

Visual Vignette

Polyuria, Sinopulmonary Symptoms, and Pituitary Mass

Anita V. Pechenko, MD ^{1,*}, Seth J. Van Der Veer, DO ², Courtney A. Clutter, MD ³



¹ Division of Internal Medicine, Brooke Army Medical Center, JBSA- Fort Sam Houston, Texas

² Division of Rheumatology, Brooke Army Medical Center, JBSA- Fort Sam Houston, Texas

³ Division of Endocrinology, Brooke Army Medical Center, JBSA- Fort Sam Houston, Texas

ARTICLE INFO

Article history:

Received 7 February 2024

Accepted 12 February 2024

Available online 16 February 2024

Case Presentation

A 38-year-old woman presented with a 5-week history of polyuria, headaches, intermittent fever, and sinopulmonary symptoms. In the emergency department, computed tomography scan chest (Fig. 1) demonstrated dense bilateral upper lobe consolidation and computed tomography scan head (Fig. 2) noted pansinus disease. A water deprivation test was performed and was notable for a urine osmolality of 95 mOsm/kg, serum osmolality of 310 mOsm/kg, and serum sodium of 151 mmol/L. Intravenous desmopressin 4 mcg was administered, and subsequent urine osmolality increased to 211 mOsm/kg, consistent with central diabetes insipidus. The magnetic resonance imaging sella (Fig. 3) demonstrated a 1.2 × 1.6 × 0.8 cm pituitary lesion with central necrosis. Further laboratory evaluation showed elevated C-reactive protein level of 4.2 mg/dL, c-antineutrophil cytoplasmic antibodies 1:40, and antiproteinase-3 antibodies >8.0 IU/mL positivity. A core biopsy of the right upper lung lobe was performed and demonstrated necrotizing granulomatous inflammation.

What is the diagnosis?

Answer

The unifying diagnosis is granulomatosis with polyangiitis (GPA) with an infiltrative pituitary process, resulting in central diabetes insipidus (CDI). GPA, a necrotizing granulomatous vasculitis, can affect any organ system, classically with

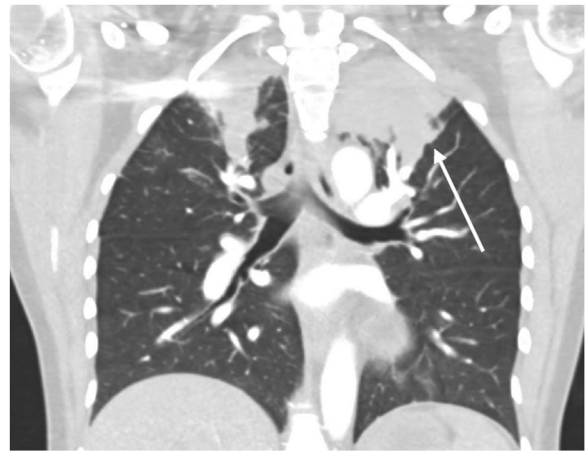


Fig. 1.

sinopulmonary and renal manifestations.¹ Conversely, pituitary gland involvement is rare accounting for 1% of GPA cases.² CDI is the most frequent pituitary hormone abnormality.² Magnetic resonance imaging sella imaging can demonstrate pituitary enlargement with increased enhancement and infundibulum



Fig. 2.

Editor's Note: Submissions to "Visual Vignettes" are welcomed. Please submit online via the Journal's Editorial Manager site.

* Address correspondence to Dr Anita V. Pechenko, Division of Internal Medicine, Brooke Army Medical Center, JBSA-Ft. Sam Houston, TX 78234.

E-mail address: anita.v.pechenko.mil@health.mil (A.V. Pechenko).

<https://doi.org/10.1016/j.aace.2024.02.002>

2376-0605/Published by Elsevier Inc. on behalf of the AACE. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

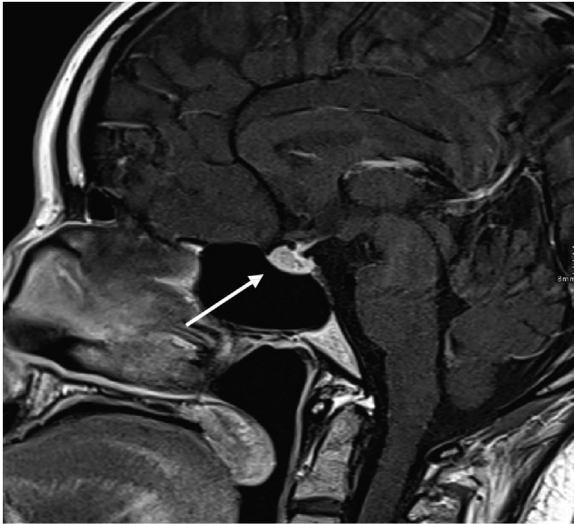


Fig. 3.

thickening.² Loss of characteristic hyperintense signal in the posterior pituitary on T1-weighted sequences is strongly correlated with CDI.³ The importance of early recognition and treatment of such heterogenous presentations may reduce morbidity

in sparing patients unnecessary imaging, invasive procedures, and prevent irreversible pituitary function loss.

Disclosure

The authors have no conflicts of interest to disclose. The views expressed in this abstract are those of the author(s) and do not necessarily reflect the official policy or position of the Defense Health Agency, the Department of Defense, nor any agencies under the U.S. Government.

Acknowledgments

Patient consent was obtained. This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

References

1. Greco A, Marinelli C, Fusconi M, et al. Clinic manifestations in granulomatosis with polyangiitis. *Int J Immunopathol Pharmacol.* 2016;29(2):151–159. <https://doi.org/10.1177/0394632015617063>
2. Guzman-Soto MI, Kimura Y, Romero-Sanchez G, et al. From head to toe: granulomatosis with polyangiitis. *Radiographics.* 2021;41(7):1973–1991. <https://doi.org/10.1148/rg.2021210132>
3. Pakalniskis MG, Berg AD, Policeni BA, et al. The many faces of granulomatosis with polyangiitis: A review of the head and neck imaging manifestations. *AJR Am J Roentgenol.* 2015;205(6):W619–W629. <https://doi.org/10.2214/ajr.14.13864>