

Acute lymphoblastic leukemia presenting with a uterine cervical mass

N. Geetha, V. S. Lali, Anitha Mathews¹, N. P. Prakash

Departments of Medical Oncology and ¹Pathology, Regional Cancer Centre, Trivandrum, Kerala, India

ABSTRACT

Involvement of female genital tract with acute lymphoblastic leukemia (ALL) is extremely rare, and it is even rarer for a patient to have symptomatic presentation. We report the case of a middle-aged lady with ALL, who presented with severe abnormal uterine bleeding and a uterine cervical mass. Biopsy of the cervical mass showed infiltration by leukemic blasts. She received chemotherapy with Berlin-Frankfurt-Munster protocol and is alive in remission after 10 years.

Key words: Acute lymphoblastic leukemia, female genital tract, uterine cervix

INTRODUCTION

Female genital tract involvement by hematologic neoplasms is uncommon and is usually associated with disseminated disease. The hematologic malignancies which involve the female genital organs are usually non-Hodgkin's lymphoma either diffuse B-cell or Burkitt's lymphoma and granulocytic sarcoma.^[1-3] Leukemic infiltration of the female genital tract is rare, and most of the reported cases are of acute myeloid leukemia (AML).^[1] Involvement of the uterus and cervix with acute lymphoblastic leukemia (ALL) is extremely rare, and it is even rarer for a patient to have symptomatic presentation. We report the case of a middle-aged lady with ALL, who presented with severe abnormal uterine bleeding and a uterine cervical mass due to leukemic infiltration.

CASE REPORT

A 42-year-old lady presented to us with menorrhagia of 2 months duration. Examination showed severe pallor, no lymphadenopathy or organomegaly. Per vaginal

examination showed a proliferative growth protruding from the cervix, the normal vagina, and a posterior lower uterine fibroid. Her hemoglobin was 11.8 g/dl, total count of 3900/mm³ with 14% abnormal cells, platelet count of 52,000/mm³. Serum chemistries were normal. Bone marrow examination showed 80% blasts which were peroxidase negative, positive for CD19 and negative for CD7 and CD13. The diagnosis was precursor B lymphoblastic leukemia. In view of the profuse vaginal bleeding, she underwent D and C and removal of the cervical growth. HPR from the same showed tissue lined by endocervical glandular epithelium with subepithelial stroma showing infiltration by sheets of round cells with irregular nuclei, immature chromatin, and scanty cytoplasm [Figure 1]. Endometrial curettings showed scattered tubular glands in a cellular stroma. The picture was suggestive of acute leukemia infiltrating endocervical tissue. She was started on chemotherapy with Berlin-Frankfurt-Munster 90 ALL protocol. Her menorrhagia slowly subsided by the end of phase B induction. She completed maintenance chemotherapy and continues to be in complete remission after 10 years.

DISCUSSION

The primary sites of extramedullary disease in ALL are central nervous system and testes. Primary involvement of ovary, uterus, and cervix in ALL is only very rarely reported. It is uncommon for the gynecologist to consider leukemia in a patient who presents with abnormal uterine bleeding. In 1939, McDonald and Waugh were the first to report leukemic infiltration of the endometrium.

Access this article online

Quick Response Code:



Website:

www.ccej-online.org

DOI:

10.4103/2278-0513.152745

Address for correspondence: Dr. N. Geetha, Department of Medical Oncology, Regional Cancer Centre, Trivandrum - 695 011, Kerala, India.
E-mail: geenarayanan@yahoo.com

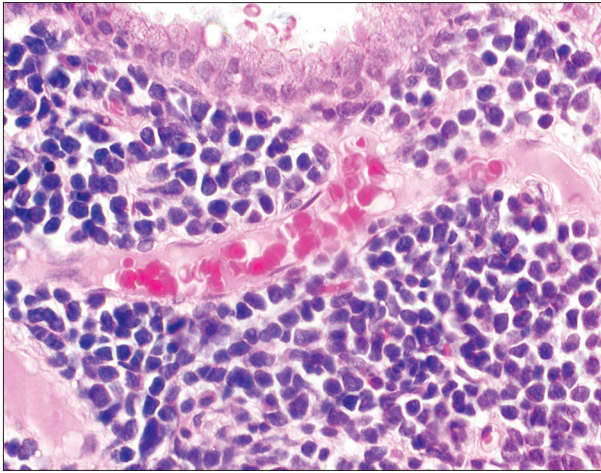


Figure 1: Sheets of blasts underlying endocervical epithelium (H and E, ×400)

Zutter and Gersell described a young woman with acute stem cell leukemia who relapsed with localized involvement of the uterus and cervix after a 2 years disease free interval. At relapse, the leukemic cells expressed CD1, CD2, CD5, CD7, and CD4 or CD8, antigens.^[4] The authors postulated that the T-cell antigens which are extracellular matrix receptors could have contributed to the uterine relapse.

