August 2014 Case Study

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CC:  
Fatigue

HPI:  
A 19-year-old division II collegiate tennis athlete presented with 1 week history of fatigue and bilateral tender cervical lymph nodes. Review of systems was positive for headache, myalgias, and sore throat. He denied fever, night sweats, rhinorrhea, cough, abdominal pain, vomiting, diarrhea, or rash. He had good fluid intake. He also admitted to an intentional 40-pound weight loss over the past 4 months. He did this by restricting his intake of processed foods while increasing his physical activity to prepare for the upcoming tennis season.

His past medical, surgical, and social history was otherwise negative. His mom was recently diagnosed with breast cancer.

Physical Examination:  
VS: Height 5’10”; Weight 150 pounds; BMI 21.4; afebrile, HR: 50, BP: 100/68. Orthostatic BPs were normal.  
Gen: thin and tired appearing  
HEENT: pale palpebral conjunctiva and gums; dark circles under eyes; oropharynx with mildly erythematous tonsils but no tonsillar hypertrophy, exudates or other oral lesions  
Neck: FROM with pain on extension. Multiple soft, tender, non-erythematous anterior and posterior cervical nodes up to 2x1 cm.  
CV: I/VI systolic murmur at LSB  
Lungs: CTAB, no wheezing or crackles  
Abdomen: soft, non-tender, non-distended, active bowel sounds, no hepatomegaly; spleen non-tender and palpated at the 12th left rib.  
Skin: no rashes or bruises

Differential Diagnosis:  
Strep pharyngitis  
Mononucleosis  
Other Viral illness  
Anemia (iron deficiency, folate/B12 deficiency, anemia of chronic disease, blood loss)  
Malignancy
Lab studies:
Rapid strep: negative
Monospot: positive
CBC: WBC count 4,300/mm³ (12% PMNs, 17% bands, 61% lymphs, 9% monos), Hgb 10.5g/dL, Hct 31.6,
Platelets 110,000/mm³, MCV 89, RDW 15.5%, RBC count 3.54, reticulocyte count 1.9%
Serum Iron: 78 (65-175)
TIBC: 265 (250-450)
Ferritin: 278 (31-294)
CMP: WNL
Phosphorus: 4.2 (2.5-4.7)
Prealbumin: 26 (23-48)
Vitamin B12: 590 (215-900)
Folate: 16.9 (>5.5)
Mentzer Index (MCV/RBC count): 25

At this point, the patient admitted that he was severely restricting his dietary intake and had actually
lost about 70 pounds.

Diagnosis:
1. Acute infectious mononucleosis
2. Iron Deficiency Anemia
3. Eating Disorder Not Otherwise Specified (DSM4) or Unspecified Feeding/Eating Disorder (DSM5)

Treatment:
The patient was instructed to rest. He was restricted from sports participation due to mononucleosis
and due to his poor nutritional status. He was started on supplemental ferrous sulfate 325mg PO TID
and instructed to take it with citrus containing foods to increase absorption. He was referred to the
sports medicine dietician and seen frequently in the training room and in the clinic by the team
physicians.

Outcome:
Three weeks later his energy levels had improved and his spleen was no longer palpable. His PO intake
was improving and he was allowed to start a step-wise progression back to tennis.
Four months later his weight had increased 6 pounds and he had no fatigue. He admitted to taking his
iron infrequently. He had met with the sports dietician 5 times and was able to increase his dietary
intake to 2300-2500 Kcal/day. His labs normalized to show:
CBC: Hgb 13.9, Hct 39.9, WBC 8.2, and platelets 176. He had a normal differential.
RDW was 12.8% and ferritin was 81.
He was able to successfully participate in tennis in the spring.
Discussion:

Mononucleosis is caused by the Epstein-Barr Virus (EBV). The classic triad of symptoms includes fever, pharyngitis, and posterior lymphadenopathy.\(^1\) A CBC with differential often shows an increased number of atypical lymphocytes. The spleen is enlarged in many patients and splenic rupture occurs in 0.1-0.2% of patients, typically in the first three weeks of the illness.\(^2\) The treatment for mono is rest, fever control, and hydration. Corticosteroids may be used if tonsillar hypertrophy is causing airway obstruction.\(^3\) Patients are typically allowed to return to play 3-4 weeks from the onset of symptoms as long as they feel well.\(^1\)

This patient also had iron deficiency anemia. Typically, patients with iron deficiency anemia have low Hgb and Hct, elevated RDW, low MCV and low Ferritin. This patient had a falsely elevated ferritin because ferritin is an acute phase reactant and he had acute infectious mono at the time his labs were initially checked. The Mentzer index can help distinguish Iron deficiency from thalassemia.\(^4\) The Mentzer index is calculated as the MCV divided by the RBC count. If it is over 15, iron deficiency is suspected, while a Mentzer Index < 12 is suggestive of thalassemia. Iron deficiency anemia is treated with ferrous sulfate 325mg PO TID. Side effects of supplemental iron include GI distress and constipation so sometimes stool softeners or a lower dose may be required.\(^5\)

Eating disorders are more common in females than in males though 3-10% of male elite athletes have disordered eating.\(^6\) In addition, males are less likely to seek medical attention for disordered eating.\(^7\) Thus, it is important to keep this diagnosis in mind when working with male athletes. Behavior changes such as poor self-esteem, slumped posture, and lack of eye contact may be clues to patients with disordered eating.\(^8\) Labs may be normal which make the diagnosis even more challenging.\(^9\) The patient in the above case had a diagnosis of Eating Disorder Not Otherwise Specified based on DSM-4 criteria or an Unspecified Feeding or Eating Disorder (UFED) based on DSM-5 criteria. UFED is the diagnosis given to patients whose behaviors cause clinically significant distress or impaired functioning but who do not meet full criteria for other eating disorders.\(^10\)

Recognizing and managing patients with eating disorders is difficult, especially since there is no standardized return to play criteria for males with eating disorders. The first step for the team physician is making sure that the athlete is medically stable and does not need immediate hospitalization. If an athlete is not acutely sick and ready to return to sport, the athlete should be encouraged to maintain sufficient nutrition and avoid any disordered eating behavior.\(^11\) The athlete should maintain a normal BMI, especially in leanness sports or sports with weight classes. In order to assist an athlete in understanding and meeting these goals, a written contract may be helpful. The contract should include specific criteria the athlete must meet in order to practice and compete.\(^12\) It should be reviewed and signed by both the athlete and the physician. The athlete should also meet with a dietician for guidance on proper fueling for his sport. In addition, the athlete may have an underlying psychological or emotional issue that may need to be addressed with a counselor or psychologist. This is especially important in order to prevent relapse of any disordered eating.\(^11\) Patients who have disordered eating benefit most from working with a multi-disciplinary team of physicians, sports dieticians, athletic
trainers, psychologists, and coaches.\textsuperscript{13,14} All members of the team should communicate frequently and honestly.

References: