

Adrenal Histoplasmosis- Keeping a High Index of Suspicion

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Adrenal histoplasmosis is the most common adrenal granulomatous infection in the endemic areas of the world including some parts of the western United States [1]. The adrenal gland is the most common endocrine organ to be affected by histoplasmosis, but the exact mechanism of localization of histoplasmosis to adrenal glands is unclear and is thought to be contributed by paucity of reticulo endothelial cells and presence of steroids in the adrenal glands.

Even though adrenal histoplasmosis was initially thought to be a disease among the immuno compromised patient population such as those with immune deficiency syndromes, diabetes, those on steroids or transplant recipients, we are now seeing more cases in patients with intact immune systems. Adrenal histoplasmosis is also being diagnosed with increasing prevalence in the non-endemic regions of the world.

There have been instances when adrenal histoplasmosis presented as a unilateral adrenal mass in otherwise asymptomatic patients who were initially diagnosed as adrenal carcinoma [2]. These patients undergo adrenalectomy for fungal infections which could have been diagnosed with biopsies or serology if the index of suspicion was higher.

Histoplasmosis is thought to be acquired by inhalation of spores of the fungus namely *Histoplasma Capsulatum* and the primary infection site is usually the lung. *Histoplasma capsulatum* is found throughout the world in river valleys and soil where bird or bat droppings accumulate and can be released into the air when soil is disturbed by plowing fields, sweeping chicken coops, or digging holes. Outbreaks can occur with bird or bat droppings or from chicken, but person to person transfer does not occur.

The spectrum of the disease varies from asymptomatic self-limiting disease to progressive disseminated disease involving various organs and usually presents with fever, weight loss, and other constitutional symptoms. Adrenal histoplasmosis may diminish intracellular perforin by depressing T lymphocyte and natural killer cell function, causing chronic fatigue. Ocular Histoplasmosis Syndrome (OHS) which is rare, but grave complication of histoplasmosis is now thought to be a leading

cause of vision loss in Americans ages 20 to 40.

Most of the patients with adrenal histoplasmosis have normal adrenal function, even though about one-third of patients can present with adrenal insufficiency.

Diagnosis is often suggested by Computed Tomography (CT) findings of bilateral adrenal masses with calcifications and generalized lymphadenopathy, and confirmed by either fine needle aspiration cytology or pathology results after excision of the adrenal mass. Literature search has shown a case report of bilateral adrenal masses showing high FDG uptake in a case of histoplasmosis, but similar findings are also seen in cases with tubercular adrenal involvement [3].

The characteristic histopathological examination shows numerous small spherical or oval yeast forms surrounded by a clear ring of space resembling a capsule inside the cytoplasm of histiocytes.

Treatment is by antifungal agents like fluconazole and itraconazole for about a year after diagnosis. These patients are monitored by serum antigens which become negative with treatment.

We encourage clinicians to include infection by *Histoplasma capsulatum* as well as other granulomatous diseases in the differential diagnosis of adrenal masses even in immunocompetent hosts living in non-endemic areas.

References

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