

Erythema Nodosum: A Presenting Sign of Acute Myelogenous Leukemia

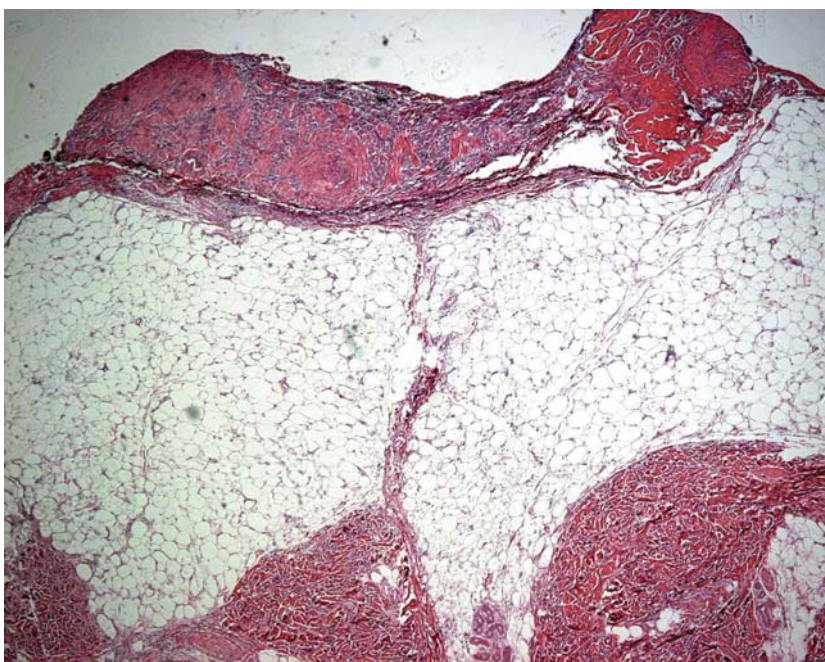
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A 15-year-old girl presented to our institution with erythema nodosum. Results of a workup for underlying disease revealed acute myelogenous leukemia. Underlying malignancy should be investigated in patients presenting with erythema nodosum. Cutis. 2005;76:114-116.

Few reports exist of acute leukemia associated with erythema nodosum, and most such cases were not proven by biopsy results. Our case suggests that an underlying malignancy should be included in the differential diagnosis for patients presenting with erythema nodosum.

Case Report

A 15-year-old girl with a history of myelodysplasia, congenital subaortic stenosis, and associated heart failure presented with a 4-month history of intermittent painful lesions on her upper and lower extremities, with associated fever and fatigue. The nodules initially responded to oral antibiotics (amoxicillin/clavulanate for 2 weeks, then ciprofloxacin for 2 weeks) prescribed by her family physician; however, the lesions recurred despite further treatment with antibiotics. At the time of presentation to our clinic, the patient was taking no medications. Results of an examination revealed tender subcutaneous nodules measuring



Septal pannicular inflammation consistent with erythema nodosum (H&E, original magnification $\times 20$).

2 to 4 cm in diameter, with overlying erythema in the affected areas.

An incisional biopsy of one of the nodules was performed. Results of a microscopic examination of the skin biopsy specimen revealed septal panniculitis consistent with a diagnosis of erythema nodosum (Figure). Results of special stains and cultures for microorganisms (ie, bacteria, mycobacteria, fungi) were negative. Results of direct immunofluorescence showed nondiagnostic inflammatory reaction, with diffuse deposition of fibrinogen throughout the deep dermis and panniculus.

Results of a complete blood cell count and blood smear showed acute myelogenous leukemia with a predominantly monocytic pattern. Results of a bone marrow biopsy showed trisomy 8, unbalanced 1;7 translocation. Results of a lumbar puncture were within reference range.

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Malignancies Associated With Erythema Nodosum

Leukemias

- Acute granulocytic leukemia¹
- Acute monocytic leukemia²⁻⁴
- Acute myeloblastic leukemia⁵
- Acute myelogenous leukemia^{6,7}
- Acute promyelocytic leukemia^{8,9}
- Acute stem cell leukemia⁴
- Aleukemic leukemia¹⁰
- Chronic granulocytic leukemia^{4,11}
- Chronic lymphocytic leukemia^{4,12,13}
- Chronic myelogenous leukemia¹⁴
- Chronic myelomonocytic leukemia^{15,16}
- Hairy cell leukemia¹⁷
- Monoblastic leukemia¹⁸
- Myelogenous leukemia¹⁹

Lymphomas

- B-cell lymphoma²⁰
- Hodgkin disease²¹⁻³²
- Lennert lymphoma³³
- Non-Hodgkin lymphoma^{32,34-37}
- T-cell-rich B-cell lymphoma³⁸

Solid Malignancies

- Adenocarcinoma of the colon³⁹
- Carcinoma of the uterine cervix⁴⁰
- Disseminated Kaposi sarcoma⁴¹
- Gastric centrofollicular lymphoma⁴²
- Metastatic pancreatic carcinoma⁴³
- Renal cell carcinoma⁴⁴

The patient was hospitalized and started receiving chemotherapy (cytarabine and a protocol drug regimen) for the leukemia. Her skin lesions cleared after initiation of chemotherapy. Subsequently, multiorgan failure developed, and she died 2 months after presentation.

Comment

Erythema nodosum is most often associated with a reaction to drugs or infection. Our patient had

underlying acute myelogenous leukemia, and erythema nodosum was the presenting sign. Erythema nodosum has been reported to be associated with chronic and acute leukemias, lymphomas, and solid malignancies (Table).¹⁻⁴⁴ Underlying malignancy should be considered as a possible cause of erythema nodosum.

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