



## Episodic Hypertension, Left Heart Failure, Head Ache, Due to Pheochromocytoma (Adrenal Gland) (A Case Report with Review of Literature)

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### ABSTRACT

*The diagnosis of pheochromocytoma requires a high degree of clinical suspicion, because of its rare incidence and also the signs and symptoms of this disease is episodic and presents with complications, like heart failure like in our case. As few of cases are malignant, most of patients can be cured for which early diagnosis is essential.*

**KEY WORDS:** Pheochromocytoma, NET (neuro endocrine tumor), MEN (multiple endocrine neoplasia), left ventricular failure (LVF), left ventricular hypertrophy (LVH)

### INTRODUCTION

Pheochromocytoma is a chromaffin derived NET. Most of the manifestations are due to catecholamine secretion. It has similar frequency of incidence in male and female and in 10% cases, it is familial, out of which 15-20% are autosomal dominant with association with VHL syndrome, NF-1 and MEN syndrome. It accounts for the cause of arterial hypertension in 0.1% of cases.<sup>1</sup>

### CASE REPORT

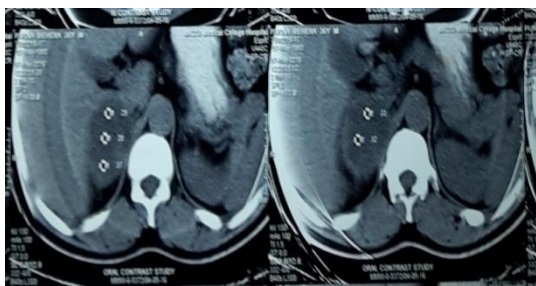
A young male of 36 years was presented to our emergency department with complains of hematemesis, epigastric and precordial discomfort (dull aching type without radiation) and occipital headache (throbbing type), with a h/o alcohol intake one day ago and he denied smoking habit. On admission he was afebrile and other clinical examination revealed no pallor, icterus or edema,

pulse rate-96/min, BP-140/90mmHg. Hence, admitted as a case of upper GI bleeding and managed with IV pantoprazole infusion. But after two hours in hospital, patient developed severe cough, breathlessness, orthopnoea and frank hemoptysis and on examination pulse rate was 120/min, BP 180/120mm Hg, bilateral diffuse crepitations was present, suggestive of left ventricular failure (LVF) with pulmonary edema. So patient transferred to intensive care unit (ICU) and managed with high flow oxygen and IV furosemide and pantoprazole infusion was omitted. Patient improved symptomatically. Examination in ICU, showed a profusely diaphoretic man with RR of 37/min. BP ranged from 90/50 mm hg to 190/120 mm hg. Pulse was 110-136/min and temperature was 101 F. He required high flow oxygen (6L/min) to maintain saturation. Bilateral basal crepitations was found

in chest. Abdomen was soft, no discrete masses were appreciated.

One year earlier he had visited another emergency department with similar complains of palpitation, headache, nausea, haemoptysis. He was treated symptomatically and discharged, having mild glucose intolerance only.

His labs showed Hemoglobin of 13.4g/dl, WBC count of  $13.3 \times 10^3$ /cmm with Neutrophil-74%, Lymphocytes-23%, total platelet count(TPC) 3.2 lakh/cmm, ESR was 14mm in first hour, serum creatinine was 1.3 mg/dL, blood urea of 49mg/dl, Sr Na<sup>+</sup>-143, Sr K<sup>+</sup>-4.5, liver function test showed total bilirubin-1.3, direct bilirubin-0.9,AST-42.8, ALT-49.5, ALP-144 IU/L and HBs Ag, anti HCV,HIV tests were negative. Urine examination showed albumin (++) .Ultrasound of abdomen showed medical renal disease only. X-ray chest was done on 5<sup>th</sup> day and it was normal. ECG showed LVH with left ventricular strain pattern, 2D ECHO showed normal valves, concentric LVH, LV dysfunction with sub optimal LV contractility (EF- 43%). Keeping in mind the paroxysm of blood pressure, intermittent LVF and evidence of left ventricular hypertrophy we investigated for possibility of pheochromocytoma. CECT abdomen and pelvis (Fig-1) showed (1) Enhancing mass lesion measuring (43x56mm) adjoining upper polar region or right kidney, (2) multiple small nodules in aorto-caval region.



(Fig-1)

24 hr urine examination- showed high values of (1) Metanephrine -2283.33microgm/24hr (74.00-297.00), (2) Non Metanephrine- 806.07 microgm/24hr (73.00-808.00). Serum cortisol 11-23microgm/dl (4.30-22.40) was normal.

We started treatment to control blood pressure and heart failure with back rest, oxygen inhalation,

antihypertensive (Tab Telmisartan, Tab Amlodipine, Tab Torsemide). Gradually patient improved clinically with treatment. Then he was referred to SCB Medical College, Cuttack for surgical treatment.

## DISCUSSION

Pheochromocytoma is benign encapsulated vascularised tumor with an average diameter of 5cm and weight <70g. Extra adrenal pheochromocytomas are usually found in young adults. They secrete catecholamines like norepinephrine, epinephrine, dopamine and peptides like neuropeptidey, adrenomodulin, and chromogranin A<sup>2</sup>. Clinical manifestations in pheochromocytoma involves paroxysmal hypertension (50%) and episodic headache as most common presentations. Palpitation, diaphoresis, nausea, vomiting, abdominal pain and chest pain are other clinical manifestations. ECG may show features of LVH and cardiac ischeamia<sup>1</sup>.

Patients presenting with episodic hypertension or sustained hypertension but refractory to standard treatment needs further screening for secondary hypertension like pheochromocytoma. It includes plasma catecholamine, metanephrine and assessment or 24 hr urine test for fractionated or unfractionated metanephrine, VMA, free catecholamines. False positive results occurs with caffeine, TCA, acetaminophen, Levodopa, phenoybenzamine, so all these drugs should be avoided 2 weeks prior to testing. Patients with pheochromocytoma have very high level of catecholamines. (>2000pg/ml). But when the values are equivocal(1000-2000pg/ml) clonidine suppression test and glucagon provocative tests etc are used for diagnosis<sup>3</sup>.

Diagnostic localization of pheochromocytoma can be done by CT or MRI. MRI shows distinctive bright signal on T2 weighted images. If equivocal results are obtaining MIBG (I123), selective arteriography or venous sampling for catecholamines or PET (F18) scanning are used for the diagnosis<sup>3</sup>.

**CONCLUSION**

Though pheochromocytoma is rare disease, it is not uncommon. Most of them are benign and curable with surgery. High degree of clinical suspicion is corner stone for diagnosis. However multi departmental consultations are required to cure the patient.

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