دفتر توسعه آموزش (EDO) بیمارستان رازی

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Case 10-2015: A 15-Year-Old Girl with Graves' Disease and Psychotic Symptoms

A 15-year-old girl with Graves' disease was admitted to this hospital because of psychotic symptoms.The patient had been well until approximately 3 months before the current admission, when intermittent dizziness, palpitations, near syncope, diaphoresis, polyuria, polydipsia, diarrhea, chest and abdominal pain, headaches, and increasingprotuberance of the eyes developed.

Eleven weeks before this admission, she was evaluated at an emergency department of another hospital. She had a blood pressure of up to 168/86 mm Hg, and a pulse of up to 126 beats per minute. A CBC and the ESR were normal, as were blood levels of electrolytes, calcium, glucose, total protein, albumin, total bilirubin, urea nitrogen, and creatinine. Screening of the blood for toxins, Lyme disease, and antibodies against thyroglobulin, microsomes, and thyroperoxidase was negative, as was a urine pregnancy test.

On evaluation, the patient reported no intolerance to heat or cold, tremor, or weight loss. She had had anemia as an infant and had undergone a cholecystectomy for cholelithiasis at 14 years of age. Menarche occurred at 11 years of age. She took no medications, her immunizations were up to date, and she had no known allergies. She did not smoke, drink alcohol, or use illicit drugs. Her mother had celiac disease, a paternal aunt had hypothyroidism, her paternal grandmother had vitiligo and had undergone a thyroidectomy, and her father and siblings were healthy.

On examination, the blood pressure was 110/72 mm Hg, and the pulse 114 beats per minute; the temperature and respiratory rate were normal. The height was 166.3 cm, the weight 81.1 kg, and BMI; 29.3. Proptosis, a pronounced stare, and a tremor of the tongue with protrusion were present. The thyroid was enlarged (each lobe 4 cm in diameter), without palpable nodules or an audible thyroid bruit. The remainder of the examination was normal.A thyroid scan, showed an enlarged thyroid gland with homogeneously increased tracer uptake.The patient received a diagnosis of Graves' disease, and treatment with atenolol (25 mg twice daily) and methimazole (30 mg daily) was begun.

(7.5 weeks before this admission), the patient reported occasional headaches and dizziness, decreased palpitations and diaphoresis, and improved vision and sleep. Follow-up with thyroid ablation was planned. During the following month, the patient's family noted increasing bulging of her eyes.

Approximately 5 weeks before this admission, the patient reported increased distress regarding her physical appearance and a lack of friends. Two weeks later, she told her sister that voices were following her everywhere and that "the devil wants me." She cut herself with an earring and told her family that she did not feel safe.

Three weeks before this admission, the patient reported awakening each morning around 3 a.m. Her energy and interest levels were low. She reported, "I have wanted to kill myself for a while, but it has gotten worse. I'm just done feeling fat and ugly. I just don't want to be here." She also felt tormented by voices that she thought were following her to school; the voices told her not to eat and gave her ideas about ways to kill herself, including "go into the kitchen and get knives." She had reportedly tried to leave her house in the middle of the night to stab herself. During the previous month, she had begun skipping meals and purging after eating because the internal voices were saying that food was bad. Her performance in school deteriorated.

On examination, She was tearful, sad, and anxious but cooperative. Her speech was normal, and she had ruminative thought processes regarding the voices she was hearing that were instructing her to kill herself.The patient was admitted to the inpatient psychiatry unit of the other hospital. The dose of methimazole was increased to 40 mg daily, and treatment with olanzapine (5 mg at bedtime) and lorazepam (1 mg every 4 hours) was begun .On the sixth day, anxiety decreased, quality of sleep improved, and auditory hallucinations and urges for self-injurious behavior resolved and She was discharged, after a follow-up appointment in the outpatient endocrinology clinic of this hospital had been scheduled.

After discharge, the patient became hyperreligious; she impulsively changed churches and talked about "giving herself to God." She reported feeling depressed and weak,with decreased energy but without suicidal ideation or hallucinations. She was readmitted to the inpatient psychiatry unit of the other hospital; 1 week later, she was transferred to this hospital.

Differential Diagnosis: Primary Mood Disorder, Primary Psychotic Disorder, Substance-Induced Mood or Psychotic Disorder, Delirium, Eating Disorder, Mood Disorder Due to Another General Medical Condition.

Discussion of Management: Treatment of the underlying condition is sufficient to address most psychiatric disorders associated with hyperthyroidism. Treatment with an atypical antipsychotic agent such as olanzapine is a good choice for this patient.The three strategies to consider for the treatment of Graves' disease in this patient are antithyroid medication (Methimazole is preferred over propylthiouracil) , radioactive iodine, and surgical thyroidectomy. In this patient, a total thyroidectomy was performed. The pathological diagnosis is diffuse nodular papillary hyperplasia, which is consistent with partially treated Graves' disease. After the thyroidectomy, the patient's voice was normal. However, despite supplementation with oral calcium, profound temporary hypocalcemia. developed, with a calcium level as low as 6.6 mg per deciliter. In this case, the hypocalcemia was temporary. The patient was discharged on the sixth hospital day, and after 2 months, the administration of calcium and calcitriol was discontinued. After 1 year, she was receiving only thyroidhormone replacement therapy with levothyroxine (125 mg daily), and results of thyroid-function tests were normal.

Final Diagnosis: Graves' disease with diffuse nodular papillary hyperplasia of the thyroid. Bipolar disorder due to another medical condition (Graves' disease), with mixed manic and depressive features and psychotic features.

Table 1. Laboratory Data.*

Variable	Reference Range, Age-Adjusted†	11 Wk before Admission, Other Hospital and Pediatrician's Office	10.5 Wk before Admission, Endocrinology Clinic, This Hospital	7.5 Wk before Admission, This Hospital	3 Wk before Admission, Other Hospital	3 Wk before Admission, Other Hospital
Alanine aminotransferase (U/liter)	7-30	45		39	32	39
Aspartate aminotransferase (U/liter)	9-32	30		26	24	32
Alkaline phosphatase (U/liter)	15-350	244 (ref 50–200)		254	239	274
Thyrotropin (μU/ml)	0.40-5.00	0.07	0.01	<0.01	0.02	<0.01
Free thyroxine (ng/dl)	0.9-1.8	4.9	6.2	5.0	3.5	3.0
Thyroxine (μg/dl)	4.5-10.9	20.3	21.5		18.0	
Total triiodothyronine (ng/dl)	60-181	596	494		349	
Thyroglobulin (ng/ml)	≤33 (≥16 yr of age)	191				
Thyroid-stimulating immunoglobulin (TSI index)	≤1.3		5.4			
Sex hormone–binding globulin (nmol/liter)	17-77					101
Leptin (ng/ml)	3.3-18.3					34
25-Hydroxyvitamin D (ng/ml)	>32					15