

H84 Subdural Hematoma Due to Central Nervous System (CNS) Histoplasmosis in the Setting of Undiagnosed Human Immunodeficiency Virus (HIV) Infection

Keely Coxon, BS, Everett, WA 98203; J. Matthew Lacy, MD*, Snohomish County Medical Examiner's Office, Everett, WA 98204

Learning Overview: After attending this presentation, attendees will be familiar with a rare presentation of CNS histoplasmosis in HIV-positive individuals.

Impact on the Forensic Science Community: This presentation will impact the forensic science community because acute subdural hematoma is almost always due to head trauma and this case will expand the differential diagnosis of the causes of that lesion. Additionally, the differential diagnosis and considerations important to the diagnosis of disseminated histoplasmosis at autopsy will be discussed from the point of view of the forensic pathologist.

Case Report: The decedent, a 29-year-old man from Mexico was in the United States visiting family, complained of cough, intermittent fever, nausea, and vomiting for approximately one week before being found down and unresponsive in his bedroom. He did not have a history of head trauma, headache, neck stiffness, altered mental status, or photophobia. He was transported to the hospital where an acute subdural hematoma was detected.

On admission, he was febrile and tachycardic and had a faint maculopapular rash. His lab results were remarkable for a normal white blood cell count with lymphopenia and normal platelets. His International Normalized Ratio (INR) was 1.4. He had a mild elevation of his hepatic transaminases. Chest radiography showed bilateral central interstitial and airspace opacities. On neurologic examination, the pupils were fixed and dilated, and there was extensor posturing with noxious stimulus. A Computed Tomography (CT) scan of the head showed a hyperdense right hemispheric subdural hematoma, 1 mm thick, with right-to-left midline shift of up to 15mm causing effacement of the ambient cistern and entrapment of the left lateral ventricle. Following neurosurgical consultation, comfort care was initiated, and the decedent died two days later.

At autopsy, there was no sign of a head impact. The edematous brain was compressed by a 120mL right subdural hematoma without signs of organization. It was associated with uncal and subfalcine herniation and Duret hemorrhage of the pons. The heart, kidneys, liver, and endocrine glands were grossly normal. The lungs were edematous and consolidated. Microscopic analysis revealed small yeast morphologically consistent with *Histoplasma capsulatum* in all tissue samples, including the dura. Identification was confirmed by molecular identification of *Histoplasma* DNA in formalin-fixed paraffin-embedded tissue. Postmortem serum was positive for HIV-1. The cause of death was acute subdural hematoma due to CNS involvement by disseminated Histoplasmosis due to HIV/AIDS.

Discussion: Disseminated histoplasmosis, an AIDS-defining illness, is associated with CNS involvement in 10%–50% of patients. Clinical diagnosis is difficult because of the multiplicity of signs and symptoms associated with the disease. The clinical presentation may mimic stroke, migraine, meningitis, vasculitis, and neurosarcoidosis. A case of disseminated histoplasmosis with CNS involvement presenting with sudden obtundation as a result of an acute spontaneous subdural hematoma is presented. This has been rarely described.¹ The etiology of the subdural hematoma in this case is uncertain. Considerations include coagulopathy due to bone marrow involvement by the infection with resultant cytopenias or liver infiltration with associated coagulation factor deficits. Alternatively, histoplasmosis may cause a necrotizing vasculitis resulting in cerebral infarcts. None of these explanations was clearly the mechanism of the acute hematoma in this case. Clinicians and pathologists should be aware of this rare presentation of an opportunistic fungal infection in HIV-infected individuals as a possible differential diagnosis for otherwise unexplained acute subdural hematoma.

Reference(s):

1. Wheat J. Endemic mycoses in AIDS: A clinical review. *Clin Microbiol Rev.* 1995;8(1):146–59. Doi: 10.1128/CMR.8.1.146-159.1995. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC172853/>.

Histoplasmosis, Subdural Hematoma, HIV