

- Involuntary movement is a specific symptom of moyamoya disease.²
- Ischemic stroke in moyamoya syndrome is postulated to be precipitated by thyrotoxicosis-induced hemodynamic instability.
- A higher prevalence of concomitant autoimmune disease has been reported in patients with moyamoya.³

CASE CONTINUED

- Neuroimaging incidentally showed a multinodular goiter with a 1.7 cm right thyroid nodule.
- Subsequently TSH was obtained and resulted as <0.030 mIU/mL (0.27-5.00 mIU/mL) with a reflex FT4 of >7.00 ng/dL (0.6-1.8 ng/dL).
- A review of her prior TFTs showed biochemical euthyroidism (Table 1).
- Due to iodinated contrast administration on admission, RAIU scan was deferred.
- Thyroid ultrasound showed multinodular goiter with diffuse increased vascularity and multiple TI-RADS 4 and 5 nodules bilaterally (Figure 3).
- On further questioning, the patient reported tachycardia, diarrhea, weight loss and decreased appetite prior to hospitalization.

CASE CONTINUED

- A diagnosis of Graves' disease was confirmed with TSI of 70.7 IU/L (0.00-0.55 IU/L).
- She was started on methimazole 20 mg twice daily and propranolol 20 mg q6h.
- FT4 downtrend from >7.00 to 3.3 ng/dL at time of discharge (Figure 4).
- Following four weeks of methimazole 20 mg daily, FT4 normalized to 1.70 ng/dL.
- Genetic testing showed no identifiable mutation of RNF213, ACTA2 or GUCY1A3.
- The patient chose to continue antithyroidal drug therapy for treatment of Graves' disease.

- CT angiography of the head and neck noted diffuse stenosis of intracerebral vasculature and significant stenosis of the cavernous and supraclinoid portions of the internal carotid arteries. Prior MRA head demonstrated left ICA stenosis with minimal ACA and MCA flow (Figure 1).
- MRI brain later confirmed an acute infarct in the right ACA distribution (Figure 2).

LABS

Laboratory Test and Course	Jan2010	Sep2020	Oct2020	Feb2021	Reference
TSH (mIU/ml)	3.46	<0.030	<0.030	<0.03	0.27-5.00
Free thyroxine (ng/dl)	--	>7.00	1.70	1.20	0.6-1.8
Thyroid peroxidase antibody (IU/mL)	--	12.72	--	--	0-5.6
Thyroid stimulating immunoglobulin (IU/L)	--	70.70	29.10	--	0-0.5

Table 1: Thyroid function tests and antibodies.

LABS

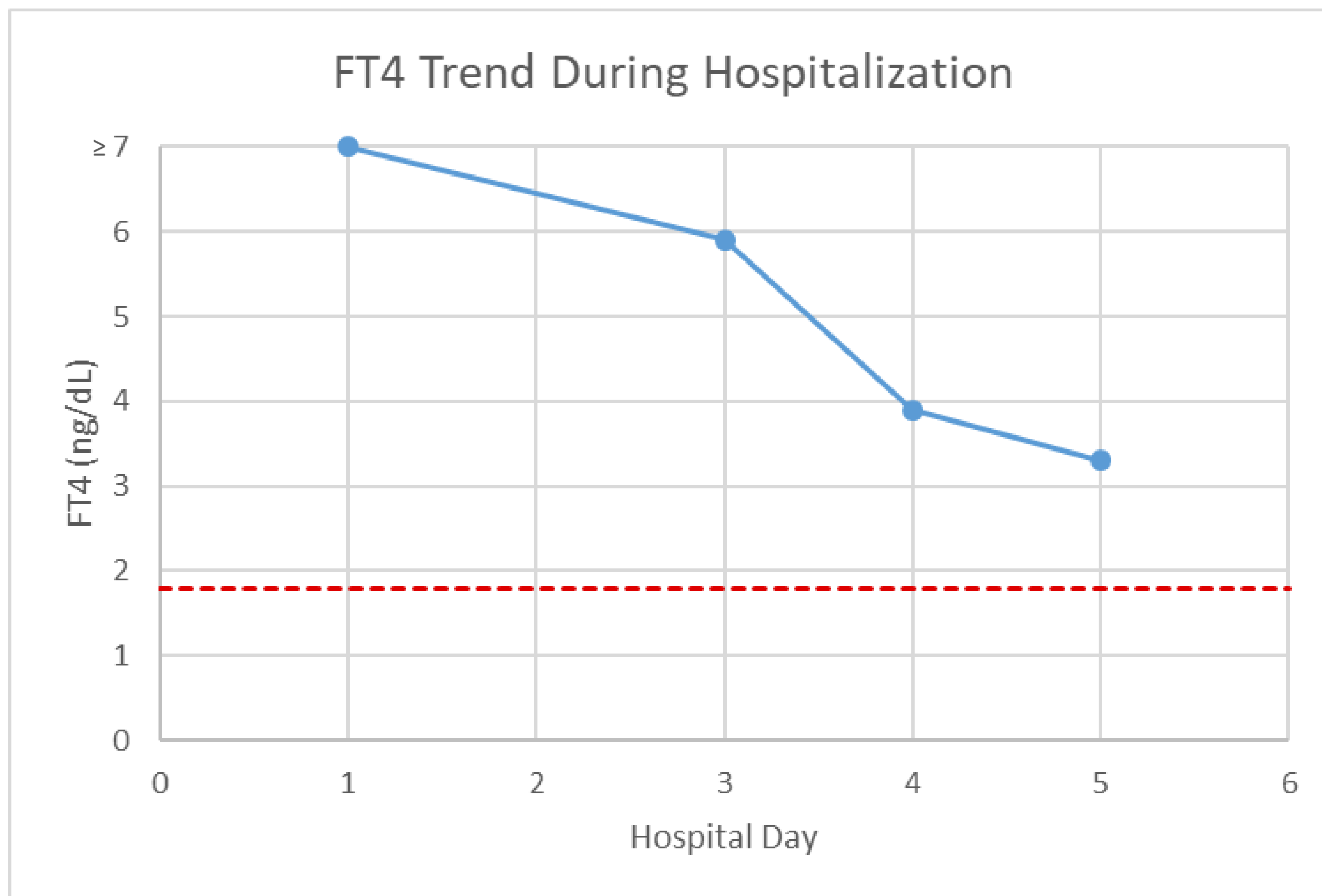


Figure 4: FT4 Trend. The red hashed line represents the upper limit of normal for FT4 reference range (1.7 ng/dL)

- Thyroid with moyamoya
- Cerebrovascular disease and the ischemic stroke
- If moyamoya syndrome should be considered

1. Scott RM, et al. JAMA. 1993;269(19):360-361.
2. Hishikawa Y, et al. Stroke. 2003;34(10):2400-2404.
3. Bower R, et al. Stroke. 2013;44(10):2400-2404.
4. Ni J, Zhou J, et al. Stroke. 2013;44(10):2400-2404.