

Thyroid Storm: A Diagnostic Conundrum

Maharaul Mashrutee, MD¹, Raghuwanshi Maya MD², Umar Rehan MD³, Reza Pishdad MD⁴

1 Department of Medicine, Saint Barnabas Medical Center, 2, 3 Department of Endocrinology, Rutgers New Jersey Medical School, 4 Department of Medicine, Rutgers New Jersey Medical School

Introduction:

We report a case of thyroid storm presenting as heart failure in a young female

Case:

47 yo woman with PMH of hypertension and obesity presented to ER with 3 weeks of SOB, chest pain, leg swelling, and palpitations. Upon evaluation, she was in respiratory distress, tachypneic and tachycardic. She had bilateral proptosis, JVD, bibasilar crackles and pitting edema. Labs revealed BNP 539 pg/ml and D-Dimer 6401 ng/ml. ECG showed atrial flutter, CXR showed bilateral pleural effusions, and CT Chest was negative for PE. She was admitted to CCU for diuresis, HR control and started on anticoagulation. Medical records revealed patient was hyperthyroid 8 months ago but was not discharged on medications. Her Burch-Wartofsky score >70, she was started on IV hydrocortisone and cholestyramine for thyrotoxicosis. Endocrinology was consulted and added PTU. TFTs revealed a TSH 0.006 IU/ml, FT4 4 ng/dL and T3 2.5 ng/ml. ECHO showed LVEF of 14% with global hypokinesis and thyroid ultrasound revealed enlarged thyroid with solid, isoechoic, calcified nodule, 0.8 x 0.4 x 0.5 cm. Her TSI and TRab were elevated at 17.20 IU/L and 20.20 IU/L. She responded to treatment and was discharged with outpatient Cardiology and Endocrinology follow-ups.

Discussion:

Thyroid disease is a common illness affecting 9-15% of adults. Thyrotoxicosis refers to hypermetabolism from excessive thyroid hormones. Incidence of thyroid storm is 0.57 to 0.76/100,000 people annually in the US. It most commonly occurs in women and is more common in patients with underlying Grave's Disease. The exact underlying mechanism is not well understood but adrenergic activation seems to play a role. Our patient had long-standing untreated hyperthyroidism with a solid nodule which led to this crisis. The most common cause of death is cardiopulmonary failure and hence treatment should be initiated as soon as diagnosis is suspected owing to high mortality.