CLINICAL VIGNETTE

A Case of Abdominal Distension, Weight Loss and Muscle Atrophy

Renata Selak Stankovic, MD

Case Presentation

A 56-year-old female presented with 10-15 lbs weight loss over 6 months. She also reported abdominal distention for about 7-8 months. She stated that her symptoms started after a bad case of the flu that lasted for about 3 weeks. In addition to weight loss she noticed significant muscle weakness and atrophy despite healthy intake. She also reported nocturnal muscle cramps, awakening her 2-3 time per week at 4 am. She tried tonic water without improvement. Other symptoms included occasional LUQ abdominal pain which worsened with heavy foods. She was free of nausea, vomiting, fever, chills, night sweats, or bloody stools.

Her past history is significant for hypertension and postmenopausal symptoms with a prior C-section. Her only medication was Amlodipine. She did not use any alcohol or tobacco.

Her vital signs included, BP 128/74| Pulse 84| Temp 37.1 °C | Ht 5' 4" | Wt 151 lb 3.2 oz | SpO2 95% | BMI 25.95 kg/m². Exam was remarkable for left supraclavicular lymphadenopathy and marked splenomegaly at least 15 cm below the left costal margin. There was diffuse muscle wasting and heme positive stool.

Labs included: WBC 4.5, Hgb 10.1, Plts 89, MCV of 84. Differential showed 5% atypical mononuclear cells, BUN and creatinine were 19 and 0.8. Calcium was 9.1. LDH elevated at 571, with normal uric acid. Her acute hepatitis panel was negative, as well as her HIV and viral hepatitis serologies.

Abdominal ultrasound confirmed marked splenomegaly at 26.8 cm as well as trace ascites and a left pleural effusion. She was referred to Hematology/Oncology and peripheral blood flow cytometry showed circulating large B-cell neoplasm expressing CD20 with a surface lambda light chain restriction. PET-CT showed significant FDG-avid adenopathy above and below her diaphragm with a marked splenomegaly, a left tonsillar mass, a small left pleural effusion, as well as small pelvic ascites.

Ultrasound-guided core biopsy of her left supraclavicular adenopathy revealed a germinal center diffuse large B-cell lymphoma, CD20 positive, and 14:18 chromosomal translocation. Her EGD and colonoscopy showed multiple masses throughout the duodenum as well as the terminal ileum, severe nodularity with prominent Peyer's patches as well as a prominent ileocecal valve with protruding terminal ileal tissue.

Biopsies of a duodenal mass, terminal ileum and ileocecal valve all showed follicular lymphoma, follicular pattern grade 2.

Because of her significant tumor burden, she was admitted to the hospital to expedite her workup and treatment. Bone marrow biopsy showed no marrow elements, and associated flow cytometry showed no discrete monotypic B-cell population. LP showed no discrete population of B-cells on flow cytometry and negative cytology.

MRI of the brain was unremarkable as well as echocardiogram and she started treatment with Rituxan dose-adjusted EPOCH

Discussion

This patient's abdominal distension and massive splenomegaly was due to follicular lymphoma (intestinal) with histologic transformation to diffuse large B-cell lymphoma (peripheral adenopathy), germinal center type. There were circulating tumor cells detected in the blood, negative bone marrow with baseline cytopenia from massive splenomegaly.

Diffuse large B cell lymphoma is the most common histologic subtype of non-Hodgkin's lymphoma and comprises approximately 25% of all cases. The median age of presentation is in the 7th decade, but it can occur at any age.

In most cases, the cause is unknown. Almost 40% have more localized disease, with 60% of patients presenting with advanced stage diffuse large B cell lymphoma (usually stage III or IV disease). Bone marrow involvement is seen in about 30-40 % of cases and almost 30% of patients present with systemic "B" symptoms (fever, weight loss, night sweats).

Typically the first sign in diffuse large B cell lymphoma is a painless lymph node swelling in the neck, armpit or groin. The disease can affect other parts of the body with the stomach/ gastrointestinal tract the most common extra nodal site of disease.

Diffuse large B cell lymphoma represents 30-40% off all extranodal lymphoma.[1] Patients with gastric lymphoma usually present with nonspecific symptoms such as epigastric pain, weight loss, decreased appetite, nausea, vomiting and occult

gastrointestinal bleeding. Extranodal involvement is common in patients presenting with stage I/II disease.

