Elusive Origins- Ectopic ACTH syndrome with adrenal metastases from an unknown primary

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Introduction

- Ectopic ACTH secretion (EAS) is rare and accounts for about 10-20% of ACTH dependent Cushing's syndrome. It is commonly associated with neuroendocrine tumors like bronchial carcinoid and small cell lung cancer.

Case description

- This is an 81-year-old gentleman who is evaluated for recurrent infections, uncontrolled diabetes, hypokalemia, and generalized weakness requiring multiple hospital admissions.
- His workup was consistent with ACTH dependent Cushing's syndrome.
- Further evaluation with high dose dexamethasone suppression test (8mg DST), suggested EAS.
- Imaging showed extensive metastatic malignancy with unclear primary involving bilateral adrenal glands.
- The patient was started on ketoconazole to treat hypercortisolism and Octreotide to reduce ACTH secretion.
- However, due to clinical deterioration and unclear prognosis, the patient elected to transition to comfort care and eventually passed away in the hospital.

Discussion

- Primary adrenal cancers are mostly cortisol producing, while extensive metastasis to the adrenals usually causes adrenal insufficiency.
- In our patient, it is unclear what the primary cancer is, however, he presented with rapid hypercortisolism, with workup consistent with EAS.
- Treatment of EAS involves primary tumor resection. Second line therapies include ketoconazole, mitotane and mifepristone amongst the most common ones.
- Bilateral adrenalectomy can be indicated in metastatic cases for symptomatic relief or therapy failure.
- It remains unclear if the patient died from effects of hypercortisolism or the cancer itself.

	AM labs prior to 8mg DST	AM labs post 8mg DST
ACTH	761.7 pg/ml	741 pg/ml
Cortisol	107.8 ug/dl	113.8 ug/dl

Table 1: High dose DST showing no suppression of ACTH and cortisol, suggestive of EAS

Conclusion

- Often, paraneoplastic syndromes can be the initial manifestations of an underlying malignancy.
- Our patient had signs and symptoms suggestive of cortisol excess over the last few months, further evaluation of which led to the worrisome diagnosis.
- Hence, clinicians should have a high index of suspicion for endocrinopathies when patient presents with chronic, nonspecific symptoms.
- Early recognition facilitates prompt diagnostic evaluations, ultimately reducing therapeutic complications and improving patient outcomes. out.