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Letter to Editor

Dermatology Section

# Asymptomatic Violaceous Nodules in a Young Female with Leukaemia Cutis

AANCHAL AGARWAL[1], MOHAMMAD HAMZA ANSARI[2]

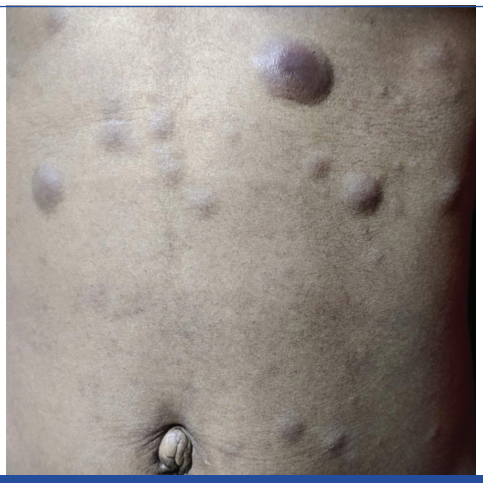


**Keywords:** Extramedullary manifestation, Leukocytosis, Malignancy, Myeloid

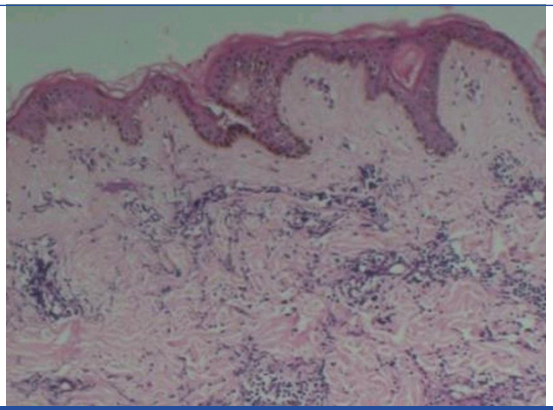
Dear Editor,

A 20-year-old female presented to the Department of Dermatology and Venereology of a tertiary care hospital with multiple asymptomatic, red, raised lesions over the trunk that had been present for two months. There were no other associated complaints, and her past and family history were not significant.

During physical examination, multiple non tender erythematous to violaceous nodules were observed on the abdomen and back, ranging in size from 1.5 to 5 cm in diameter [Table/Fig-1]. Systemic examination revealed no abnormalities. A provisional diagnosis of Leukaemia Cutis (LC) and cutaneous pseudolymphoma were considered. A skin biopsy was performed, which revolved an unremarkable epidermis. The dermis exhibited a moderately dense infiltrate of neutrophils and eosinophils, extending to the reticular dermis. Additionally, an interstitial infiltrate consisted of several large cells with abundant pale pink cytoplasm and irregular nuclei [Table/Fig-2].

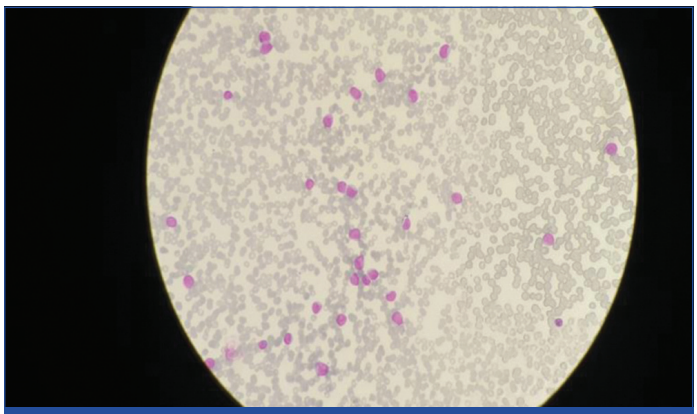


**[Table/Fig-1]:** Showing multiple, tender, erythematous to violaceous nodules of size 1.5 to 5 cm in diameter over the abdomen.

