



ORIGINAL RESEARCH PAPER

General Medicine

PRIMARY HYPERALDOSTERONISM PRESENTING AS SUBARACHNOID HEMORRHAGE

KEY WORDS:

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ABSTRACT

Primary hyperaldosteronism (PA) results from an abnormality in the adrenal gland's zona glomerulosa, which results in excessive aldosterone production. A medical condition known as subarachnoid hemorrhage occurs when blood leaks into the subarachnoid space. To make a quick diagnosis of primary hyperaldosteronism that manifests as subarachnoid hemorrhage. Particularly in its early phases, primary hyperaldosteronism may not exhibit any symptoms. If symptoms are present, they may be caused by either hypokalemia, severe hypertension, or both. Sodium loading or non potassium sparing diuretics might cause hypokalemia to occur. We present a case of a 32 year old woman who was on antihypertensive medication reported having uncontrolled hypertension. She relates her experience with subarachnoid hemorrhages. After a check up, it was discovered that the patient had an uncontrolled blood pressure of 170/100 mmHg. The blood test showed a potassium level of 2.7 mmol/l [3.5-5 mmol/l], creatinine of 0.9 mg/dl [0.7-1.4], Hb 10.5 gm/dl based on the preliminary blood tests a serum Aldosterone levels were asked which showed 23.7 ng/dl [2-9 ng/dl]. An abdominal CECT revealed a lesion in the medial limb of the right adrenal gland. All patients with resistant hypertension, particularly those taking several medications and exhibiting hypokalemia, should be suspected of having PA.

Introduction

- Primary hyperaldosteronism (PA) develops due to abnormality in the zona glomerulosa of the adrenal gland which results in excessive production of aldosterone.
- Primary hyperaldosteronism remains an important cause of secondary hypertension.
- Subarachnoid hemorrhage is a pathological condition in which the blood enters the subarachnoid space

Case Report

- A 32 year old female presented with complains of uncontrolled hypertension on 2+ antihypertensive agents. (amlodipine 10mg, atenolol 50mg)
- She gives history of a subarachnoid hemorrhage 4 years back, for which she had undergone neurosurgical intervention and recovered.
- Examination revealed a BP of 170/100mmhg which was not controlled on 2+ antihypertensive agents.
- Blood test showed a potassium level of 2.7mmol/l [3.5-5 mmol/l], creatinine 0.9 mg/dl [0.7-1.4], Hb 10.5gm/dl
- On the basis of the preliminary blood tests a serum Aldosterone levels were asked which showed 23.7ng/dl [2-9ng/dl]
- A CECT abdomen was done which revealed a lesion in the medial limb of the right adrenal gland.
- Her hypokalemia was corrected with oral potassium supplementation.
- She underwent a laproscopic right adrenalectomy. She tolerated the surgery well and was observed in the hospital for 4-5 days.
- Post surgery her hypokalemia improved however her hypertension persisted, but was under control with a single antihypertensive agent (amlodipine 10mg)



CECT Abdomen showing lesion on the medial limb of the right adrenal gland



Adrenal lesion highlighted in blue

	VALUES	NORMAL
Serum Aldosterone	23.7 ng/dl	2-9ng/dl
Potassium	2.7mmol/l	3.5-5 mmol/l
Plasma free Metanephrine	14.2pg/ml	12-60pg/ml
Creatinine	0.9 mg/dl	0.7-1.4(mg/dl)

DISCUSSION

- Primary hyperaldosteronism is an under diagnosed entity.
- PA has a higher mortality and morbidity when compared to individuals with essential hypertension.
- PA should be suspected in all individuals with resistant hypertension even those on multiple drugs and who develop hypokalemia
- Hypokalemia is only seen in 9-37% of PA patients and is usually seen on long standing disease
- Due to uncontrolled hypertension the patient presentation can vary from a wide range of symptoms like heart failure, renal dysfunction, cva
- Sub arachnoid hemorrhage in this patient was most likely a consequence of uncontrolled hypertension due to PA
- This case highlights the importance of diagnosing PA promptly as if left undiagnosed can lead to a wide variety of complications.

CONCLUSION

- Secondary hypertension is an essential risk factor for

subarachnoid hemorrhage

- In young patients with hypertension who present with subarachnoid hemorrhage it is important to investigate for secondary causes of hypertension including PA wherever suspicion arises
- As early diagnosis can prevent further complications of uncontrolled hypertension like CVA , Coronary artery disease ,renal dysfunction

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