

# **An unusual case of macro adenoma of the pituitary gland and atypical mycobacterium infection.**

## **Authors**

Robert McKittrick, MD., Miami, Florida.

Jose C. Suarez, MD., Miami, Florida.

Jasmin Ahmed, MD., Spartan Health Sciences University, Vieux Fort, Saint Lucia.

Ronda D.E. Lunn, MPH, JAS Medical Management LLC, Miramar, Florida.

Sultan S. Ahmed, MD., JAS Medical Management LLC, Miramar, Florida.

## **History**

A 58 year old Haitian male who admitted at the hospital due to fever of unknown origin. At the time of the admission, his fever was 103.4°F. The patient continues having fever and developed a mild to moderate nonspecific progressive headache with some dizziness. The patient also has some weight loss. He denied night sweat, joint pain, shortness of breath, cough, abdominal pain, nausea and vomiting. He was diagnosed previously with diabetes mellitus, alcohol, and tobacco abuse. The patient's family history was non-contributory. He had no history of trauma or surgery.

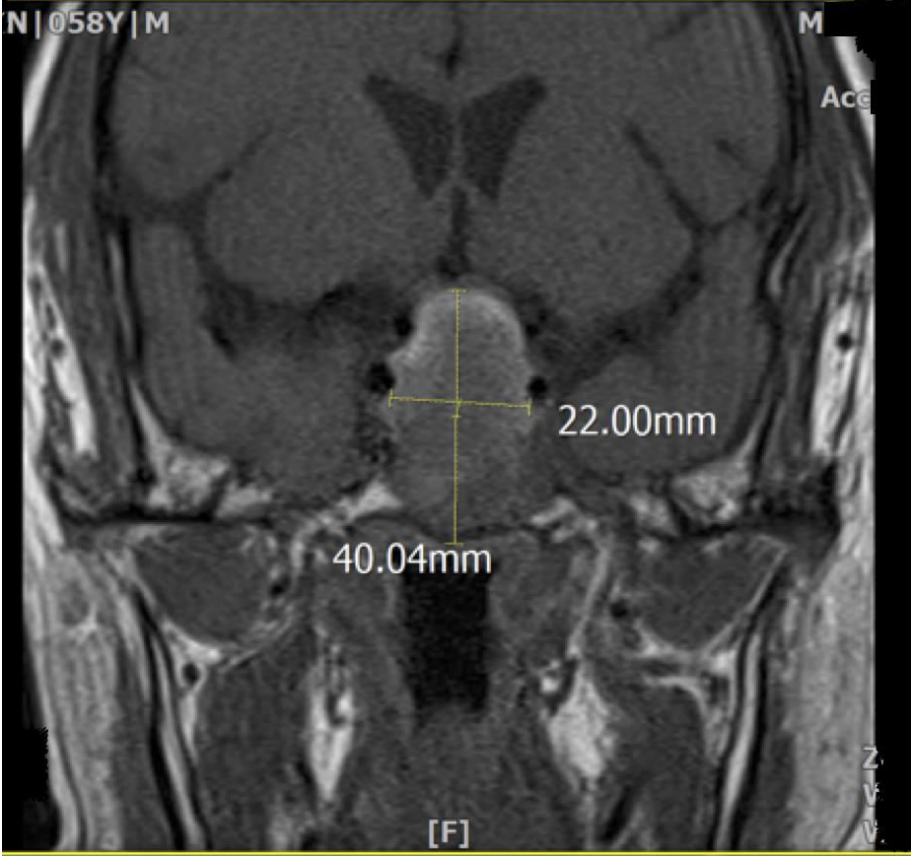
## **Physical examination**

The physical exam reveals vital signs; blood pressure 142/92, pulse 86 bpm and regular, respiration 15/min and regular, temperature 103.4 °F, height 69 in, weight 180 lbs. The patient appears alert, and oriented x 3. Abdomen soft, non-tender, non-distended, normal bowel sounds, no lymphadenopathy, no joint pain or swelling, no skin rash. Neurologic, heart and lungs, ear nose and throat examinations were all normal.

