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Case Report

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Spontaneous Hemoperitoneum in Chronic Myeloid Leukemia: An Unusual Etiology

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Abstract

Spontaneous hemoperitoneum is rare in chronic myeloid leukemia (CML) and is commonly due to splenic hemorrhage which may need surgical intervention. Corpus luteal hemorrhage is common in child bearing women but is rare etiology of spontaneous hemoperitoneum in CML. Conservative approach prevents morbidity associated with CML. Corpus luteal hemorrhage should be considered as possible etiology of spontaneous hemoperitoneum in female patients of chronic myeloid leukemia. A 32-year-old, multiparous woman presented with hypovolemic shock with hemoperitoneum and enlarged spleen and negative urine pregnancy test. She was diagnosed as a case of myeloproliferative disorder as per her hematolgy reports. Initially splenic hemorrhage was thought to be cause of hemoperitoneum but ultrasonography confirmed corpus luteal hemorrhage as the etiological cause. Conservative management was planned which was successful thereby averting surgery. Patient was started on imatinib after diagnoses of chronic myeloid leukemia was established by reverse transcriptase polymerase-chain-reaction testing of peripheral-blood RNA. Also, she conceived while on treatment and delivered healthy baby with her disease being under remission. Corpus luteal hemorrhage is a possible etiology of spontaneous hemoperitoneum in chronic myeloid leukemia in reproductive age group.

Keywords: Chronic myeloid leukemia; Spontanous hemoperitoneum; Etiology

Introduction

Corpus luteal cyst hemorrhage (though common in child bearing women), is a rare cause of spontaneous hemoperitoneum in patients of chronic myeloid leukemia in reproductive age group. It also mimics ectopic pregnancy, spontaneous splenic hemorrhage in symptomatology along with other causes of spontaneous hemoperitoneum.

Case Report

Multiparous woman (32 years old) with three previous normal deliveries, presented with mild vaginal bleeding and acute pain abdomen since two days. Her last menstrual period was twenty days back. There was no history of trauma. Patient was in early hypovolemic shock (pulse rate-110/minute, blood pressure-90/70 mmHg, arterial blood gases were within normal limits). Abdomen was distended and tender. Shifting dullness was elicited. Spleen was enlarged till umbilicus but non tender. Pelvic examination revealed minimal bleeding and normal sized uterus. Cervical motion tenderness and left adnexal fullness was present. However urine pregnancy test was negative. She was resuscitated with intravenous fluids and one packed cell transfusion. Her Haemoglobin was 8.3 g/dL, TLC- 1.28 × 10^5/µL (Leucocytosis). Peripheral smear showed Blastocyte-2 Promyelocyte-3, Myelocyte14, Metamyelocyte10, Polymorphs-58, Lymphocyte3, Monocyte-3Eosinophil-5Basophils2. Nucleated RBC was 2/100 white blood cells. Beta-hCG was 0.5 mIU/mL. Based on above haematological and urinary findings, diagnosis of chronic myeloproliferative disorder with splenic haemorrhage was considered. Emergency ultrasonography and Doppler revealed enlarged spleen without any site of rupture. Hemoperitoneum was noted. An empty normal sized uterus with echogenic lesion (3.8 × 2.7 cm) in left ovary suggestive of corpus luteal cyst was noted. Hence a final diagnosis of corpus luteal hemorrhage with myeloproliferative disorder was made. Conservative management with back up of laparotomy in case of worsening shock was planned. She received hydroxyurea, allopurinol and hemostatics (Tranexamic acid). On day 7 hemoperitoneum resolved completely and need for laparotomy was obviated. Patient was referred to our haem-oncology unit.

Reverse transcriptase Polymerase-chain-reaction testing

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of peripheral-blood RNA revealed Bcr-abl rearrangement confirming chronic myeloid leukemia (CML). Patient was started on imatinib with contraceptive advice and disease was under remission. She conceived while on imatinib due to failed barrier contraception and presented to our antenatal clinic at 28 weeks. As she was past teratogenic age, imatinib was continued. Level 2 sonography ruled out congenital anomalies in foetus. She went into spontaneous labor and delivered healthy term female baby vaginally.

Discussion

Chronic myeloid leukemia (CML) is a clonal myeloproliferative disorder arising from single pluripotent hemopoietic stem cell due to acquired genetic change namely Bcr-abl gene rearrangement, owing to balanced reciprocal translocation involving chromosomes 9 and 22 [1]. Fifty percent of patients have splenomegaly. Thrombotic and hemorrhagic complications such as atherothrombosis, venous thrombosis, rarely gastrointestinal hemorrhage and splenic hemorrhage do occur in CML. Spontaneous hemoperitoneum is rare in CML. It is defined as blood within peritoneal cavity without traumatic cause. Imaging is required for diagnoses. Spontaneous splenic rupture has been reported worldwide as a cause of massive hemoperitoneum in CML patients leading to acute abdomen with varying degrees of shock and even death [2].

Ovarian cyst hemorrhage in CML had been first described by Valentsik in 1951 [3]. However, no data regarding corpus luteal hemorrhage in CML have been reported till date. Ruptured corpus luteal cyst is a common in women of reproductive age group. Symptoms range from being asymptomatic to features of an acute abdomen. In normal menstrual cycle, a mature ovarian follicle ruptures, releasing an ovum. Occasionally, this rupture site may bleed, causing acute abdominal pain with varying degrees of shock. Etiology is unknown, although abdominal trauma and congenital bleeding disorders may increase the risk. Diagnosis is by pelvic ultrasound. Treatment can be either conservative or surgical [4]. This is a first reported case of spontaneous hemoperitoneum following corpus luteal haemorrhage in CML patient till date, best to our knowledge. Women with CML if presents with spontaneous hemoperitoneum, corpus luteal hemorrhage should be a differential diagnoses apart from splenic hemorrhage. Our patient belonged to reproductive age group who was managed conservatively without surgical intervention. She conceived spontaneously and had live birth without congenital anomalies while on imatinib.

Corpus luteal cyst hemorrhage should be considered as a possible etiology in women of reproductive age group with CML presenting with spontaneous hemoperitoneum in absence of positive urine pregnancy test. Conservative approach prevents morbidity associated with CML and is successful. Imatinib may not cause congenital anomaly if women conceive while on therapy though more studies are needed to substantiate it [5].

Conflict of Interest

No conflicts to disclose.

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