

Case Report**Leukaemia Cutis: An Unusual Presentation of T-cell Acute Lymphoblastic Leukaemia in an Adult Patient****Lohit kumar Kalita^{1*}, Chayanika Kalita², Mir Alam Siddique³, Pabitra Kamar Gogoi⁴, Umesh Ch. Sarma⁵**¹Assistant Professor, Department of Oncology, Gauhati Medical College & Hospital, Guwahati, Assam, India²Assistant Professor, Department of Dermatology, Gauhati Medical College & Hospital, Guwahati, Assam, India³Assistant Professor, Regional Institute of Ophthalmology, Gauhati Medical College & Hospital, Guwahati, Assam, India⁴Professor & HOD (Rtd.), Department of Clinical Hematology, Gauhati Medical College & Hospital, Guwahati, Assam, India⁵Vice-Chancellor, Srimanta Sankadeva University of Health sciences, Narakasur Hill Top, Guwahati Assam, India***Corresponding author**

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Abstract: Leukaemia cutis is cutaneous manifestation of leukemia. Because of wide range of cutaneous manifestations, it is clinically difficult to make distinguish leukemia cutis from other skin lesions. Patients with leukaemia cutis commonly have concomitant systemic leukemia, but occasionally it has been observed that cutaneous precedes the involvement of bone marrow or peripheral blood. Thus, a skin biopsy can be the first indication of the leukemia in a subset of patients. Moreover, the immunophenotyping of routinely processed skin biopsy specimens is useful for the confirmation of the diagnosis of Leukemia Cutis. Cutaneous manifestation of hematologic malignancies in adult is uncommon. A 24 year old boy presented with multiple skin nodules on the limbs, face, trunk and abdomen. Histopathology and flow cytometry established the diagnosis of T cell acute lymphoblastic leukemia. This case is being presented for its rarity and clinical interest.

Keywords: Acute lymphoblastic leukemia, T-cell, Skin nodules.

INTRODUCTION

Leukaemia cutis is defined as cutaneous infiltration by neoplastic leukocytes (myeloid or lymphoid) that results in clinically identifiable cutaneous lesions [1]. Lymphocytic leukaemias involving skin are designated by their specific diagnosis, such as precursor B- or T-cell lymphoblastic leukemia/lymphoma and chronic lymphocytic leukemia. Cutaneous manifestation of T-Cell Acute Lymphoblastic in adult is uncommon.

CASE REPORT

A 24 year old boy was first brought to the emergency ward due to severe respiratory distress. He presented with multiple nodular lesions over his limbs, face including eyelids and trunk and face. He was otherwise well and had no constitutional symptoms. On examination he was afebrile, had enlarged lymph nodes and abdominal examination showed no hepatosplenomegaly. He had multiple nodules over his limbs, face, trunk, abdomen which are non tender, rubbery-firm in consistency and measuring from few millimetres to one centimetres (Fig. 1-3). His past medical history was unremarkable. On physical examination, he was febrile but trachypneic and tachycardia. Hepatosplenomegaly and peripheral

lymphadenopathy was detected. Ophthalmologic examination revealed no internal damage of eyes. Abdominal sonography showed mild hepatosplenomegaly but no mass or intra-abdominal lymph node was detected. Other workups including chest x-ray – opacities at right paratracheal area, complete blood count – Hb5.2%, TC-41,764/ML, PLT-30,00, RBC-1.43 million, Nrbc-34/100 WBC; DLC – Neutrophils 13%, Lymphocytes 79%, Monocytes 8%, Eosinophil 0%, Basophil 0%. Bone marrow aspiration examination showed acute leukemia. Histologic examination of the tissue biopsy of cervical lymph node specimen revealed Non Hodgkin's Lymphoma of T Cell Lymphoblastic type, where the tumor cells express CD 3 & TdT and are immunonegative for CD 20, CD 30, and CD 15 & CD 10. Skin biopsy of the lesions demonstrated that epidermis is infiltrated by atypical lymphoid cells and perivascular lymphoid infiltration suggesting secondary infiltration of skin by malignant T-cell lymphoblastic cells (Fig. 4). Flow cytometry reported that lymphoblasts are highly positive for CD3, CD7, CD13, CD45, HLADR, moderately positive for CD5 and negative for CD19, CD22, CD10, CD34, CD117 and CD33 which was suggestive of Acute lymphoblastic Leukaemia, T-ALL.



Fig. 1: Multiple nodules and plaques of various sizes distributed over the whole body predominantly over the trunk



Fig. 2: Multiple nodules and plaques of various sizes distributed over the whole body predominantly over the anterior abdomen



Fig. 3: Multiple nodules and plaques of various sizes distributed over the whole body predominantly over the thighs

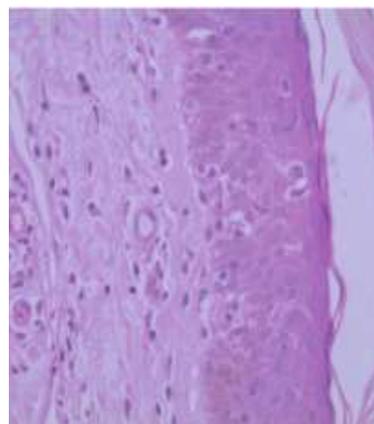


Fig. 4: Histopathological examination of the lesion: The lower portion of epidermis is infiltrated by atypical lymphoid cells and perivascular lymphoid infiltration suggestive of leukaemia cutis (20X)

DISCUSSION

Patients with leukaemia cutis may represent with single or multiple skin lesions [1]. The lesions are commonly described as violaceous, red-brown, or hemorrhagic papules, nodules, and plaques of varying sizes and shapes [3]. Moreover, Erythematous papules and nodules are reported as the most common clinical presentation [1]. Legs are most commonly involved, followed by arms, back, chest, scalp, and face [4]. In our case the skin lesions were nodular in shape of various sizes.

Leukaemia cutis is unusual in patients with precursor B- or T-cell lymphoblastic leukemia/lymphomas (1%) [5-7]. In our case the precursor cell is T-cell lymphoblastic leukemia/Lymphoma which falls into the unusual category.

The frequency of leukaemia cutis is seemed to be higher among children than adults. About 25-30% of infants with congenital leukemia have been reported to develop skin involvement [8, 9]. Such cases of congenital acute leukemia are most frequently encountered with Acute Myeloblastic Leukemia (two thirds of cases). Acute lymphoblastic leukemia (ALL) is less frequent [2]. Our case is a 24 years patient with T-cell Acute Lymphoblastic Leukemia and so it falls into the rare category.

Most cases of leukaemia cutis usually occur after a diagnostic establishment of systemic leukemia. It has been reported that involvement of skin and systemic leukaemia may occur in association in up to one third of the cases and, occasionally (in less than 10% of cases), skin infiltration can occur before bone marrow or peripheral blood involvement and in the absence of systemic symptoms [10]. In our case, skin manifestation was the first manifestation of T-cell Acute Lymphoblastic Leukaemia.

CONCLUSION

This case of leukaemia cutis has been presented for its rarity and clinical interest.

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