# Mediquiz

***Series - 1***

## Thyroid disorders

**Rudrajit Paul**[1]
*Quiz Master*

(1) A 38 year old woman came to the emergency with palpitation, tremor and restlessness. On examination, she had pulse: 130/min, BP : 150/70 mm of Hg and fine tremor in hands. There was no goiter, exophthalmos or thyroid bruit. She was sweating profusely. Emergency ECG showed only sinus tachycardia. Her brother said that she had had similar episodes twice in the past, which were diagnosed as anxiety disorder. She denied any addiction. The next day, her TSH value came as 0.03 µIU/L. Serum T4 was elevated. What is the next best test for diagnosis of the condition ?

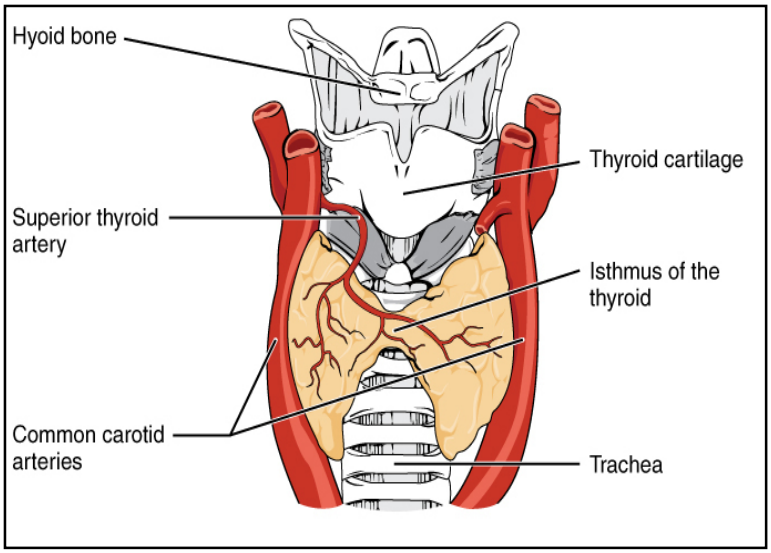
(a) Serum T3
(b) Thyroid scan
(c) Serum thyroglobulin
(d) Serum anti-TPO antibody level

(2) A 29 year old woman, a primigravida, presented in the 11th week of gestation with severe vomiting. She also complained of headache, weakness and palpitations. Her pulse was 110/min, regular and blood pressure was normal. Rest of the clinical examination was normal. Laboratory reports showed TSH 0.1 µIU/L and fT4 38 pmol/L (N; 10—20). What is the next best course of action?

(a) Wait and watch
(b) Start anti-thyroid drugs (PTU)
(c) Terminate the pregnancy
(d) Do a thyroid scan to determine the cause

(3) Plummer's nails are a typical feature of hyperthyroidism. Which is the commonest anatomical location for this nail change?

(a) Great toe
(b) Thumbs
(c) Little finger
(d) Ring finger




(4) A 49 year old woman presented with abdominal swelling, weight loss and profuse sweating. She had tachycardia, tachypnea and pedal edema. Her TSH level was 0.03 µIU/L. There was no goitre, eye signs or skin changes. Serum thyroglobulin was high. What is the next best test to be done for diagnosis?

(a) Thyroglobulin level
(b) CECT abdomen
(c) TrAb level
(d) Thyroid gland colour Doppler study

(5) A 23 year old man is admitted with recurrent palpitations. He had been diagnosed with atrial fibrillation 1 year ago and started on amiodarone. This time, on examination, he is found to have nogoiter. TSH level was 0.07 µIU/L and fT4 level was 50 pmol/L. Anti-TrAb was negative. A thyroid scan showed markedly reduced uptake. What is the next best line of management ?

a. Oral steroids
b. Stop the Amiodarone
c. Wait and watch
d. Start anti-thyroid drugs

***(Answer : next page)***

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## *Answer : Mediquiz*

**1. C**

***Explanation :*** This patient has presented with features of hyperthyroidism, which is also supported by the preliminary biochemical tests. From history, this seems to be a case of recurrent hyperthyroidism episodes. Grave's disease can rarely cause such episodes. But in complete absence of any other clinical feature, this is unlikely. Recurrent thyroiditis is a possibility, as is factitious thyrotoxicosis. In thyroid scan, both will show decreased uptake. But serum thyroglobulin will be high in endogenous thyrotoxicosis like thyroiditis or drug induced thyroid hyper-function while it will be low in exogenous thyrotoxicosis. So, if serum thyroglobulin level is low in this scenario of biochemical hyperthyroidism, then exogenous thyroxin intake is the only possibility and this will clinch the diagnosis easily. Serum anti-TPO level is a non-specific marker. It can be positive in Grave's disease or thyroiditis.

**(2) A**

***Explanation :*** The presentation of this woman is likely to be transient gestational thyrotoxicosis. This is a common occurrence, especially in women with hyperemesis gravidarum. This apparent thyrotoxicosis is caused by high levels of HCG, which have a common subunit with TSH. This can, thus, stimulate the TSH receptor and lead to high T3 and T4 levels. There is no need of anti-thyroid drugs as the condition resolves spontaneously by 14-15$^{th}$ gestational week. So, symptomatic management with replacement of fluid and electrolytes is mostly enough. If the biochemical hyperthyroidism persists after 20$^{th}$ week of gestation, then search for other pathologies may be needed. Of course, if there are florid clinical signs of Grave's disease in first trimester, like exophthalmos or goiter, then the management will be different. Thyroid scan is contraindicated in pregnancy.

**(3) D**

***Explanation :*** Plummer's nails are a rare manifestation of thyrotoxicosis. But if present, they are highly suggestive of the diagnosis. Historically, it has been seen that this clinical finding is commonest in the fourth digits of hands. Differential rates of growth of the nails and underlying nail beds lead to onycholysis. In advanced stages, other fingers may also be involved.

**(4) B**

***Explanation :*** This patient has features of thyrotoxicosis with abdominal swelling, pedal edema and weight loss. So, the possibility of an abdominal tumour causing ectopic thyroid hormone secretion must be thought of. If this is an ovarian tumour, the condition is called struma ovarii. This is a rare tumour and in 10% of cases, it may be malignant. So, a CECT abdomen would be the best next step for diagnosis. Serum thyroglobulin level will be high in Struma ovarii and thus, it will not help in diagnosis.

**(5) A**

***Explanation :*** This patient has amiodarone induced thyroiditis (AIT) type 2. This is diagnosed by reduced radiotracer uptake, absence of goitre and absence of antibodies. For this condition, oral steroids are the first choice of therapy. Amiodarone can only be stopped in consultation with the cardiologist, provided alternative drugs are available. But this decision will take time. But AIT is a medical emergency and the steroid has to be started early.