Spontaneous Tumor Lysis Syndrome secondary to Two Primaries at Presentation

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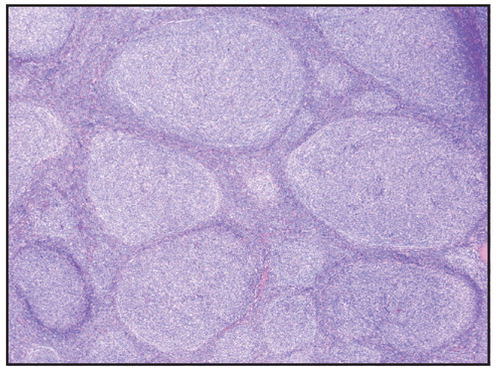
CASE

The patient is a 58 year old male with no medical history, who presented to the Emergency Department with altered mental status and chest wall pain. On examination, a palpable mass was noted on the chest wall, with laboratory findings to include profound hypercalcemia, hyperphosphatemia, and hyperuricemia, as well as acute kidney injury. Imaging revealed lytic bone lesions, in addition to a hepatic mass and ascites. Diffuse lymphadenopathy was noted in the mediastinum and axilla.

Treatment with furosemide and calcitonin was immediately initiated for reduction of hypercalcemia. Rasburicase was used for uric acid degradation and reduction.



Non-Hodgkin's follicular lymphoma

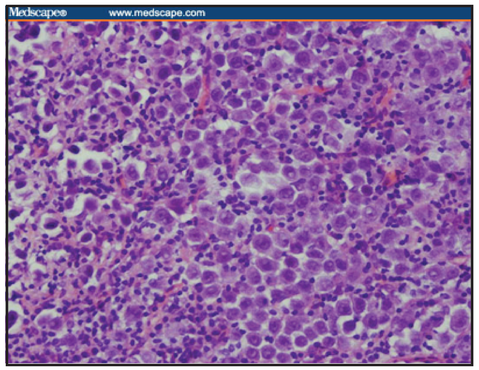
DISCUSSION

Symptoms of tumor lysis syndrome (TLS) include nausea, vomiting, diarrhea, lethargy, heart failure, cardiac dysrhythmias, seizures, muscle cramps, syncope, and sudden death. Laboratory TLS is defined by a 25% increase in uric acid, potassium, phosphorus, or evidence of hypocalcemia. TLS is clinically defined as laboratory TLS plus one of the following: increased serum creatinine, 1.5 times the upper limit, or cardiac arrhythmia, or seizure. TLS is an oncologic emergency caused by massive tumor cell lysis with the release of large amounts of potassium, phosphate, and nucleic acids into the systemic circulation. Catabolism of the nucleic acids to uric acid leads to hyperuricemia, which can result in the precipitation of uric acid in the renal tubules. Rapid tumor breakdown often leads to hyperphosphatemia which can also cause secondary hypocalcemia. In addition, precipitation of calcium phosphate in the heart may lead to cardiac arrhythmias.

Evaluation for a lymphoproliferative versus lymphoplasmacytic process was initiated with lymph node biopsy, which was compatible with non-Hodgkin follicular lymphoma. Prior to chemotherapy, bone marrow biopsies were obtained, and extensively involved by metastatic, poorly differentiated adenocarcinoma. Based upon this immunoprofile, possible primary sites include the pancreas, biliary tract, and upper gastrointestinal tract. Bone marrow biopsies also showed evidence of focal involvement by follicular lymphoma. Thus, this patient demonstrated two primary malignancies at the time of diagnoses.

CONCLUSION

The profound tumor burden with extremely high proliferation rate, secondary to two primary malignancies at presentation, was the most likely etiology of spontaneous tumor lysis syndrome (sTLS) in this patient. A series review including 33 patients with Non-Hodgkin's lymphoma revealed only three cases of sTLS. As TLS is an oncologic emergency, it is imperative that the hospitalist maintain the ability to recognize this clinical scenario, even outside of a confirmed diagnosis of malignancy, in order to provide adequate therapy regarding electrolyte imbalances, renal failure, and prevention of arrythmias in this rare disease entity.



Poorly-differentiated adenocarcinoma of unknown origin