CUTANEOUS MANISFESTATIONS OF CHRONIC MYELOCYTIC LEUKEMIA (CML): LEUKEMIA CUTIS

Jamie Hur DO, Hemanth Neeli, MD

Department of Internal Medicine, Suburban Community Hospital, East Norriton, PA, 19401

Background

- Leukemia cutis (LC) is a cutaneous manifestation of any type of leukemia. LC can be challenging to clinically separate from other skin lesions.[1] LC has been described in patients with acute myeloid leukemia, myelodysplastic syndromes, and myeloproliferative disease including chronic myelocytic leukemia (CML).[2]
- It is an uncommon skin manifestation of CML. It has seen up to 6 to 8 % of patients.[2]
- And, it usually indicates toward blastic transformation of the disease.[2]

Chief complaints

A 65 year-old female with past medical history of “leukemia” presented to the emergency department with concerns of shortness of breath and multiple nontender skin nodules for 2 weeks

Case Report

- Patient was diagnosed with lower respiratory tract infection as well as uncontrolled CML with severe leukocytosis (WBCs >420,000). She as initially diagnosed with chronic phase CML in 2015 but refused to take TKI therapy and inconsistently took hydroxyurea 2 g twice daily.
- She expressed a concern of her skin nodules in her left calf and left arm. It was nontender to touch and ultrasound showed a complex subcutaneous fluid collection approximately 3 cm below the popliteal fossa which initially read as sebaceous cysts or small abscesses.
- The punch biopsy of skin nodule showed perivascular lymphocytes, and deep dermal and subcutaneous cellular Infiltrate. The infiltrating cells appeared to be largely composed of differentiating/differentiated myeloid cells, suspicious for involvement by the known chronic leukemia.
- Later, the bone marrow biopsy showed accelerated phase of CML. She was started with Desatinib 100 mg per day shortly after discharge at oncology office which showed excellent hematological response..
- Currently, she is taking hydroxyurea and continued to have skin nodules without any significant changes in locations and size.

Labs/Imaging

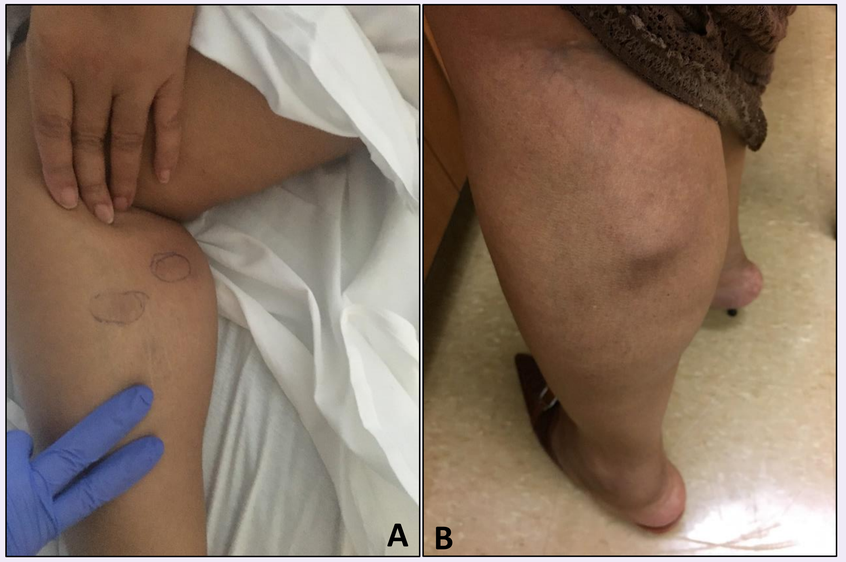

Image 1.. A. Skin nodules in left leg in March 2019 B. Skin nodules in July 2019. Increased in size noted

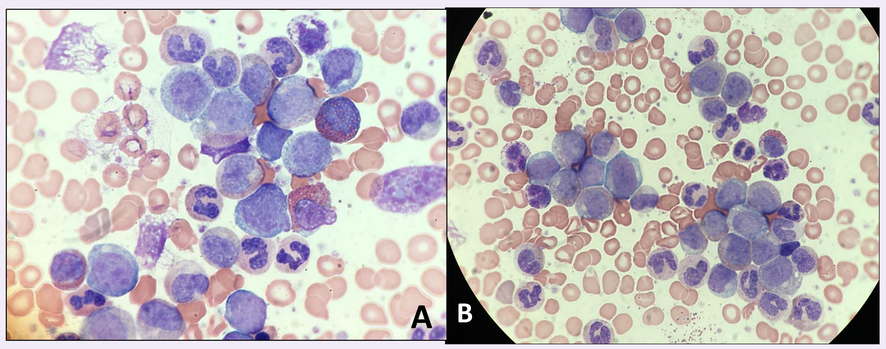

Image 2. Peripheral blood smear. Metamyelocyte sand promyelocyte, myelocytes, basophilia and granulocyte noted H&E X40

Vitals and Labs

BP 114/73, Pulse 73, O2 Sat 94% on room air, Temp 98 F

LAP score 38 normal limit, Uric acid 7.9

WBC>390.00 Hgb 7.3 Hct 23.6 platelets 828

Bone marrow biopsy – marrow cellularity 100% with marked myeloid and megakaryocytic hyperplasia and 14% blasts consistent with accelerated phase CML

Discussion

- Leukemia cutis is a rare condition. While AML and T cell leukemia show the highest incidences (50-70%) of LC, it is an uncommon to see LC in CML.3 LC can also present as the sole presenting features of the disease.[3]
- However, the pathogenesis of LC is not well understood.[1] Chemokine receptors such as CCR4 and adhesion molecules such as cutaneous lymphocyte associated antigen (CLA) have been linked to play important role by recruiting leukemic cells into skin based on skin homing.[1]
- Lesions are usually represented as papules, and nodules, indurated of hemorrhagic plaques, bullae and palpable purpura. The lesions can have various colors.[3]

Conclusion

The skin can be a window to the blood malignancies. An understanding of the various presentations of leukemia cutis and a complete history of the patient is essential as lesions can easily be confused with other diagnoses. It is important to recognize the skin manifestation of leukemia which can be a poor prognostic factor for CML and may be indicative of transformation to the blast phase.

References

- Reference
- 1. Cho-Vega, J. H., Medeiros, L. J., Prieto, V. G., & Vega, F. (2008). Leukemia Cutis. American Journal of Clinical Pathology, 129(1), 130–142. doi: 10.1309/
- 2. Singhal, M., Singh, S., Kumar, R., & Raina, V. (2010). Extensive cutaneous manifestations: Presenting feature of chronic myelocytic leukemia in second blast crisis. Indian Journal of Dermatology, 55(3), 265. doi: 10.4103/0019-5154.70682
- 3. Ansell, J. E., Bhawan, J., & Pechet, L. (1980). Leukemia Cutis in Blastic Transformation of Chronic Myelocytic Leukemia: TdT Positive Blasts and Response to Vincristine and Prednisone. Journal of Cutaneous Pathology, 7(5), 302–309. doi: 10.1111/j.1600-0560.1980.tb01199.x

Suburban Community Hospital

Extraordinary People. Extraordinary Care.