# A Rare Case of Polymyositis with Autoimmune Subclinical Hypothyroidism

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**Abstract :**

Hypothyroidism is commonly associated with myopathy. Subclinical hypothyroidism usually presents with vague complaints. Association of autoimmune hypothyroidism with autoimmune polymyositis is known but rare. We diagnosed a patient of polymyositis which also had thyroid dysfunction. Both the conditions were found to be of immunological aetiology with presence of abnormal autoimmune markers in patient's serum. Patient was treated with steroid therapy and analgesic and he responded well with complete recovery of polymyositis. He was kept under observation for subclinical hypothyroidism.

**Key Words :** Autoimmune, Hypothyroidism, Polymyositis

## Introduction :

The thyroid hormone, thyroxin is necessary for cell metabolism. Hypothyroidism manifests as an insidious onset systemic disease with involvement of central and peripheral nervous system and presentation of psychiatric symptoms, cerebella ataxia, cranial neuropathy, peripheral neuropathy and myopathy. Autoimmune thyroiditis is one of the common immunological disorder presenting with increased immunological markers like, Anti TPO (thyroid peroxidise) antibody & anti Thyroglobin antibody in patient's serum. Polymyositis is also an autoimmune disease and presents with increase in immunological and inflammatory markers like serum glutamic oxaloacetic transaminase (SGOT), serum creatinine kinase (CPK TOTAL). Here we are presenting a rare case of autoimmune disorder having both, subclinical hypothyroidism and polymyositis which is a very rare association as found in literature. [1][2]

## Case presentation

A 20 year old male patient presented with complaints of pain swelling and weakness of proximal muscles of all the four limbs; the presentation was more on left side. Tenderness and oedema was also noted on involved limbs. Power in involved muscles was nearly grade 2 to 3. There was no sensory loss and reflexes were normal. Higher functions as well functions of cranial nerves were found normal. On general examination, neck swelling was clinically unapparent. Patient was investigated for various immunological and serological markers as suggested in Table 1.

**Table 1: Clinical and laboratory parameters at regular interval**

| TIME | Total WBC count (per cmm) | % of Polymorph | S. TSH mIU/ML | ANTI TPO IU /ML | SGOT IU /ML | S. CPK Total Unit/L | Muscle Power |
|---|---|---|---|---|---|---|---|
| On admission | 10000 | 90 | 5.7 | 44 | 140 | 604 | Grade 2 to 3 |
| After 5 days | 17000 | 95 | 7.4 | 64 | 70 | 806 | Grade 3 to 4 |
| After 20 days | 9000 | 70 | 14.5 | 60 | 60 | 260 | Grade 5 |

Electromyogram (EMG) was suggestive of polymyositis while the Nerve condition velocity (NCV) study was normal. Other investigations like Antithyroglbulin Antibody, S.Bilirubin, SGPT, S.T3, Free T4, X Ray Cervical Spine were Normal. Anti nuclear antibody (ANA) was negative. Doppler study of all four limbs found normal.

Patient was initially treated with Injectable methyl prednisolone & then switched on oral Prednisolone (60 mg /day) for 10 days. Then the dose of oral Prednisolone was gradually tapered. Initially thyroid replacement was not given but on follow up low dose thyroid replacement started as S.TSH was found more than 10 m I U/L. Patient responded to therapy with normalised in power and disappearance of tenderness. Muscle biopsy was not done as patient had refused and responded to therapy

## Discussion

Mean annual incidence of autoimmune hypothyroidism is

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4/1000 female and 1/1000 male. Subclinical hypothyroidism is 6% to 8% in female while 1% in male. [2] Hashimoto's hypothyroidism usually has insidious onset and is rarely associated with severe muscular pain. Anti Thyroid peroxidise antibody is positive in 95% to 100%, while antithyroglobine antibody detected in 70% of patient. [3] [4] In present case, anti TPO antibody titre positive and S. TSH was elevated while S. $T_3$, S. $T_4$, were normal. Polymorphonucleocytosis is strongly suggestive of inflammation. USG of thyroid gland revealed generalised enlargement so biopsy was not insisted and also as all the serological markers were consistent with hashimotos' thyroiditis.

Polymyositis (PM) is rare entity as with incidence of 1/100 000; the sporadic occurrence is common in more than 18 years of age group. PM was diagnosed by the clinical presentation - proximal weakness and tenderness of four limbs without involvement of ocular muscles and facial muscles. EMG and S. CPK total, SGOT raised with normal LFT confirmed the clinical diagnosis. No rash was detected on skin which ruled out the dermatomyositis and inclusion body myositis. In the present case, all the clinical and laboratory parameters with EMG findings were diagnostic of PM. Muscle biopsy was not done as the patient refused for that; and also because he responded to steroid therapy with improvement in all clinical and investigational data as shown in table 1 within 3 weeks.

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