

Case Series


Hypopituitarism in elderly – A case series

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Abstract

Hypopituitarism is found to be one of the under investigated disease in elderly as it produces non specific symptoms which can be easily attributed to ageing and related co morbidities. Unless the hypopituitarism is identified and proper therapy is instituted, the clinical consequences of the untreated patients will be fatal. Here we report three cases of hypopituitarism in elderly patients whose clinical presentation and etiology was completely different. The first patient was fifty year old lady who is a known asthmatic for the past thirty years on steroids and had iatrogenic Cushing's. On tapering the steroids she developed hypotension and giddiness. On eliciting the history she was suspected to have Sheehan's syndrome and was confirmed with investigations. She was advised to continue the steroids with calcium supplements. The second patient is an 80 years old female who came with complaints of increased tiredness daily more in the morning while getting up and improves slowly in the afternoon time and getting tired again in the night. When she was examined she had hypotension of 90/50 mm of hg. She was evaluated for Partial hypopituitarism and investigation confirmed hypopituitarism and she was started on Hydrocortisone tablets and she improved. The third patient was a 65 year old lady who was diagnosed to have diabetes mellitus and hypothyroidism and was on oral hypoglycemic drugs and eltroxine supplementation respectively. She had multiple hypoglycemic symptoms unresolved in spite of tapering the oral hypoglycemic drugs and on evaluation found to have partial hypopituitarism and started on T. Hydrocortisone and she improved well. We report these three cases as hypopituitarism has multifaceted clinical presentation and needs high level of suspicion to diagnose it in elderly.

Key words

Hypopituitarism, Sheehan's syndrome, Hyponatremia in elderly.

Introduction

Pituitary dysfunction in elderly is considered to be one of the diagnostic and therapeutic challenges to the physicians [1]. The classical symptoms of hypopituitarism like lower muscle strength, Fatigue and loss of libido are non specific and often attributed to normal ageing [1]. The reason for the variable clinical presentation of hypopituitarism in elderly is the age related endocrine changes and the co morbidities which the patient suffers [2]. When compared to the children and adults, elderly individuals have complicated clinical presentations and a delay in diagnosis and initiating right treatment may lead to life threatening hypo pituitary crisis. Here we report three cases of hypopituitarism in elderly individuals which presented with completely different scenarios.

Case series

Case - 1:

50 year old female a known case of bronchial asthma since thirty years and is on steroids T. Prednisolone 10 mg once a day had presented with buffalo hump and moon face and multiple joint pain. She was diagnosed as iatrogenic Cushing's and she was tried on tapering the dose of steroid. When the dose of steroid was tapered she developed hypotension and fatigue and she was given injection hydrocortisone and she was restarted on the original dose of Prednisolone. She was referred to us for further management. On eliciting her history she was found to have only one child and she did not lactate her child and her menstrual cycle stopped since the birth of the child. She did not have any child since then. She was suspected to have Sheehan's syndrome (post partum pituitary necrosis). Her investigation showed low cortisol (0.12 mcg/dl), low Follicle Stimulating Hormone -FSH (6.5 mIU/ml) for her age and normal Thyroid Stimulating Hormone TSH (1.6 mIU/ml) suggestive of partial hypopituitarism and the diagnosis of Sheehan's syndrome was reinforced. Her dose of prednisolone was tapered slowly along with budesonide with frometrol Metered

dose inhalers. She was advised to maintain a minimum dose of 5 mg per day in view of her pituitary deficiency.

Case - 2:

80 years old female a known case of hypothyroidism on Eltroxine 100 mcg had come with complaints of feeling lethargy in the morning which slowly improves as the day advances and feels again tired in the evening. Patient on examination was emaciated and her blood pressure was only 90/60 mm of hg. Clinical examination did not show any hyper pigmentation suggestive of Addison's disease. Her investigation showed elevated T4 (Total T4-14.2) and low TSH (TSH-<0.01). Her Luteinizing Hormone LH was 5 mIU/ml (normal – in postmenopausal above 30) and FSH was 6 mIU/ml (Normal – in postmenopausal above 30) was inappropriately low for a postmenopausal woman. She had low sodium (serum Sodium - 130 mEq/L) despite this her serum cortisol (serum cortisol- 5 mIU/ml) was lower limit of the normal. All these features point towards the diagnosis of hypopituitarism. Patient was started on T. Hydrocortisone 5 mg 1-0-1/2 and the dose of Eltroxine reduced in accordance with the thyroid hormone levels. Patient improved well with steroid supplementation. Patient MRI Brain showed Empty sella (**Figure - 1**).

