

Pituitary Adenoma Presenting with Acute History of Severe Headache, Hypotension, and Ptosis

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Abstract

Case Report

A female patient in her seventies presented with acute onset of severe headache and third nerve palsy. Initial evaluation showed ptosis of the left eyelid, dilated left pupil, and restricted eye movements. MRI confirmed a pituitary macroadenoma. The patient was managed with hydrocortisone and conservative measures but experienced significant complications during treatment. This case underscores the diagnostic and management challenges of pituitary adenomas, emphasizing a multidisciplinary approach.

Keywords: adenoma, headache, neuro, ptosis, pituitary.

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INTRODUCTION

Pituitary adenomas are common neoplasms that can present with a variety of clinical symptoms. They are tumors that arise from the pituitary gland, which is responsible for hormone regulation. These tumors can be classified based on size (microadenomas are less than 10 mm, and macroadenomas are larger) or by the hormones they secrete [1, 2]. Common symptoms include headaches, vision problems, and hormonal imbalances, which can lead to conditions like Cushing's disease or acromegaly. Diagnosis typically involves imaging studies, like MRI, and hormone testing. Treatment options vary depending on the type and size of the tumors and can include medications, surgery, or radiation therapy. This case report details a unique presentation of a pituitary macroadenoma with third nerve palsy, adding complexity to its clinical spectrum. Despite advances in diagnostic techniques, timely recognition and appropriate management remain crucial.

CASE PRESENTATION

A female in her seventies reported a two-day history of severe headache followed by the inability to open her left eyelid. She had a more insidious history of declining mobility and multiple comorbidities including morbid obesity, chronic kidney disease, paraproteinemia, hypertension, osteoarthritis of the hips, and atrial fibrillation. She was assessed at home as her mobility was so poor, that she was unable to attend the surgery. Examination revealed ptosis of the left eyelid,

pupil size was more dilated on the left side compared to the right. Eye movements on the left side were intact on abduction, but there was an inability to elevate, depress or adduct the left eye. Visual fields were reduced, and she was unable to complete finger-nose testing with the right eye closed. There was no pronator drift. Power was 5/5 throughout, although the examiner felt there may be a slight reduction on the left side. The examiner also noted very poor mobility and normal speech. Due to the suspicion of a possible underlying central cause the clinician requested an ambulance to relay her to the local emergency department. She was hypotensive; blood pressure was initially 74/71, pulse was between 74 and 91, blood glucose, temperature, respiratory rate and saturations were normal. Her NEWS score was 4. The paramedic team noted pupil size 5mm on the left, 2mm on the right with no reaction to light on the left side, and intact reaction on the right. A12 lead ECG showed AF with occasional premature ventricular complexes. She received 250ml IV saline, and subsequent blood pressure readings were in the range of 88/64. She was relayed to the emergency department for further investigation and management. She was admitted to hospital for a period of 18 days. Initial imaging with CT was unremarkable, but MRI was suggestive of a pituitary tumour, which lead to further detailed pituitary imaging.

Diagnostic Assessment

The diagnostic workup included chest X-ray, ECG, blood tests, and CT head as well as MRI scan. The patient's clinical presentation, along with MRI findings,

supported the diagnosis of a pituitary macroadenoma. The relevant results are included in the table below.

Hormone	Level	Reference Range
TSH	0.11 μ IU/mL	0.5-5.0 μ IU/mL
T4	25.2 pmol/L	10-20 pmol/L
Cortisol	282 nmol/L	140-690 nmol/L
Prolactin	12 μ g/L	<20 μ g/L
Testosterone	0.2 nmol/L	0.5-3.0 nmol/L
eGFR	51 mL/min/1.73m ²	90-120 mL/min/1.73m ²
INR	>10	Therapeutic range 2-3
Uric acid	558 umol/L	140-360

CT of the head on day of presentation did not show any cause for the symptoms demonstrated, however there was thickening in the region of the optic chiasm, the exact aetiology of which was unclear, and thought not to be the cause of headaches. Therefore, MRI was recommended. MRI of the head showed mild small vessel disease. As well as enlargement of the pituitary gland. Appearances suggestive of pituitary tumors or intra-pituitary hemorrhage.

Therapeutic Intervention

The patient was started on hydrocortisone pending a Synacthen test. Neurosurgery advised conservative management and to repeat the scan six weeks later. She was optimised from medical point of view, with cessation of hypertension medications, hydrocortisone 10mg pending short Synacthen test, and medical management of the complications experienced during her admission, and eventually transferred to a rehab hospital.

Follow-Up and Outcomes

During the 18-day hospital stay, the patient experienced complications such as *Clostridium difficile* infection, urinary tract infections, acute kidney injury, and significant weight loss. Despite these challenges, she was discharged with a care package following conservative management of the pituitary adenoma.

DISCUSSION

This case highlights the diverse clinical presentations of pituitary adenomas and the importance of prompt diagnosis. Understanding the impact of pituitary macroadenomas on various organ systems underscores the need for a comprehensive, individualized approach.

In Rutkowski *et al.*, study [3] they mentioned several symptoms were consistent with our case such as

headache. Pituitary macroadenomas can present atypically, complicating their diagnosis. This report contributes to the understanding of the clinical spectrum of pituitary adenomas and underscores the importance of a multidisciplinary approach for optimal patient care.

Atypical adenomas are more likely to appear in younger patients, tend to be larger in size, are more often hormonally hypersecretory, and have higher likelihood of earlier recurrence. This was inconsistent in this case report the patient was old in age [3]. Further research is required to study the association between adenomas and other important factors such as age. In addition to that, during the 18-day hospital stay, the patient experienced complications such as *Clostridium difficile* infection, urinary tract infections, acute kidney injury, and significant weight loss. Therefore, elder patients may require additional care.

The strength of this case reports lies in its capacity to highlight uncommon presentations of symptoms, clinical findings, disease progression, intervention, and complications. The limitation of this case report lies in its inadequate representation of population sample, hence unable to provide generalized epidemiological statistics.

RECOMMENDATION

There are occasionally rare manifestations of pituitary adenomas, hence we recommend a thorough approach to clinical history taking and examination for atypical headaches.

CONCLUSION

Understanding the effect of pituitary macroadenomas on different organ systems underscores the need for a comprehensive, individualized approach.

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