A Rare Case of Acute Leukemia Relapsing with a Granulocytic Sarcoma Causing Ectopic Pregnancy

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Abstract A 33 year old female was admitted to department of obstetric and gynaecology with profuse vaginal bleeding. She was diagnosed with acute myeloid leukemia 3 months ago. Pelvic ultrasound was unremarkable. Since vaginal bleeding persisted despite normal platelet counts low dose methotrexate was administered with the presumptive diagnosis of ectopic pregnancy. A laparoscopic investigation was performed as she did not respond to this treatment which revealed an intraluminal ectopic pregnancy in her right fallopian tube. A pathological specimen was obtained. Granulocytic sarcoma is an infiltrate of immature granulocytic precursor cells in an extramedullary site. To best of our knowledge, this case is the third patient with GS in the fallopian tube and the first case causing ectopic pregnancy.

Dear Editor,

A 33 year old female was admitted to department of obstetric and gynaecology with profuse vaginal bleeding. She was diagnosed with acute myeloid leukemia minimally differentiated (AML-1) 3 months ago. She received induction with cytosine arabinoside (ARA-C) and idarubicin (IDA) and achieved complete remission. She denied any further treatment after induction. Her physical examination was within normal limits. Blood studies showed anemia with a hemoglobin level of 7 g/dl and without

accompanying thrombocytopenia. Blast cells was seen in her blood smear. Pelvic ultrasound was unremarkable. Since vaginal bleeding persisted despite normal platelet counts low dose methotrexate was administered with the diagnosis of ectopic pregnancy. A laparoscopic investigation was performed as she did not respond to this treatment which revealed an intraluminal ectopic pregnancy in her right fallopian tube. Myeloid sarcoma was covered the passageway so embryo couldn't go through uterus and attached the fallopian tube. A pathological specimen and immunochemical study was obtained (Figs. 1, 2). After laparoscopic investigation she received ARA-C and IDA chemotherapy again. She was in remission 28 day of bone marrow biopsy, continued straightening treatment with high dose ARA-C. She was still in remission.

Granulocytic sarcoma (GS) is an infiltrate of immature granulocytic precursor cells in an extramedullary site and usually is associated with acute myeloid leukemia (AML) and relatively less frequent in chronic myeloproliferative disorders (CMPD) [1]. GS might be seen in 3–8 % of leukemia patients and has a poor prognostic significance. It can occur simultaneously, or precede the diagnosis of leukemia and any extramedullary anatomic site could be involved. However female gynecologic tract is a rare anatomic site of involvement with GS. In a previous study consisting of 11 patients with GS of the gynecologic tract; 5 patients had GS in the uterus, 3 at the cervix, 2 patients had ovarian involvement and 1 patient had GS at clitoris. Only 2 of the patients with GS of the uterus had fallopian tube involvement [2]. To best of our knowledge, this case is the fourth patient with GS in the fallopian tube [2, 3] and the first case causing ectopic pregnancy.

The clinical diagnosis of GS is difficult particularly when it is localised in an atypical site and might even be the cause of an ectopic pregnancy which has not been

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Fig. 1 Pathological specimen: extramedullary myeloid tumor. Myeloblast infiltration of the wall of the fallopian tube. Placental villi into the lumen of tuba (ectopic pregnancy). Accumulation and organized thrombus occurrences and formation (chronic salpingitis)

Fig. 2 Immunochemical specimen: myeloblastic cells immunohistochemically positive for myeloperoxidase and lysozyme

described previously. GS should be considered in the differential diagnosis of the patients with delayed period and/or vaginal bleeding in patients with the history of acute

leukemia. Obtaining a biopsy specimen is mandatory as immunohistochemistry in addition to morphological examination is indispensable for the definitive diagnosis and treatment.

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