Image Diagnosis: Aortic Thrombus in Severe Hypercortisolemia

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CASE PRESENTATION

A 42-year-old man was admitted to our internal medicine service after being found to have an aortic thrombus. The patient presented to his primary care practitioner many days earlier with cough, dyspnea, lower extremity swelling and weakness. He was given antibiotics but did not improve, prompting evaluation for pulmonary embolism. A computed tomography scan of his chest showed extensive nonocclusive aortic thrombus extending from the aortic arch to proximal to the celiac artery (Figures 1 and 2). The scan also showed a large 8.4 cm x 6.3 cm heterogeneous right adrenal mass (Figures 2 and 3) with internal calcifications and large retroperitoneal and mesenteric nodes with omental caking, indicating metastases.

Further workup noted a severely elevated cortisol level at 133 ug/dL with low adrenocorticotropic hormone (5 pg/mL), signifying a probable high-functioning adrenocortical carcinoma. Omental biopsy confirmed the diagnosis of metastatic adrenal cortical carcinoma. Tumor staging workup revealed drop metastases into the patient's pelvic region as well. For the above reasons, our patient was not deemed a surgical candidate and at his family's request underwent 1 cycle of chemotherapy (cisplatin, etoposide, and doxorubicin), after which he rapidly declined with altered mental status, severe myopathy, and acute kidney injury. He was transferred to the intensive care unit after experiencing progressive respiratory depression and worsening delirium. Intubation was recommended in the intensive care unit. His family then declined further aggressive care and opted for inpatient hospice care, where he died 2 days later.

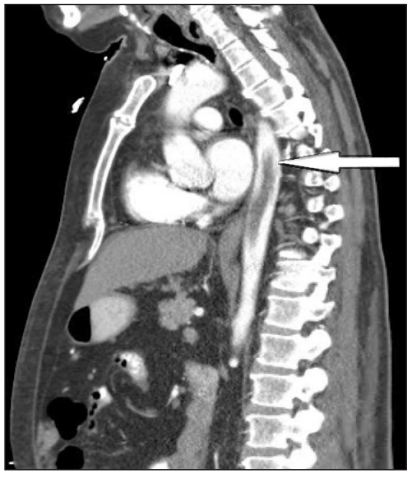

Figure 1. Saggital-view computed tomography image of the patient's chest. The white arrow indicates the large aortic thrombus originating at the left subclavian artery.

DISCUSSION

Patients with hypercortisolemia are known to be at risk for venous thromboembolism (VTE) and arterial thromboses.[1] Hypercoagulability is postulated to be caused by increased production of procoagulant factors, leading to increased activation of the clotting cascade. Glucocorticoid-mediated increase in Factor VIII and Von Willebrand factor complex contribute to an increased incidence of VTE, as demonstrated in a multicenter cohort study in the Netherlands, where the incidence rate of VTE was 14.6 per 1000 person-years compared with a much lower incidence of 1 to 2 per 1000 person-years in the general population.[2] Elevated homocysteine levels have also been implicated. However, adrenal cortical carcinoma as a cause for elevated cortisol is quite rare, with 1 to 2 cases per million population per year.[3] In cases with no family history or other risk factors, rapid progression is seen in adults diagnosed usually in the fourth or

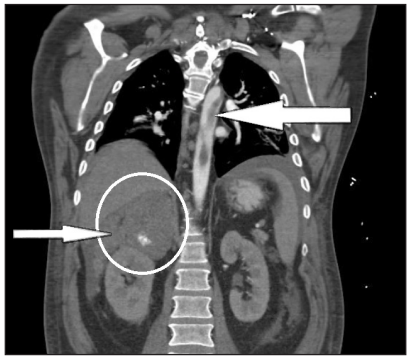

Figure 2. Coronal-view computed tomography image of the patient's chest. The larger white arrow indicates the aortic thrombus. The white circle shows the adrenal mass with calcifications.

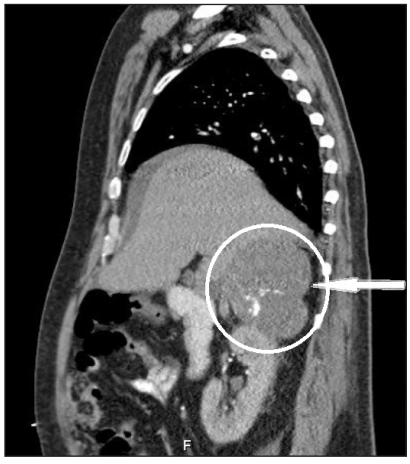

Figure 3. Saggital-view computed tomography image of the patient's chest showing the large 8.4 cm x 6.3 cm right adrenal mass with internal calcifications.

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fifth decade of life compared with those diagnosed in childhood.[4]

Because of the nonspecific nature of our patient's presentation, diagnosis was delayed until it had spread extensively, leading to a poor outcome. Earlier diagnosis would have permitted a genetics evaluation for hereditary cancer syndromes. Early diagnosis also is often amenable to surgical resection, which sadly was not possible in our case. ❖

Disclosure Statement

The author(s) have no conflicts of interest to disclose.

How to Cite this Article

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