The diagnosis of diffuse large B cell lymphoma is established on excisional tissue biopsy, most commonly a lymph node. The specific subtype is based on morphology and immunophenotyping. The spleen is a common site of lymphoma dissemination as a secondary lymphoid organ and can be involved with any lymphoid malignancy. However, splenomegaly as the predominant presenting symptom is fairly uncommon.

Some lymphoma subtypes may present with isolated splenomegaly, including diffuse large B-cell lymphoma, hairy cell leukemia, chronic lymphocytic leukemia, prolymphocytic leukemia, mantle cell lymphoma, splenic marginal zone lymphoma and Waldenström macroglobulinemia. Isolated presentation with splenomegaly is more common in less aggressive lymphoma. Patients may seek medical attention due to early satiety and/or progressive discomfort in the left upper quadrant. Splenomegaly, weight loss and malaise is very suggestive of underlying neoplastic condition and requires further diagnostic investigation. The most common cause of massive splenomegaly is lymphoma.[2]

Muscle atrophy occurs with Non-Hodgkin's lymphoma, especially in > 60 year old females. Muscle weakness and painless muscle wasting can be due to muscle infiltration in systemic lymphoma. Muscle involvement is found in 1.5-5% of extranodal lymphoma cases.[3] However primary skeletal muscle lymphoma is quite rare and accounts for less than 1% of cases.[4] Muscle spasms are common with lymphoma. The differential diagnosis of diffuse large B cell lymphoma includes other types of lymphoma, carcinoma and melanoma.

The prognosis depends on histologic type, stage and treatment. Initial laboratory assessments should include a complete blood cell count and differential; comprehensive metabolic panel; lactate dehydrogenase and uric acid: β2 microglobulin levels; hepatitis B and C serology and serum protein electrophoresis with immunofixationmis also recommended.

CT scans of the chest, abdomen, and pelvis are used to stage disease and to assess for other areas of involvement. Fluorodeoxyglucose positron emission tomography (FDG-PET) imaging is superior in detecting extra nodal involvement. Advanced stage diffuse large B cell lymphoma is treated primarily with systemic chemotherapy and immunotherapy with rituximab. The chemotherapy depends upon the molecular subtype. General treatment principles for advanced stage diffuse large B cell lymphoma apply to most disease presentations and patient populations. Involvement of other, uncommon primary sites of disease, may involve more unique treatment plans.

REFERENCES

1. **Suresh B, Asati V, Lakshmaiah KC, Babu G, Lokanatha D, Jacob LA, Lokesh KN, Rudresh AH, Rajeev LK, Smitha S, Anand A, Patidar R, Premalata CS**. Primary gastrointestinal diffuse large B-cell lymphoma: A prospective study from South India. *South Asian J Cancer*. 2019 Jan-Mar;8(1):57-59. doi: 10.4103/sajc.sajc_52_18. PubMed PMID: 30766857; PubMed Central PMCID: PMC6348773.
2. **Djokic M, Plesnik B, Petric M, Trotovsek B**. Massive splenomegaly due to B-cell lymphoma: A case report. *Int J Surg Case Rep*. 2018;48:76-78. doi: 10.1016/j.ijscr.2018.05.013. Epub 2018 May 29. PubMed PMID: 29885916; PubMed Central PMCID: PMC6041427.
3. **Burton E, Schafernak K, Morgan E, Samet J**. Skeletal Muscle Involvement in B-Cell Lymphoma: Two Cases Illustrating the Contribution of Imaging to a Clinically Unsuspected Diagnosis. *Case Rep Radiol*. 2017;2017:2068957. doi: 10.1155/2017/2068957. Epub 2017 Apr 30. PubMed PMID: 28540097; PubMed Central PMCID: PMC5429926.
4. **Hatem J, Bogusz AM**. An Unusual Case of Extranodal Diffuse Large B-Cell Lymphoma Infiltrating Skeletal Muscle: A Case Report and Review of the Literature. *Case Rep Pathol*. 2016;2016:9104839. doi: 10.1155/2016/9104839. Epub 2016 May 10. PubMed PMID: 27247818; PubMed Central PMCID: PMC4877472.

Submitted April 12, 2019