Introduction:
- Erythema nodosum (EN) is a type of panniculitis affecting subcutaneous fat of the skin.
- In clinical practice, it is mostly believed to be self-limiting isolated skin disease or a reaction to infections, drugs, inflammatory bowel disease, pregnancy state or autoimmune disorders.
- Extensive workup for underlying etiology is generally not obtained.
- Rarely, it can be the first sign of an underlying malignant process.

Case presentation:
- A 23-year-old female presented to hospital with a 4-week history of recurrent painful skin nodules on the ventral aspect of her shins and forearms associated with subjective fever, chills, sore throat, cough, arthralgia, intense fatigue and decreased appetite since her trip to Florida 5 weeks ago.
- She was seen in Dermatology office a week ago and a punch biopsy was obtained with pending results. Physical exam revealed no fever, multiple warm, tender, indurated, erythematous skin nodules predominantly on lower extremities and a solitary healing oral ulcer.
- Labs showed pancytopenia; WBC (3.3), RBC (1.86), Hemoglobin (6.8) and platelets (59), and elevated inflammatory markers; CRP (171), ESR (21).

Discussion:
- Less than 1% cases of EN are attributed to malignancies.
- Hodgkin lymphoma is the most common malignancy associated with EN while AML is extremely rare with approximately 10 reported cases in the last 50 years in English Literature. Only a few of these cases have been proven by biopsy.
- Definitive diagnosis requires a biopsy to rule out Leukemia Cutis or Sweet syndrome, which are more commonly associated with AML.
- EN is believed to result from either a hypersensitivity reaction to malignant cells or inflammation triggered by cytokines released by leukemic cells. EN can coincide or appear shortly before the diagnosis of AML and resolves with chemotherapy. Recurrence of EN often signifies relapse of AML.
- This case illustrates that EN can be a rare paraneoplastic cutaneous manifestation of AML. It is crucial for physicians to obtain comprehensive history and perform a systematic investigation to rule out all possible etiologies of EN including malignancy.

References:
3) https://www.researchgate.net/publication/321233382_Acute_myeloid_leukemia_presenting_as_erythema_nodosum_A_case_report