Figure – 1: MRI Brain showing Empty Sella of Case 2.

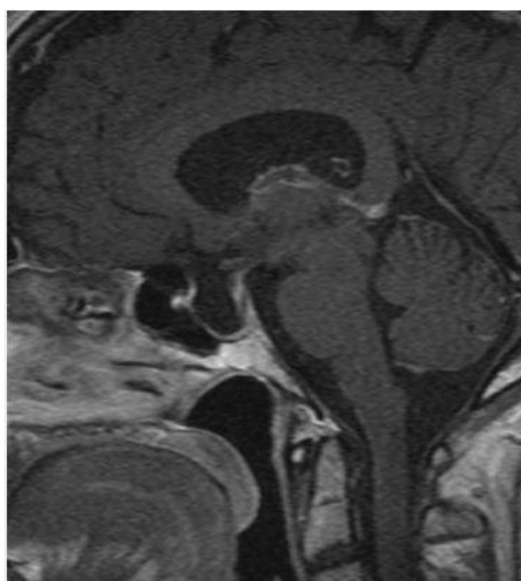
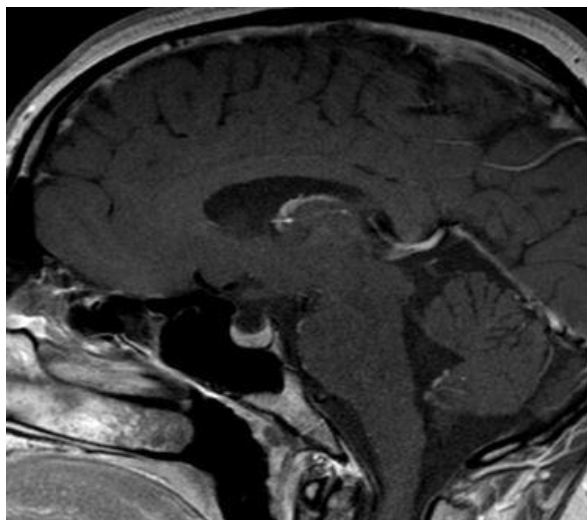


Figure – 2: MRI Brain showing Partial Empty Sella of Case 3.



Case - 3:

65 year old female who is a known diabetic and hypothyroid on oral hypoglycemic agents and Eltroxine had come with complaints of recurrent episodes of hypoglycemia since three months in spite of adequate oral food intake. Initially before 5 years when she was diagnosed to have hypothyroid her thyroid hormone levels were low and her TSH was high suggestive of primary hypothyroidism and she was started on Eltroxine 50 mcg once a day. She was off Eltroxine as her TSH became very low (TSH-0.006) since three months. Her investigation showed low plasma cortisol value (serum cortisol-2) and a low sodium (serum sodium - 133 meq/L and high normal serum potassium (serum Potassium - 5 meq/L) in spite of normal renal function. Her repeat cortisol values were low on 2 occasions and her ACTH was low (4.3) suggesting a central cause for cortisol deficiency. This problem could be the cause for her recurrent nocturnal hypoglycemic episodes. There was no past history of long term steroid use to suggest HPA (Hypothalamo-Pituitary Axis) suppression by exogenous steroids. Serum prolactin was elevated (79.3; Normal value - 10-25 ng/ml) and LH was inappropriately low (7 mIU/ml normal – in postmenopausal above 30) for a postmenopausal women suggesting hypopituitarism. The MRI of the pituitary showed a flattened pituitary gland at the floor of

the sella and the upper part of the sella was empty (**Figure - 2**). She was started on tablet Hydrocortisone 10 mg morning and 5 mg in the night daily following which she improved well and did not have any hypoglycemic symptoms since then.

