Clinico-Pathologic Conference: November 24th, 2020, 8 am – 9 am

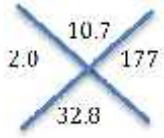
Chief Residents: Margaret Jones, MD & Alexander Nasr, MD

Chief Complaint: weight loss

Initial Presentation to the PMD

- 15-year-old male with a history of mild intermittent asthma and eczema presenting with weight loss.
- His symptoms have progressed over the past 6 months.
- 60-pound weight loss estimated by family over the last 6 months associated with decreased appetite
- No fevers or recent illnesses
- Night sweats noted over the last week
- Abdominal pain present initially, but improved with Miralax
  - No abdominal pain for the last two months
- No nausea, vomiting, constipation, diarrhea or dysphagia endorsed
- Reports urinating more frequently, often every hour
  - No dysuria or hematuria reported

PMD Workup

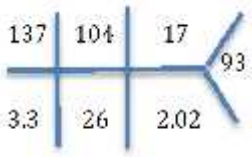


Segs: 70%
Bands: 0%
Lymphs: 28%
Mono: 2%
Eos: 0%
Baso: 0%

ANC: 1.40
ALC: 0.56

Urine pH: 7.0
U Protein: neg
U Blood: neg
U Glucose: neg
U Ketone: neg
U Bili: 2.0
U Nitrite: neg
U LE: neg
U Spec Grav: 1.009

TSH normal



Ca: 10.8
Alb: 3.9

Total Protein 8.1
ALT 11
AST 19
Total Bili 0.4
Alk Phos 96

Referred to CCHMC ED for further evaluation based on these results

Pertinent ROS

- Constitutional: Weight loss. No fatigue or fevers
- HENT: No rhinorrhea or nasal congestion. No conjunctival injection.
- Respiratory: No cough, chest pain or dyspnea
- GI: Decreased appetite. No abdominal pain. No constipation. No nausea or vomiting
- GU: Increased urinary frequency. No dysuria or hematuria
- Hematology: No easy bruising/bleeding.
- Neurologic: No headaches, weakness or paresthesias
- MSK: No muscle aches, joint swelling or join pain
- Skin: No rashes.
- Allergy/Immunology: No recurrent infections.

Admission Physical Exam

- *Vitals:* **Temp** 37.0C **HR** 72 **RR** 24 **BP** 106/88 **SpO2** 100% **Weight** 53.7 kg **Height** 163.5cm
- *General*: Comfortable and talkative. Alert and well appearing
- *Skin*: Warm, well perfused. No rashes. Pallor present
- *HEENT:* No scleral icterus, TMs normal bilaterally. MMM, posterior pharynx non-erythematous
- *Neck*: Supple with full range of motion. No adenopathy
- *Lungs*: CTAB with no increased work of breathing
- *Cardiac*: RRR, normal S1/S2, no murmur. 2+ distal pulses
- *Abdomen*: Normal bowel sounds. Soft, non-distended and non-tender. No rebound or guarding. No masses. Spleen tip palpable
- *GU*: normal male external genitalia
- *Musculoskeletal/Ext*: normal muscle bulk with no contractures or deformities
- *Neurological*: Alert. No cranial nerve deficit. Normal muscle tone. Normal coordination and gait.

PMH/PSH/Meds/Allergies

Mild intermittent asthma: rarely uses albuterol
Eczema: well controlled with daily moisturizers
Unremarkable PSH
Meds: Albuterol PRN
Allergies: NKDA
IUTD

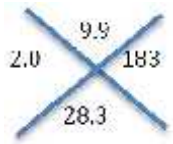
Family History

Grandfather on dialysis for diabetic nephropathy

Social History

Lives at home with parents. Enjoys playing video games. High school student with good grades. Has multiple close friends. Not sexually active. No drug, tobacco or alcohol use.

ED Workup (Index Admission)



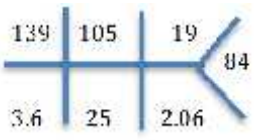
Segs: 55%
Bands: 0%
Lymphs: 38%
Mono: 7%
Eos: 0%

ANC: 1.10
ALC: 0.76

PT: 11.9
INR: 1.17
PTT: 36
Fibrinogen: 213

LDH: 202
Uric Acid: 3.9

ESR: 32
CRP: 0.41



Ca: 10.6
Phos: 4.2
Alb: 3.7

Urine NGAL: 361

Imaging: CXR normal and abdominal US with splenomegaly

ED Care/Disposition: Started on Plasma-lyte and admitted for further management and evaluation of AKI.

Hospital Course (Day 1)

Imaging:

- CT Chest/Abdomen/Pelvis:
  1. Patchy areas of groundglass opacity in a predominantly upper lobe distribution
  2. Splenomegaly

Labs Obtained:

Urine protein/creatinine ratio: 1.26
Ferritin: 86.6
TIBC: 244
Iron: 28
% Saturation: 11%
Reticulocyte count: 1.8%
HIV Ag/Ab combo negative
CMV PCR negative
EBV PCR negative
HHV6 PCR negative
Parvovirus PCR negative
Ds-DNA negative
C3 normal
C4 normal

Hospital Course (Day 2-5)

- Renal profiles and CBCs trended daily
- CBCs continued to demonstrate leukopenia
- Renal profiles showed increasing calcium
- PTH undetectable

Consults:

Pulmonary: Place PPD, send IgE level, obtain PFTs and plan for bronchoscopy
Rheumatology: Send ANA, immunoglobulins, ANCA, anti-GBM, ACE and lysozyme
Infectious Disease: Send fungal immunodiffusion, urine histo antigen, histoplasma complement fixation, Blastomyces antigen and fungal blood culture
Heme-Onc: Plan for bone marrow biopsy

Additional Labs obtained:

PPD normal
IgE level normal
PFTs: Moderately decreased diffusion capacity
Blastomyces antigen: pending
Urine histo antigen: pending
Histo C-F: pending
Fungal blood culture in process
ANA: negative
IgG and IgM normal
ANCA: pending
Anti-GBM: pending
ACE: pending
Lysozyme: pending

Procedures:

Bronchoscopy: no anatomical abnormalities and no excess secretions. BAL sample to be analyzed
Bone Marrow Biopsy: Normocellular marrow for age with trilineage hematopoiesis

A kidney biopsy was also obtained. Based on the results of these procedures and pending lab tests, a final diagnosis was made.

What test/s supported the diagnosis and what is your final diagnosis?

Please submit your answers via the QR code shown below.

CLINICO-PATHOLOGIC CASE GRAND ROUNDS
November 24th, 2020

Name: _____

Level of Training/Current Position: _____

What test confirmed the diagnosis? _____

What is your final diagnosis? _____

I had prior knowledge about this case (circle one):
Yes No