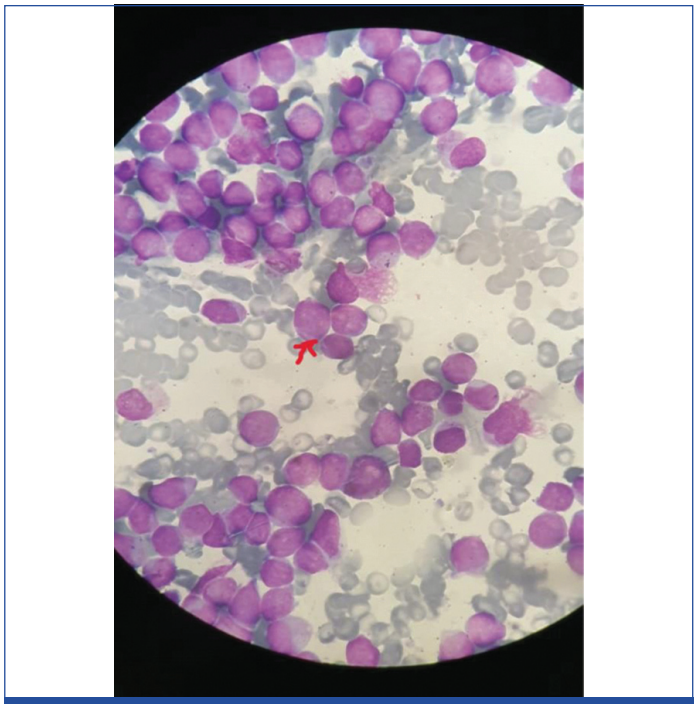


**[Table/Fig-2]:** Dense dermal infiltrate of neutrophils and eosinophils with several large cells with abundant pale pink cytoplasm and irregular nuclei scattered amongst it (10x, H&E).

Complete Blood Count (CBC) revealed an elevated total leukocyte count (32,000 cells/µL) with neutrophilia (12,800 cells/µL). The general blood picture demonstrated marked leukocytosis with nearly 89% myeloblasts [Table/Fig-3]. Bone marrow examination showed hypercellularity with approximately 90% blast cells, some of which exhibited cytoplasmic Auer rods [Table/Fig-4]. Immunohistochemistry (IHC) results were positive for CD3 and CD20, equivocal for CD68, and negative for CD34 and CD117. Collectively all these findings from the investigations accularated in concluding the diagnosis as LC with acute myeloid leukaemia was made, and the patient was referred to a specialised cancer institute for further management.



**[Table/Fig-3]:** General blood picture showed marked leucocytosis with nearly 89% myeloblasts (40x, Leishman stain).



**[Table/Fig-4]:** Bone marrow aspiration showing hypercellularity with almost 90% blast cell, and few blasts showed cytoplasmic auer's rods (red arrow) (100x, Leishman stain).

Leukaemia cutis is skin infiltration in patients with peripheral leukaemia which is relatively rare and typically signifies as advanced disease advances. LC refers to the specific cutaneous manifestation due to the infiltration of neoplastic leukocytes or their precursors into the epidermis, dermis, or subcutis. The non specific cutaneous manifestations occurring due to thrombocytopenia, inadequate granulocytosis, or paraneoplastic syndrome, and not necessarily because of leukaemic infiltration, are called leukaemids [1]. They are more frequent than LC and are seen in upto 25-40% of cases of leukaemias [1]. LC can occur in 3-30% of cases of leukaemia, depending on the type, with Acute Myeloid Leukaemia (AML) being the most common type and accounting for 5-10% of cases [2,3]. It usually follows the systemic disease but can also occur concomitantly, although rarely it precedes the diagnosis (aleukaemic LC). The exact pathophysiology of migration of leukaemic cells into the skin and the formation of LC lesions is unknown. However, recent molecular research has provided some information regarding the cell-cell interaction and the role of adhesion molecules in mediating the migration of leukaemic cells to the skin via skin-selective homing processes [3]. The clinical presentation of LC varies, ranging from macules, papules, plaques, nodules, ulcers, or rarely, swellings or vesicles. However, it usually presents as red to violaceous papules and nodules [1], as seen in the present case. Other uncommon presentations that have been reported include LC presenting as lesions of erythema multiforme or mimicking urticaria pigmentosa [1,4].

LC is a local manifestation of systemic leukaemia; therefore, the treatment of choice is the management of the underlying malignancy. The prognosis of patients diagnosed with LC is poor, as most patients have extramedullary involvement at the time of diagnosis. Patients with AML, as well as LC, may have a median two-year survival rate of around 10%, which is lower than that seen in patients with AML without LC [5,6].

Present case study although represents the investigation which had abnormalities, the cutaneous lesions were the only presenting complaint, which ultimately led to the diagnosis of the malignancy. Prompt recognition of LC is important as it might be the sole indicator of the underlying haematological malignancy at times. Moreover, its presence indicates a poor prognosis, hence its detection also helps in deciding the management.

Sincerely,

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**PARTICULARS OF CONTRIBUTORS:**
1. Junior Resident, Department of Dermatology and Venereology, Institute of Medical Sciences, BHU, Varanasi, Uttar Pradesh, India.
2. Senior Resident, Department of Dermatology and Venereology, Institute of Medical Sciences, BHU, Varanasi, Uttar Pradesh, India.

**NAME, ADDRESS, E-MAIL ID OF THE CORRESPONDING AUTHOR:**
Dr. Aanchal Agarwal,
Flat No. 106, Ganpati Apartments, Nagwa Lanka,
Varanasi-221005, Uttar Pradesh, India.
E-mail: draanchalagarwal596@gmail.com

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