



## Pineal Gland Germinoma And Pituitary Insufficiency Presenting With Weight Loss

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### ABSTRACT

#### *Introduction*

Intracranial germinomas are rare cancers that primarily affect pediatric age group patients making them rarer still in adults. This report presents a case of a primary intracranial germinoma arising in the pineal region of a 24 year old male. The patient presented with a history of weight loss and progressive vision loss secondary to obstructive hydrocephalus. MRI demonstrated a large enhancing mass lesion in the region of the pineal gland with radiological features suggestive of a germinoma. Immunohistochemical stains confirmed the histological diagnosis, with positive staining for C-Kit, OCT4 and PLAP. In summary, this case report highlights that the diagnosis of pineal gland germinoma present in a young male is made by immunohistochemistry and detailed physical examination.

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## ***Introduction***

Hypopituitarism is the name given to clinical syndromes that develop as a result of the insufficiency of one or more hormones produced in the anterior pituitary gland <sup>1</sup>. Intracranial germ cell tumors (IGCT) are more common in males and approximately 50% are located in the pineal gland. IGCT are divided into two main groups, pure germinoma and nongerminomatous germ cell tumors (NGGCTs). Germinoma is the most common subtype, accounting for over two thirds of all IGCTs <sup>2</sup>.

## ***Case***

A 24-year-old male patient with an unremarkable past medical history presents to the clinic with complaints of loss of appetite and fatigue that started about a year ago. The patient was previously investigated for malignancy in a different center, and no pathology was detected in the thorax and abdominal tomography. He lost approximately 20 kg in the last year. The patient had no history of drug, herbal or substance use. On physical examination, he was 170 cm tall, weighed 40 kilograms. His body mass index was 13.85 kg/m<sup>2</sup>. Decreased visual acuity, limitation of eye movements, bilateral decreased testicular volume were detected.

Pituitary hormones were requested from the patient with the preliminary diagnosis of panhypopituitarism. Hormone tests requested from the patient as followed:

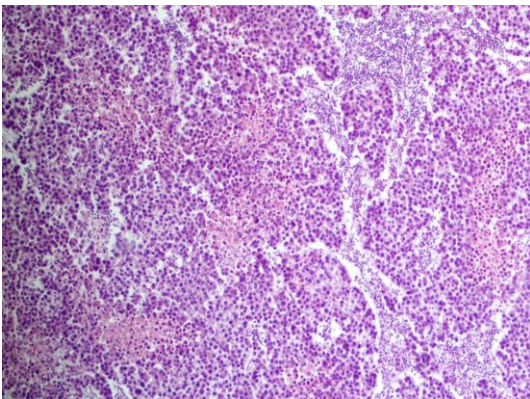
TSH 1.39 mU/L(N:0.27-4.2), fT4 0.56 ng/dl (N:0.89 - 1.76), fT3 2.17 ng/L(N:2, 3 - 4.2), Prolactin 70.4 µg/L(N:2.1 - 17.7),Growth Hormone (GH) 4.6 µg/L(N: 0.05 - 3),IGF-1 (Insulin Like Growth Factor 1) 72 µg/L (N:116 - 358),ACTH 11.1 pg/mL (N:0-100),Cortisol 1.8 µg/dL (N:5.2-22.4),FSH 1.9 U/L (N:1.4 - 18.1),LH 0.5 U/L (N:1.5 - 9.3),Total Testosterone <0.07ug/L (N:1, 64 - 7.53)

Other laboratory tests were found to be normal.

Pituitary magnetic resonance imaging was requested from the patient. A 27.5x27x25 mm mass infiltrating the pituitary gland in the posterior part of the pineal gland localization causing significant compression on the Aquaductus Sylvii and triventricular obstructive hydrocephalus, was detected invading the optic chiasm.



**Fig 1: A mass lesion of 27.5x27x25 mm in the localization of the pineal gland**



**Fig 2: Intraoperative material strong staining with PLAP**

### *Discussion*

Intracranial germ cell tumors are rare neoplasms. Joint involvement of the suprasellar region and the pituitary gland is rare 3. Prognosis is worse in such cases. In the advanced age group, it should be considered that pineal gland germinoma accompanies the pituitary insufficiency, although it is rare. We wanted to emphasize the importance of detailed physical examination to help in the diagnosis in patients presenting with weight loss if no pathology is detected on initial imaging. As a result of the examinations of our patient who was hospitalized for weight loss, coexistence of pituitary insufficiency and pineal gland germinoma was detected.

In the literature, pituitary and suprasellar involvement is rarely seen in patients with pineal gland germinoma. Our case had pituitary and suprasellar involvement. In cases presenting with weight loss and deterioration in visual acuity, pituitary insufficiency should be considered in the preliminary diagnosis.

### ***Declaration***

The authors have no conflicts of interest to declare.

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