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## Clinical Vignettes: HIV associated Lymphoma

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**Stephanie Peace<sup>1</sup>, Hariharan Regunath MD<sup>2</sup>, Deepa Prabhakar MD<sup>2</sup>, William Salzer MD<sup>3</sup>.**

<sup>1</sup>*Medical Student, University of Missouri, Columbia, MO – 65212*

<sup>2</sup>*Fellow, Department of Medicine – Division of Infectious Diseases, University of Missouri, Columbia, MO -65212*

<sup>3</sup>*Professor of Clinical medicine, Division Director, Department of Medicine – Division of Infectious Diseases, University of Missouri, Columbia, MO 65212*

*Address Correspondence to: Stephanie Peace*

### Questions:

**Part 1:** A 25-year-old HIV-positive male presents with a four day history of fever and headache. The headache is a dull pain that acutely worsens with coughing. It is unassociated with photophobia, phonophobia, or vision changes, but worsens with fever spike. It is different than the headaches he had when diagnosed with Mollaret's meningitis a month ago and he denies neck stiffness. He also reports fever and night sweats. He denies symptoms of sinusitis. He is not currently being treated for HIV and a month ago his CD4 count was 163 cells/mm<sup>3</sup> and viral load was 196,000 copies/ml. On exam, he has cervical, supraclavicular, axillary and inguinal lymphadenopathy. Head CT was normal. A subsequent cervical lymph node biopsy was performed which reveals large, bi-nucleate cells with inclusion-like nucleoli. A computerized tomography (CT) of the chest, abdomen, and pelvis discovered multiple mesenteric lymph nodes. What type of cancer is the most likely diagnosis?

1. A)Hodgkin lymphoma
2. B)Burkitt lymphoma
3. C)Follicular lymphoma

4. D) Primary central nervous system lymphoma

**Part 2:** A PET scan was subsequently performed 2 months later and FDG-avid lesions were noted in the small bowel and the left testicle. An exploratory laparotomy was performed, resulting in small bowel resection and left partial orchiectomy. Two weeks later, he returns with a headache and left sided ptosis. MRI brain revealed a large extra axial mass lesion measuring 6.2 cm x 3.0 cm x 6.4 cm in the left temporo-parietal region resulting in a mass effect and 2 mm midline shift. He undergoes a craniotomy with excisional biopsy and duraplasty for a large defect. Pathology from all the three locations mentioned above reveals primarily basophilic cells interspersed with histiocytes with abundant cytoplasm (“starry night”). What is the most likely diagnosis?

1. A) Hodgkin lymphoma
2. B) Burkitt lymphoma
3. C) Follicular lymphoma
4. D) Primary central nervous system lymphoma

**Part 1: A**

**Explanation:** Primary central nervous system lymphoma is ruled down because it is most common in patients with a CD4 count  $<50$  cells/mm<sup>3</sup> and typically presents as CNS mass lesions with seizures and altered mental status. Non-Hodgkin lymphomas (NHL) are AIDS-defining cancers that are very common in HIV+ patients and commonly presents with diffuse lymphadenopathy; however, NHL does not have Reed-Sternberg cells as seen on the biopsy. Burkitt lymphoma typically presents as an extra-nodal tumor mass, which was not seen on imaging. Hodgkin lymphoma, though not an AIDS-defining malignancy, is usually common in moderately immunosuppressed patients rather than severely immunosuppressed patients, and this is consistent with the Reed-Sternberg cells seen on biopsy. Therefore, answer A is the best choice.

**Part 2: B**

**Explanation:** Hodgkin lymphoma rarely enters the testicles or CNS, which rules it down significantly, despite the previous diagnosis of Hodgkin lymphoma. Now that several extra nodal masses have been identified and have been shown to have the characteristic “starry sky” appearance, Burkitt lymphoma is much more likely.

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## **Thiamine Deficiency: A Case Presentation and Literature Review**