Case Report – HIV Positive Male with Fevers

Tali Reeis-Martin, MD

HISTORY

The patient is an HIV positive male in his 40s, who presented to the emergency department with a one week history of fever and chills. The highest fever at home was noted to be 103°. The patient denied any chest pain, but did complain of shortness of breath occurring at rest, and worsening on exertion. He denied any palpitations, abdominal pain, nausea, or vomiting. He denied any dysuria or hematuria. He has normal bowel movements. The patient stated that he has purple colored vascular lesions, one on his leg and one on his back, which appeared over the past few months. These lesions were diagnosed as cutaneous Kaposi’s sarcoma.

His past medical history is significant for being HIV positive since 1998, having Pneumocystis carinii pneumonia in 2003, Esophageal Candidiasis, Varicella Zoster, Cutaneous Kaposi's sarcoma, and episode of Giardia lamblia, Anemia of Chronic Disease, and a history of neutropenia. His last absolute CD4 count was noted to be 12, and his last viral load was noted to be 40,000 copies.
Medications prior to admission included: HAART (retroviral therapy), Azithromycin, Filgrastim, Erythropoietin, Ferrous gluconate, Vitamin B12, Folic acid, Clotrimazole, Prochlorperazine, Diphenhydramine, Loratadine, and Metronidazole

**PHYSICAL EXAM**

On admission, his vitals were as follows: Temperature: 102°F, blood pressure: 130/80 mmHg, heart rate: 119 beats per minute, respiratory rate: 15 breaths per minute, pulse oximetry: 93% on 3 liters O2 via nasal cannula.

In general he was in no acute distress, but pale appearing. His pupils were reactive to light and accommodation. Extraocular muscles are intact in all directions. Sclera noted to be anicteric. His neck was supple to palpation, without jugular venous distention or lymphadenopathy. Cardiac exam revealed S1 S2 heart sounds with a normal rate and rhythm. No murmurs, rubs, or gallop were noted. On lung exam, there were diminished breath sounds bilaterally, worse on the right than the left. He was noted to have some coarse wheezing. His abdomen was slightly obese, but soft, nontender to palpation, and no organomegaly was noted. Bowel sounds were normal. His extremities had full range of motion, no edema noted, and peripheral pulses were intact. Strength was 5/5 in both upper and lower extremities, and sensation was intact. His skin was notable for Kaposi Sarcoma lesions, one on his back and one on his right thigh. Neurologically, he was alert and oriented to person, place, and time. Cranial Nerves II-XII were grossly intact.

**LABORATORY AND RADIOLOGICAL STUDIES:**

<table>
<thead>
<tr>
<th></th>
<th>Value</th>
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<tbody>
<tr>
<td>Sodium</td>
<td>142 mEq/L</td>
<td>WBC</td>
<td>4,000 mm3</td>
</tr>
<tr>
<td>Potassium</td>
<td>4 mEq/L</td>
<td>Hemoglobin</td>
<td>9.0 gm/dL</td>
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<tr>
<td>Chloride</td>
<td>110 mEq/L</td>
<td>Hematocrit</td>
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<tr>
<td>Bicarbonate</td>
<td>24 mEq/L</td>
<td>Platelet</td>
<td>65,000/UL</td>
</tr>
<tr>
<td>BUN</td>
<td>14 mg/dL</td>
<td>Segmented Neutrophils</td>
<td>50%</td>
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<tr>
<td>Creatinine</td>
<td>1.1 mg/dL</td>
<td>Bands</td>
<td>7%</td>
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<tr>
<td>AST</td>
<td>9 IU/L (H)</td>
<td>Lymphocytes</td>
<td>31%</td>
</tr>
<tr>
<td>ALT</td>
<td>5 IU/L (H)</td>
<td>Monocytes</td>
<td>9%</td>
</tr>
<tr>
<td>Alk Phos</td>
<td>69 IU/L (H)</td>
<td>Prothrombin Time</td>
<td>11.1 sec</td>
</tr>
<tr>
<td>Albumin</td>
<td>2.7 g/dL (L)</td>
<td>Partial Thromboplastin Time</td>
<td>24 sec</td>
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The chest x-ray revealed a slowly progressive interstitial thickening throughout both lung fields. The differential diagnosis includes slowly progressive fibrosis versus an indolent pulmonary infection.
HOSPITAL COURSE

Due to the radiological findings and the high fevers, the patient was started on empiric treatment for community acquired Pneumonia. He received Ceftriaxone 1 gram IV daily and Azithromycin 500 mg IV daily. Blood cultures, sputum gram stain, and sputum culture were obtained before starting antibiotic therapy. The final culture result revealed normal respiratory flora. Sputum for acid fast bacilli (AFB) times three specimens were also obtained, all of which were negative for AFB. Despite treatment, the patient remained febrile with temperatures as high as 103°F. The patient was also treated with Vancomycin for the possibility of methicillin resistant Staphalococcus aureus. A chest x-ray was repeated due to continuing fevers, which demonstrated non specific consolidated changes, but also showed ill defined nodular disease involving the mid lower lung zones bilaterally, on the right greater than the left. This had progressed from the previous study and a high resolution CT scan was recommended.

Figure 2
A high resolution CT scan was obtained and showed diffuse bilateral interstitial opacities, following a peribronchovascular distribution with patchy nodular opacities seen in the periphery. Infectious etiologies could not be fully excluded. Non specific lymph adenopathy through the mediastinum may be related to patient’s HIV.

