An *Inappropriate* Scenario: A Rare Case of SIADH in Neurosarcoidosis

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Introduction

Sarcoidosis is a multisystem granulomatous disorder commonly associated with the lungs. Rarely, it can also affect the central nervous system (CNS). Here we present a case of neurosarcoidosis with hypothalamic-pituitary involvement that was complicated by syndrome of inappropriate antidiuretic hormone (SIADH).

Case Description

A 38-year-old male with no known medical history presented for evaluation of intermittent headaches associated with nausea, vomiting, blurred vision over the course of several weeks. He also reported one episode of extremity shaking.. On exam, he had normal vital signs, a normal neurologic exam, and was euvolemic. Labs were notable for a low sodium of 121, low serum osmolality of 263, high urine osmolality of 811, and high urine sodium of 186, findings consistent with SIADH. Further labs showed low LH at <0.1, low FSH at 0.9, low TSH at 0.342, low T3 at 48, normal T4 at 1.4, low 25-hydroxy vitamin D at 22.9, and a normal AM cortisol. Lumbar puncture revealed an elevated opening pressure of 36 cmH2O, significantly elevated protein of 327, and a lymphocytic pleocytosis, suggesting an inflammatory process. MRI brain was notable for an optic chiasm mass with surrounding leptomeningeal enhancement including cranial nerves II, III and V. CT chest revealed hilar lymphadenopathy and numerous bilateral pulmonary nodules with spiculated margins and central cavitation.

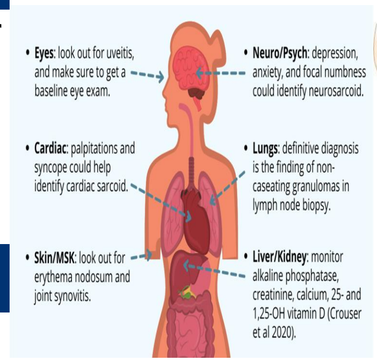

Fig 1: Manifestations of sarcoidosis

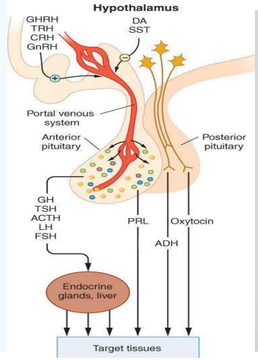

Fig 2: HPA Axis

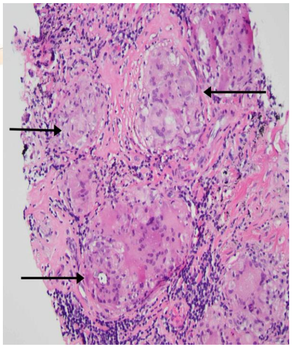

Fig 3: Pathology similar to our patient

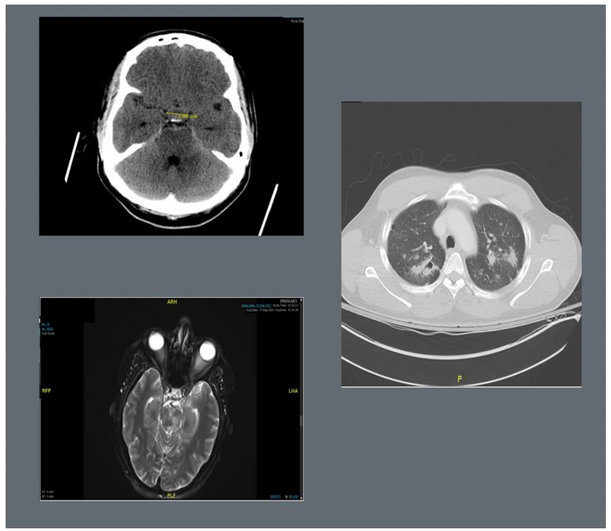

Fig 4: CT brain, MRI Brain, and CT Chest of our patient

Case Description (cont.)

At that time, the differential included tuberculosis, malignancy, and neurosarcoidosis. CT guided lung biopsy revealed non-caseating granulomas, confirming sarcoidosis. Unfortunately, the patient eloped before pathology resulted, but re-presented within four days with marked encephalopathy and reported seizures. He was initiated on high-dose steroids and his mental status rapidly improved.

Discussion

CNS manifestations of sarcoidosis occur in approximately 5% of sarcoid cases. Although rare, hypothalamic-pituitary involvement has been described with one prior case series, however these cases typically presented with central diabetes insipidus (DI). This patient was found to have SIADH, which is exceedingly rare and only found in a handful of case reports. One reported mechanism of SIADH in neurosarcoidosis is related to systemic vasculitis-induced stimulation of the HP axis, promoting ADH secretion.

This case highlights the complex nature of sarcoidosis. Tissue biopsy is considered a requirement for definitive diagnosis of neurosarcoidosis but can be difficult to obtain and pathology takes time to result. This can delay treatment, leading to negative sequelae for patients. However, premature systemic glucocorticoid therapy could be devastating if the patient has an underlying infection. Given that neurosarcoidosis has a poor prognosis and endocrinopathies are often irreversible, physicians should be aware of this scenario to help facilitate a prompt diagnosis.

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