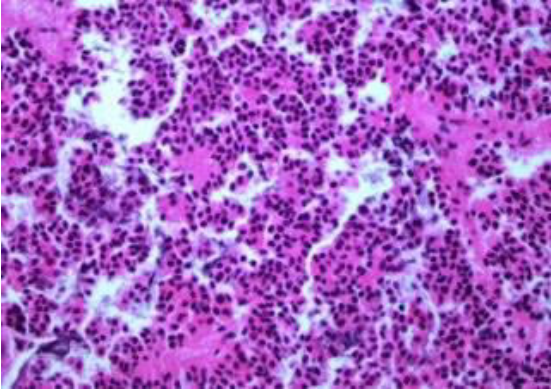
## **Diagnostic Testing**

Initial workup for the patient indicated that his WBC 3.9, RBC count 4.26, hemoglobin 12, hematocrit 34.4, platelet 92, neutrophils 75.2, lymphocytes 17.3, monocytes 7.2, eosinophil 0, basophils 0.3, BUN 8, creatinine 0.5, sodium 131, potassium 4, chloride 101, CO<sub>2</sub> 25, calcium 8.1, albumin 3.4, AST 26, ALT 26, alkaline phosphatase 37, glucose 296, HgA1C 15.3. Blood culture collected repeatedly for aerobic and anaerobic organisms but showed no growth. Multiple urine culture also did not show any growth of organisms. Chest x-ray was done with no abnormalities of the heart and lungs. The patient also been checked for sputum for AFBX3 and the results were negative. Only test came back with positive result was QuantiFERON-TB Gold

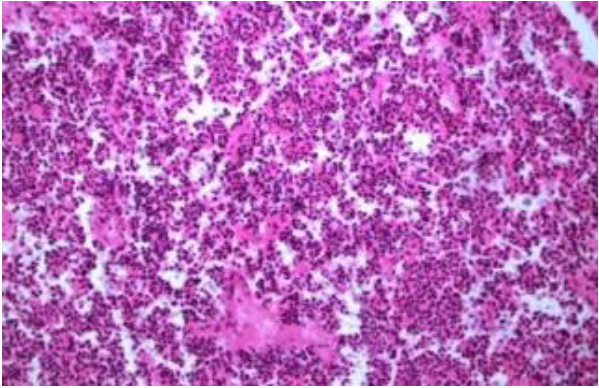
test. MRI of the brain was done due to continuous headache, and it showed massive pituitary macro adenoma. CT scan of the brain shows no hemorrhage, but significant pituitary macro-adenoma.



(A)



(B)



(C)

**Figure 1.** (A) MRI scan showing the pituitary macro adenoma, (B and C) histopathological slides of the pituitary tumor.

## Discussion

Fever of unknown origin is one of the most difficult entity in the clinical medicine, where all investigation needs to be focused on possible occult infections. In this interesting case the positive Quantiferon Gold TB test indicated the patient must have occult TB infection in the body. Subsequently after resection of pituitary macro-adenoma, the TB medications were given to the patient. The following anti-TB regimen were given including, Isoniazid, Rifampicin, Pyrazinamide, and ethambutol. Clinically patient improved and became afebrile, after the administration of Anti-TB medication.

Pituitary adenomas classified based on size are of three types, microadenoma (< 10 mm), macroadenoma (>10 mm) and giant adenoma (> 40 mm). They are noticed in over 25% of patients upon autopsy with actual prevalence unknown since most patient remain asymptomatic, although may cause hypersecretion/hyposecretion of various endocrine hormones.<sup>1-3</sup>

This patient underwent transsphenoidal pituitary adenoma resection, shortly after, he suffered from hormonal issues and salt wasting syndrome likely due to the surgery. Due to positive results from QuantiFERON-TB Gold test of the of atypical mycobacterium infection, the patient received expensive antimicrobial drug regimen that including, Invanz, Isoniazid, Rifampicin, Pyrazinamide, Myambutol, and Biaxin. After the treatment of TB infection, the patient has recovered from the salt wasting syndrome and doing well.

Mycobacterium can infect many endocrine glands including the hypothalamus, pituitary, thyroid and adrenals being the most commonly involved. Primary adrenocortical insufficiency is mainly due to mycobacterium infection of the adrenal glands. It has also been noted that Hypothalamo-pituitary-adrenal (HPA) axis is activated in active pulmonary tuberculosis resulting in increased cortisol secretion.<sup>4</sup>

ATT was recommenced (initially supervised directly observed treatment), with a plan to continue for a minimum period of 1 year and possibly extending to 18 months. Standard course of ATT was provided with an initial 2-month phase of intensive therapy with isoniazid, rifampicin, pyrazinamide and ethambutol, followed by isoniazid and rifampicin for the remaining duration of therapy.

## References:

1. Majumdar K. Tuberculosis in the pituitary fossa: a common pathology in an uncommon site. *Endocrinol Diabetes Metab Case Rep.* 2014; 140091.
2. World Health Organization. Global Tuberculosis Report 2012.
3. deAngelis LM 1981 Intracranial tuberculoma: case report and review of the literature. *Neurology* 31 1133–1136.
4. Sharma MC, Arora R, Mahapatra AK, Sarat-Chandra P, Gaikwad SB & Sarkar C. 2000 Intrasellar tuberculomas – an enigmatic pituitary infection: a series of 18 cases. *Clinical Neurology and Neurosurgery* 10272–77 10.