hospital. She delivered a 2.9-kg female child who is now 3 years old with no abnormalities at present.

In her second pregnancy, she presented with three and half months of amenorrhea. This pregnancy was also uneventful. Only the LFT was deranged. Total bilirubin was 2 mg % and direct was 1.3 mg %. Other investigations were within normal limits. Color Doppler was normal with no oligohydramnios. A hematologist's reference was done and the patient was fit for LSCS. Elective LSCS was done on January 8, 2010, at K.J.Somaiya Hospital. She delivered a 2.750-kg female child with no congenital anomaly except a club foot. The postoperative recovery was good and the patient was discharged on day 6.

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Fig. 1 Foot drop and loss of power below the hip following lumbar puncture

Discussion

Acute Lymphoblastic Leukemia is a cancer of the white blood cells characterized by excess lymphoblasts. ALL causes damage and death by crowding out normal cells in the bone marrow and by spreading or metastasizing to other organs. Thalassemia syndromes are inherited anemias caused by mutations at the globin gene loci on chromosome 16 and 11, affecting production of alpha and beta globin proteins, respectively.

The thalassemia trait refers to carriers of mutations as such individuals have microcytosis and hypochromia and may have mild anemia.

Green et al. [2] reported in 2002 that in pregnancies among female survivors, 63 % resulted in live births, 1 % in still birth, 15 % in miscarriage, 17 % in abortion, and 3 % were unknown. The offspring of women who received pelvic radiation are at risk of low birth weight.

Goldsby et al. [3] reported in 2010 that children treated with regimens that include cranial radiation for ALL and those who suffer a relapse rate are at an increased risk of late onset of neurologic sequel.

In our case, the survivor of acute lymphoblastic leukemia also had the thalassemia trait which has not been reported in the literature. The patient had loss of power below the hip with foot drop and had a contracted pelvis. Both her pregnancies were carried till term and were uneventful and had good outcomes.

References

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