The pulmonary team was consulted and the patient was taken for a bronchoscopy, which showed an unexpected finding. The patient had purple plaques consistent with Kaposi’s sarcoma, visualized at every segmental and subsegmental bronchus. There was narrowing of the airway in the right middle lobe with approximately an 80% obstruction circumferentially in the lateral segment of the right middle lobe. BAL was sent for both microbiology and cytology. With these results, Oncology was consulted and a decision to start the patient on Doxorubicin was made.

On Admission patient was also noted to have thrombocytopenia. At first it was thought to be due to one of his antiretroviral medications, which was discontinued. His thrombocytopenia continued to worsen despite discontinuation of medication.

Given the low platelet count, Chemotherapy could not be initiated immediately. The patient received IV IgG for his thrombocytopenia, which didn’t seem to improve the platelet count. A few units of platelets were then given for emergent chemotherapy since the patient was not doing well. He had worsening shortness of breath, and his respiratory rate increased to the thirties. The patient refused to be on any type of ventilatory support. It was his decision that if the chemotherapy, did not work, he would like to change his code status to Do Not Resuscitate/Do Not Intubate.

Clinically the patient was getting worse. His breathing was becoming more labored; he was still febrile and tachycardic. His PO intake decreased and his mentation decreased. He was alert but lethargic. Despite his low platelet count Chemotherapy was started but the patient made no progress. Clinically he became even worse. At that point his family decided to make him comfort care and he was transferred to Hospice.

**DISCUSSION**

*Overview:*

Kaposi’s sarcoma was first described in 1872 by Moritz Kaposi as a disease seen in elderly men of the Mediterranean. In 1981, initial reports described it in homosexual men with
AIDS, but recent publications have also reported its incidence in heterosexual males. Receptive anal intercourse has been identified as a risk factor.

Pathophysiology:

Kaposi’s sarcoma, is a low-grade vascular tumor associated with human herpes virus 8. It is the most common tumor arising in HIV-infected persons, and is considered an AIDS-defining illness. It consists of characteristic skin lesions that range from flat to raised purple plaques. These tumors have a rich network of small blood vessels, and red blood cells moving slowly through these channels, thus losing their oxygen and changing in color from red to blue.

Patients with AIDS-related Kaposi’s Sarcoma usually present with cutaneous lesions, mucous membrane lesions, or lymph node involvement. Visceral involvement occurs in 50% of the patients, especially of the gastrointestinal tract. Lung involvement occurs in 20% of the patients and is the most life-threatening form of the disease.

Epidemiology:

Kaposi’s sarcoma is reported as the initial manifestation of the AIDS syndrome in approximately 30% of cases. Overall mortality is approximately 41% with over 60% of patients alive at 1 year and 50% at 22 months. It is over 20,000 times more common in persons with AIDS than in the general population, and over 300 times more common in AIDS than in other immunosuppressed hosts, i.e. renal transplant recipients. The incidence of Kaposi’s sarcoma, both classic and AIDS-related forms, is approximately 15 times greater in men than in women.

Increasing antibody titers against HHV-8 have been associated with an increased risk of developing KS and are additive to HIV infection. This was illustrated in a study of Immunocompromised patients VS. Nonimmunocompromised patients which showed the odds ratio for Kaposis Sarcoma rose with increasing anti-HHV-8 titers and was much greater in the immunocompromised patients, such as HIV and Renal Transplant Patient. (3)

Diagnosis:

Pulmonary Kaposi’s sarcoma is an unusual pre-mortem diagnosis, and its clinical presentation is indistinguishable from opportunistic pneumonia with respect to the symptoms, physical examination results, and laboratory findings
Patients with pulmonary Kaposi’s sarcoma can present with shortness of breath, fever, cough, hemoptysis, or chest pain, and may be asymptomatic, but have an abnormal chest radiograph. Respiratory failure due to pulmonary Kaposi’s sarcoma can occur.

Pulmonary Kaposi’s sarcoma may contribute to respiratory dysfunction in patients with acquired immune deficiency syndrome and with features of pneumonitis.

Opportunistic infections are readily recognized in endoscopic material, but pulmonary Kaposi’s Sarcoma is easily missed. In patients with known Kaposis Sarcoma who present with a respiratory problem, up to 50 percent are due to parenchyma involvement by Kaposis Sarcoma. The median survival in HIV-infected patients with extensive pulmonary Kaposis Sarcoma has been reported to be two to ten months, although individual patients have survived up to several years.

Treatment:

Kaposis Sarcoma is not considered curable. Chemotherapy can be used in treatment but there is concern that aggressive treatment might further depress the immune system. The disease sometimes responds to chemotherapy either with a single agent or a combination of drugs.

In a retrospective review of patients treated with chemotherapy for extensive pulmonary Kaposis Sarcoma, survival for responders was ten months versus six months for nonresponders. Poor prognostic factors include patients with HIV-related opportunistic diseases or advanced HIV infection which would cause decreased tolerance of systemic therapy. (1)

Conclusion:

With the advent of highly active anti-retroviral therapy, the incidence of Kaposis Sarcoma is much lower in this decade. Non-Hodgkin’s lymphoma is now the most common HIV related malignancy.

Questions for discussion:

Would the above patient’s outcome be different if he had been adhering to his original Anti-retroviral therapy without stopping? Numerous case reports and case series have described that Kaposis Sarcoma is not always cured by HAART indicating a rate failure up to 22%, but primarily due to noncompliance. (2)
Would an HHV-8 assay have improved the outcome of this case, and should it be routine for every HIV positive with a CD4 count less than 500 to have this test drawn?

REFERENCES