A 38-year-old woman with precursor T ALL in remission for 4 years relapsing in the uterine cervix, myometrium, endometrium, and appendix was reported. The blasts were immunoreactive for CD45RB, CD3, CD43, CD34, and TdT. She died 10 months after relapse.^[5] Imbriaco *et al.* described a 5-year-old girl with CD10+ ALL, who was in remission for 2½ years when she relapsed with a uterine mass which was immunophenotypically similar to the primary disease. She was treated with reinduction and local radiation.^[6] A case of a recurrence of ALL in the uterine cervix was diagnosed by cytology and by immunocytochemistry 43 months after initial diagnosis. She was treated with chemotherapy alone and remained in second complete remission 54 months after relapse.^[7]

Israel and Mutch described three patients with leukemia who had abnormal uterine bleeding and infiltration of the uterus of which two were AML and one ALL and also reviewed additional seven patients with postmortem data.^[8] Of the 10 patients, three had lymphatic leukemia and leukemic infiltration. A 59-year-old lady with ALL relapsing with a cervical mass diagnosed by cervical cytology was also reported. Cervical biopsy showed cells which were positive for TdT, CD10, CD34, and CD79a.^[9] Another lady with precursor B lymphoblastic lymphoma of the uterine corpus, who underwent surgery and chemotherapy and alive at 42 months was described.^[10]

Our patient had menorrhagia and was found to have leukemic infiltration of the endocervical tissue at presentation. She continues to be in remission > 10 years after diagnosis. To our knowledge, this is the first report of ALL with an endocervical involvement at presentation and a very long survival.

Abnormal uterine bleeding is a feature of leukemia in women. Apart from thrombocytopenia, abnormal bleeding could be due to the functional effect of leukemic cells deposited in the tissues of the female genital tract, the dense infiltration resulting in extensive parenchymal destruction thus predisposing to abnormal uterine bleeding.^[8]

CONCLUSION

Endocervical involvement in ALL is very rare. Since all patients with leukemia have a generalized bleeding tendency, often menorrhagia is attributed to it, and it is common to overlook any local problem for the same. This case highlights the importance of looking for a uterine pathology also in a patient with acute leukemia who presents with menorrhagia.

REFERENCES

1. Oliva E, Ferry JA, Young RH, Prat J, Srigley JR, Scully RE. Granulocytic sarcoma of the female genital tract: A clinicopathologic study of 11 cases. *Am J Surg Pathol* 1997;21:1156-65.
2. Rajnics P, Demeter J, Csomor J, Krenács L, Pajor L, Kollár B, *et al.* Rare primary extranodal lymphomas: Diffuse large B-cell lymphomas of the genital tract. *Ann Hematol* 2009;88:1223-8.
3. Keller C, Savage DG, Rusta-Villa M, Bhagat G, Alobeid B. Primary Burkitt lymphoma of the uterine corpus. *Leuk Lymphoma* 2006;47:141-5.
4. Zutter MM, Gersell DJ. Acute lymphoblastic leukemia. An unusual case of primary relapse in the uterine cervix. *Cancer* 1990;66:1002-4.
5. Lyman MD, Neuhauser TS. Precursor T-cell acute lymphoblastic leukemia/lymphoma involving the uterine cervix, myometrium, endometrium, and appendix. *Ann Diagn Pathol* 2002;6:125-8.
6. Imbriaco M, De Iuri AB, Camera L. Isolated uterine relapse in a child with acute lymphoblastic leukemia. *AJR Am J Roentgenol* 1998;171:1166-7.
7. Tsuruchi N, Okamura J. Childhood acute lymphoblastic leukemia relapse in the uterine cervix. *J Pediatr Hematol Oncol* 1996;18:311-3.
8. Israel SL, Mutch JC. Leukemic infiltration of female genitalia; a gynecologic entity. *Obstet Gynecol* 1956;7:425-32.
9. Kazi S, Szporn AH, Strauchen JA, Chen H, Kalir T. Recurrent precursor-B acute lymphoblastic leukemia presenting as a cervical malignancy. *Int J Gynecol Pathol* 2013;32:234-7.
10. Tan SS, Peng XC, Cao Y. Primary precursor B cell lymphoblastic lymphoma of uterine corpus: Case report and review of the literature. *Arch Gynecol Obstet* 2011;284:1289-92.

Cite this article as: Geetha N, Lali VS, Mathews A, Prakash NP. Acute lymphoblastic leukemia presenting with a uterine cervical mass. *Clin Cancer Investig J* 2015;4:280-1.

Source of Support: Nil, **Conflict of Interest:** None declared.