

## Introduction

Pituitary abscesses represent <1% of pituitary disease but are associated with high mortality and can arise secondarily through hematogenous or contiguous spread.<sup>1,2</sup> In two large case series of pituitary abscesses, symptoms of anterior pituitary dysfunction were found on initial presentation in 82.8% of patients.<sup>3,4</sup> Here, we describe a case of a pituitary abscess who presented initially with sinusitis, meningitis, and bacteremia but found to have central endocrine dysfunction through workup during her hospitalization.

## Case Presentation

A 31-year-old female with history of sinus surgery 5 years ago and Graves' disease status post total thyroidectomy two weeks prior to admission presented with **fatigue, myalgias, headache, and photophobia** for one week. In the ED, she was febrile to 101.7°F with a WBC of 24.8 K/mm<sup>3</sup>. Exam was notable for normal mental status and negative for nuchal rigidity and Kernig's sign. A diagnostic lumbar puncture was performed with findings suggestive of bacterial meningitis (Table 1) and the patient was started on broad spectrum antibiotics.

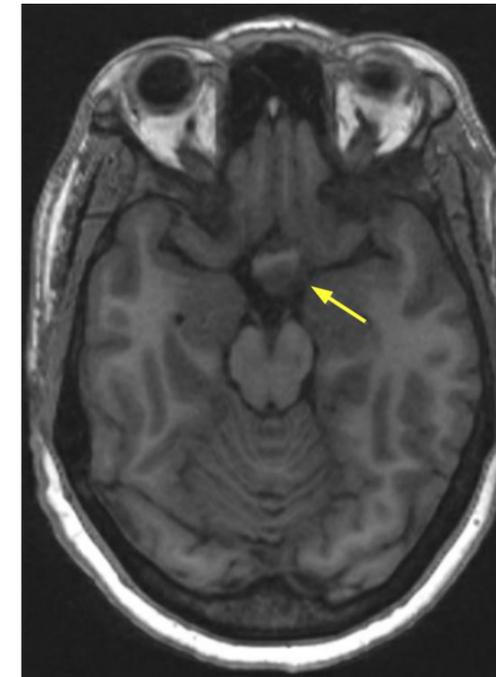
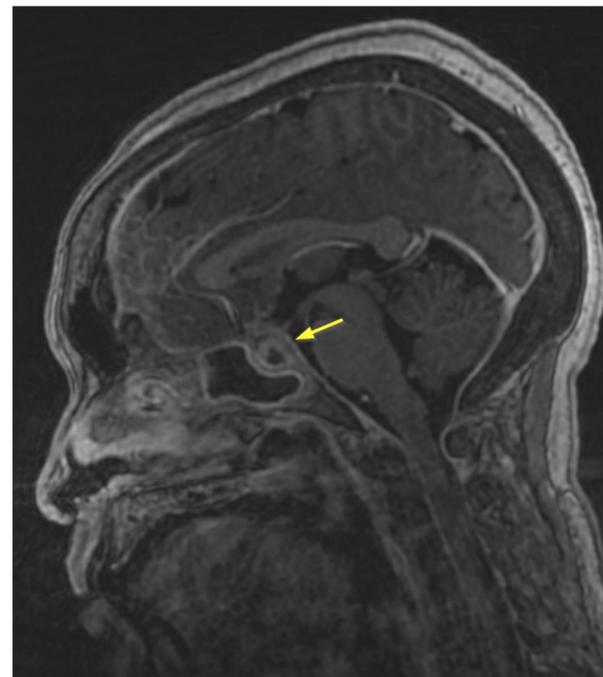
Blood cultures were collected which were positive for polymicrobial growth of native oral and nasopharyngeal flora (Table 1). In search of an odontogenic source of infection, a dental x-ray was obtained revealing retained dental root with chronic apical abscesses and pulpal necrosis. Three teeth were subsequently extracted. As *Streptococcus* species are known to be associated with brain abscesses, an MRI was obtained which had findings concerning for a pituitary abscess (Fig. 1). A CT scan showed dehiscence of the sellar and cribriform plate floor in addition to complete opacification of the left sphenoid sinus. A left sphenoidectomy and drainage was performed. Endocrine labs were also collected that showed evidence of central hypopituitarism (Table 2). She was started on cortisol supplementation and her home levothyroxine was increased. By hospital day 7, her leukocytosis had resolved. She decided against operative management and was discharged to a skilled nursing facility on hospital day 11 for 8 weeks of IV antibiotics.

Lumbar Puncture CSF Analysis	
Appearance	Clear/Colorless
WBC (cells/mm <sup>3</sup> )	3025
Neutrophils (%)	79
Lymphocytes (%)	8
Monocytes (%)	13
RBC (cells/mm <sup>3</sup> )	345
Protein (mg/dL)	103
Glucose (mg/dL)	37
CSF Culture	<i>Streptococcus anginosus</i>
Blood Cultures	<i>Streptococcus constellatus</i> , <i>Streptococcus intermedius</i> , and <i>Fusobacterium necrophorum</i>

**Table 1.** CSF Analysis from Hospital Day 0 and culture data.

Morning Cortisol (µg/dL)	<1
LH (IU/mL)	0.3 (L)
FSH (IU/mL)	2.2
Prolactin (ng/mL)	0.8 (L)
Estradiol (pg/mL)	<15 (L)
TSH (mIU/L)	<0.005 (L)
T4, free (ng/dL)	0.84 (L)
IGF-1 (ng/mL)	65

**Table 2.** Endocrine laboratory studies. Patient endorsed fatigue, headaches, previous episodes of pre-syncope, and history of irregular menses possibly contributed to by central endocrine dysfunction within the setting of an acute infection.



**Figure 1.** Sagittal and axial views of a brain MRI with and without contrast which revealed sinus wall osteitis with a 6-mm non-enhancing, irregularly shaped lesion within the sella. CT-head also confirmed the presence of a loculated intrasellar fluid collection.

## Conclusion

- Patient presenting with bacterial meningitis was found to have a pituitary abscess with central hypopituitarism likely related to chronic sinusitis in the setting of previous sinus surgery. Hematogenous spread from an odontogenic infection was also considered.
- Central hypopituitarism secondary to pituitary abscess can have wide variability in presentation. Here, we did not find diabetes insipidus or visual disturbance as has been previously described, but we did identify secondary adrenal insufficiency.<sup>5</sup>
- This case highlights the importance of keeping a broad differential and tailoring workup based on reported behaviors of microbes.

## References

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