Discussion

Hypopituitarism is one of the under investigated disease entity in the elderly. In the literature there is only one population based study which found the prevalence of about 45.5 cases per 100,000 and incidence of 4.2 cases per 100,000 in the adult population (mean age of diagnosis: 50 years, range - 18-79 years) [3]. The clinical manifestations of the hypopituitarism in elderly are bizarre as it is masked by the ageing and age related co-morbidities. We discuss these three different case scenarios to enlighten the importance of identifying the hypopituitarism in elderly individuals at right time and to initiate the treatment at right time.

Case - 1:

Sheehan's syndrome is considered to be the one of the most common causes of hypopituitarism in underdeveloped and developing countries [4]. It has various clinical presentations ranging from non specific symptoms to coma [4]. The most common presentation is Failure of Postpartum lactation and failure to resume menstrual cycle after pregnancy [4] which was seen in our patient also. There is predominant involvement of the anterior pituitary hormones though posterior pituitary involvement is also reported in 5% of individuals as central diabetes insipidus. The main hormones involved are the Growth hormone and prolactin [5] which involve about 90-100% while deficiencies in cortisol, Gonadotropins and TSH range from 50 -100 percent [5]. Partial hypopituitarism in our case is suggested by the decreased cortisol and low FSH for her age as in postmenopausal age group the FSH should be above thirty mIU/ml. The general treatment principle is the replacement of deficient hormones [5]. In our patient as the patient had deficient cortisol tapering of the

prednisolone was not possible as patient is dependent on the exogenous steroids due to deficiency of endogenous cortisol. The steroid supplemented for the Bronchial asthma replaced the endogenous cortisol deficiency in our patient in hypopituitarism. The patient was advised to continue the steroids and explained the need for parenteral hydrocortisone in case of acute illness as a part of stress coverage.

Case - 2:

This patient had Hyponatremia with neither edema nor dehydration suggestive of Euvolemic hyponatremia. The commonest causes of euvolemic hyponatremia are SIADH (Syndrome of inappropriate anti diuretic hormone excess), hypothyroidism, and glucocorticoid deficiency [6]. Glucocorticoids exert a negative feedback on AVP release by the posterior pituitary [7] so that glucocorticoid deficiency in hypopituitarism results in increased secretion of AVP resulting in a clinical picture similar to SIADH causing Euvolemic Hyponatremia. Hence, in elderly individuals, hyponatremia can be considered as the valuable investigation to suspect and start investigating for hypopituitarism. Further her investigation showed low cortisol and low TSH, and inappropriate FH and LH for her age which confirmed the diagnosis of partial hypopituitarism. Patient was started on Hydrocortisone supplementation and she improved and her sodium normalized as the hydrocortisone suppresses the increased AVP level and hence produces normal serum sodium. In postmenopausal women failure to detect high gonadotropins levels suggest hypopituitarism [8] and our patient had low normal gonadotropins which suggest hypopituitarism.

Case - 3:

The occurrence of recurrent hypoglycemia in Diabetic patients, hypopituitarism should be suspected and this association is called as Houssay Phenomenon [9]. Because of loss of counter regulatory hormones from anterior pituitary increased sensitivity to insulin occur which results in hypoglycemia and even complete amelioration of Diabetes Mellitus [10].

This patient had recurrent episodes of hypoglycemia and her TSH level which was initially raised lowered now due to secondary hypothyroidism due to reduced TSH hormone release from pituitary and In this case the thyroid hormone supplementation should be in accordance to the level of thyroid hormone levels rather than TSH. Further patient had hyponatremia and it warrants the need further evaluation of hypopituitarism as explained earlier. The serum cortisol was low and Further ACTH was also low on two repeat occasions, and low or normal gonadotropins in post menopausal were suggestive of pituitary dysfunction [11] and MRI brain showed Empty sella which reinforced the diagnosis.

Conclusion

The three different scenarios explained the need for high degree of suspicion of hypopituitarism in elderly individuals. Unexplained Euvolemic Hyponatremia, Low or normal gonadotropins in postmenopausal females, postpartum lactation failure and amenorrhea should alert the physicians to evaluate for hypopituitarism in elderly individuals to detect and initiate treatment early so as to prevent further complications.

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