



# Promyelocytic Leukemia Presenting as Acute Menorrhagia

**Thangappah Radha Bai Prabhu**

Professor, Department of Obstetrics and Gynecology, Government Hospital for Women and Children, Chennai, Tamil Nadu India

**Correspondence:** Thangappah Radha Bai Prabhu, Professor, Department of Obstetrics and Gynecology, Government Hospital for Women and Children, 40/78 Second Cross Street, Collectorate Colony, Aminjikarai, Chennai-600029, Tamil Nadu, India Phone: 9444051124, e-mail: radhaprabhu54@ymail.com

## Abstract

Acute promyelocytic leukemia (APL) is a unique form of acute myeloblastic leukemia, which manifests by DIVC, massive hemorrhage and hypofibrinogenemia and has a rapidly fatal outcome. Here we report a case of APL in a 38-year-old woman, who presented with an acute episode of severe menorrhagia for the first time and died due to hemorrhagic complications. The diagnosis of hematological disorders including leukemia should be considered in any patient who presents with acute onset of menorrhagia with rapid deterioration and not responding to conventional treatment.

**Keywords:** Leukemia, Menorrhagia.

## CASE REPORT

38 years old Mrs K was admitted to the intensive care unit (ICU) in severe hemorrhagic shock. She was married for 17 years, has had two normal deliveries and the last child-birth (LCB) was 14 years ago. She had undergone Medical termination of pregnancy (MTP) with sterilization 11 years ago. Her past medical history was not significant. In her menstrual history, she attained menarche at the age of 13 years with regular cycles, periods occurring once in 30 days lasting for 2 and 3 days with moderate flow and used to change 2 and 3 pads per day. Her last menstrual period (LMP) was on the 3rd of September, which started as a normal period without any preceding period of amenorrhea. The flow was very heavy and she had to change 10 to 15 pads per day. Therefore, she consulted a private doctor and on the 5th day of period curettage was carried out on her. During the procedure, the bleeding was torrential and the patient went in for hemorrhagic shock and, therefore was referred to our institution for further management.

On admission, the patient was in shock, very pale, pulse was feeble and the systolic was 70 mmHg and diastolic was unrecordable. There was no lymphadenopathy, liver and spleen were not palpable. There was no abdominal distention, guarding or rigidity. Pelvic examination was unremarkable with negligible bleeding. She was resuscitated with three units of blood transfusion, dopamine infusion and hydrocortisone. Intraoperative bleeding and intrauterine pathology were ruled out by ultrasound scan. Her investigation findings were as follows: Hb - 6 gm%, BT- 6 minutes, CT - 4 minutes, fibrinogen 0.26 gm%, platelet count - 1,15,000/ml TC- 12,800, DC- P78L20E2, peripheral smear showed hypochromic microcytic anemia and the urine pregnancy test was negative. 24 hours after admission

her vitals were stable, still looked very pale, slight bleeding was noted from the gum, petechial hemorrhagic spots were seen over the face, chest and flexor aspect of the upper limb. She was seen by the hematologist and the repeat investigation showed an Hb of 5 gm%, TC- 75,000, DC -P30 L22 B48, platelet count was 10,000/ml, and the peripheral smear showed evidence of acute promyelocytic leukemia with abundance of promyelocytes. Fibrinogen level was 0.15 gm%, PT and APTT levels were elevated. She was transfused three units of blood, six units of platelets and two units of fresh frozen plasma and was planned for chemotherapy. However, in spite of all measures her general condition deteriorated and she died of anemia with failure on the 3rd day after admission.

## DISCUSSION

According to the French-American-British group (FAB group), acute promyelocytic leukemia (APL) is classified as variant M3 of acute myeloblastic leukemia. (Raj Nijjar, 2003).<sup>1</sup> The great majority of cells in this leukemia are abnormal promyelocytes with very heavy granulation obscuring the basophilic cytoplasm. These granules release procoagulant materials leading onto intravascular coagulation. Clinically, patients suffering from APL almost invariably presented with hematological manifestations such as petechiae, echymosis, hematuria, epistaxis and menometrorrhagia is a very common finding in the menstruating age group of women (Gralnick and Sultan, 1975).<sup>2</sup> The hemorrhagic diathesis often precedes the diagnosis of leukemia by 2 to 8 weeks. In our patient menorrhagia was the first presenting symptom, and because of the acute onset, severity and rapid deterioration hematological problem was suspected and the diagnosis of APL was made within a

week's time. Hematological investigation may reveal anemia, thrombocytopenia and characteristic blood film picture. In APL with intravascular coagulation, there will be prolongation of prothrombin and thrombin time, elevation of serum fibrinogen degradation products and decreased levels of factor V and fibrinogen.

The therapy of APL must include the control of the hemorrhagic diathesis and chemotherapeutic attack on the leukemic cells. Patients must be given fresh platelet transfusion to maintain the platelet count above 50,000, fresh frozen plasma to replace clotting factors and red cell transfusion for correction of anemia. In 1978, Drapkin et al<sup>3</sup> showed that prophylactic heparin therapy will markedly reduce fatal hemorrhage. Patients with APL are given conventional chemotherapy with arabinoside

and daunorubicin. It has been showed that the use of all trans-retinoic acid (ATRA) will result in maturation of immature myeloid cells resulting in remission. Arsenic is currently being investigated as part of postremission therapy together with ATRA induction. Our patient succumbed to hemorrhagic complications before initiation of chemotherapy.

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