

Hypopituitarism: Underdiagnosed in Elderly

Divendu Bhushan

Abstract

Hypofunction of pituitary can result from various causes including vascular insult, infection, post trauma, autoimmune and post radiation. Symptoms of this are very nonspecific, so patients can present in outpatient department or casualty room with various presenting complaints. The primary doctor should take the proper history, and should see the lab reports with caution as those can hint the root cause. Once diagnosed, treatment of hypopituitarism includes replacing target hormones for saving life. Treatment with gonadotropins may be required for achieving fertility. Treatment with growth hormone in adult hypopituitarism is not required routinely.

Key words: hypopituitarism, central hypothyroidism

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Introduction

Hypopituitarism is defined as deficiency of one or more pituitary hormones and panhypopituitarism is defined as deficiency of three or more pituitary hormones.¹ This is the master gland which secretes hormones that regulates all other systems. Hypopituitarism in male is an uncommon disorder and one needs to be cautious in diagnosis as it can mimic depression and Parkinson's disease which are more commonly seen.

A case of male hypopituitarism who presented as pathological fracture in neck of femur is reported here.

Case

A 65 yr. old gentleman diagnosed case of hypertension and chronic kidney disease (on treatment) admitted in orthopedic unit after a fall on ground causing fracture neck of femur (right) 6 days back. There was history of progressive deterioration in sensorium and alertness. On reviewing history he was cheerful father of two

kids, shaved twice a week and retired from a government job few years back.

On examination pallor, facial puffiness and wrinkling on lateral border of eye were present. His vitals were stable. Other systemic examination was normal. His investigations are mentioned in Table 1. His blood urea was 184 mg % and S. Creatinine was 4.1 mg%. MRI brain showed empty sella confirming diagnosis of hypopituitarism. He was deficient in thyroid (central hypothyroidism), growth hormone and gonadotropins. He was given levothyroxine 100 microgm/ day. GH provoked test was not done due to poor general condition and increased serum creatinine. He became alert and started communicating well.

Discussion

In a population-based study in 1998, the prevalence of hypopituitarism was 46 cases per 100,000 individuals and the incidence was 4 cases per 100,000 per year.¹ There is scant data on hypopituitarism from India despite estimated total prevalence of pituitary disorders to 4 million in the year 2000.²

Although the clinical symptoms of this disorder are usually nonspecific, it can cause life-threatening events and lead to increased mortality.

Gundurth et al. have described the largest published series of hypopituitarism (91 cases) in India.³ In their study they concluded that although most common cause of hypopituitarism was pituitary tumour, in our country Sheehan's syndrome (5.3%) and snake bite also cause hypopituitarism. Presentation varies from asymptomatic to acute collapse, depending on the etiology, rapidity of onset, and predominant hormones involved.⁴ So this variation in presentation can land a patient in any specialty of medicine. That's why clinicians should be vigilant and take proper history to reach the diagnosis.

Table 1. Investigations of case

	Reference range	Case
Hb	12-14 gm%	11.1
TLC	4-11x 10 ³ cu mm	7860
Platelet	2- 4 lakh/cumm	2.3
S.Na+	135-145meq/dl	145
S.k	3.5-5.5 meq/dl	5.5
S. TSH	0.4-4.2 MIU/L	4.35
S. FT4	0.7-1.24 ng/dl	0.31
S. Cortisol	5-25 microgm/dl	15.7
S. FSH	Post menopausal female: 18-153IU/L Male:1-12 IU/L	0.5
S. LH	Postmenopausal female: 16-64 u/l Male 2-12 u/l	<0.2
S.GH	0-5 microgm/l	0.3
IGF-1	34-245 ng/ml	28, z score -2.4
S. Prolactin	Female: 1.2-25 ng/ml Male: 2.5-17 ng/ml	19.6

Patients can present as lethargy, decreased alertness, weight gain due to hypothyroidism, lactation failure due to prolactin deficiency, amenorrhea, infertility due to deficiency of FSH/LH, hypoglycemia, poor tanning of skin and hypotension due to ACTH deficiency, growth failure and fasting hypoglycemia in children and increased abdominal fat, poor energy reduced muscle mass and strength, dyslipidemia in adult due to GH deficiency.⁵ Both deficiency in GH and gonadotropins can lead to fine facial wrinkling.

Patients can present in altered sensorium secondary to hyponatremia due to hypothyroid or cortisol deficiency. Other associations include anemia, pancytopenia, and cardiac abnormalities

like cardiomyopathy and acute kidney injury.⁶⁻⁹ Pancytopenia is associated with hypocellular marrow and complete recovery has been shown to occur after achieving eucortisolemic and euthyroid state, and it has been shown that glucocorticoid replacement is more important than thyroxine replacement in reversing pancytopenia in these patients.⁸

Diagnosis can be made by demonstration of low or inappropriately normal serum level of the appropriate pituitary hormone concurrent with low level of target organ hormone (ACTH, TSH, FSH and LH). To diagnose GH and prolactin deficiency, we need to do pituitary stimulation tests. In the presence of clinical or biochemical evidence of hypopituitarism, visualization of the sella/suprasella areas is needed to identify the nature of the causative disease process.

Management includes replacement of hormones concerned like cortisol, thyroxine and GH replacement and estrogen and progesterone replacement. If patient have cortisol and thyroid deficiency then first replace cortisol with steroids and then add thyroxine, otherwise adrenal crisis may precipitate.

So it is very crucial that clinician should have an eye on a patient with recurrent hyponatremia, hypoglycemia, unexplained lethargy, persistent low blood pressure, and secondary amenorrhea and post-partum lactational failure.

Conclusion

Hypopituitarism is an uncommon entity, but clinician should be vigilant in diagnosing it as this may make a large difference in the life of affected elderly. This may be an underreported entity as it can mimic Parkinson's, depression and mood disorder in them. Timely diagnosis is crucial as treatment is simple, cheap and does not require much of the monitoring, and without treatment it can be fatal also.

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