Thyroiditis

Case Studies

The patient, a 23-year-old woman, has had a bout of flulike symptoms over the past few weeks. Most recently, she has become increasingly tired. She is taking birth control pills to control her menses. Her anterior neck became painful during the past few weeks. The physical examination results reveal that her thyroid is diffusely enlarged and mildly tender.

Studies	Results
Routine laboratory tests	Within normal limits (WNL)
Total thyroxine (T_4), p. 497	8 mcg/dL (normal: 5-12 mcg /dL)
Free T_4	0.5 ng/dL (normal: 0.8-2.7 ng/dL)
Free T_4 index	0.4 ng/dL (normal: 0.8-2.4 ng/dL)
Triiodothyronine (T_3), p. 506	52 ng/dL (normal: 70-205 ng/dL)
Thyroxine-binding globulin (TBG), p. 495	12 mg/dL (normal: 1.7-3.6 mg/dL)
Thyroid stimulating hormone (TSH), p. 486	32 microunits/mL (normal: 2-10 microunits/mL)
Thyroid scanning, p. 839	Enlarged gland; normal shape, position, and function of the thyroid gland. No areas of decreased or increased uptake
Thyroid ultrasound, p. 895	Enlarged gland; normal shape and position of the thyroid gland
Thyroid antibodies	
Antithyroglobulin antibody, p. 102	1:250 (normal: titer <1:100)
Antithyroid peroxidase antibody, p. 104	1:500 (normal: titer <1:100)
Thyroid-stimulating immunoglobulins, p. 491	Negative

Diagnostic Analysis

Total T_4 measures protein-bound and unbound T_4. Because the patient was taking birth control pills, her TBG was elevated; therefore, her total T_4 was normal. Free T_4 and FT_4 index tests measure unbound T_4. When the free T_4 and the FT_4 index were measured, they were found to be low, indicating that the patient had hypothyroidism. The TSH level was elevated because of primary failure of the thyroid. The thyroid antibodies were elevated, indicating that the patient had Hashimoto thyroiditis. Her long-acting thyroid stimulator (LATS) levels were normal, discounting Graves disease as a cause of her diffusely enlarged thyroid. Her thyroid ultrasound and scan failed to show any localized, defined tumor.

The patient was started on thyroid replacement therapy, and her TSH level returned to normal. Over the next few weeks, she felt markedly better. Her thyroid pain and tiredness disappeared.

Critical Thinking Questions

1. Why were the thyroid antibodies important in this patient's diagnosis?
2. What symptoms might she experience if too much thyroid replacement medication were administered?