

Case Report

Autoimmune hepatitis and myositis as presenting manifestation of mixed connective tissue disease – A case report

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Received : 24 April 2023
Accepted : 09 July 2023
Published : 04 October 2023

DOI
10.25259/MEDINDIA_21_2023

Quick Response Code:



ABSTRACT

In the course of mixed connective tissue disease (MCTD), hepatitis is very rare. Most commonly liver steatosis or elevated liver enzymes are reported and only a few cases of MCTD associated with autoimmune hepatitis were described previously. We report a case of 30-year-old female, who initially presented with autoimmune hepatitis and was treated with oral Prednisolone. Few weeks later, she presented with lower motor neuron weakness of all four limbs with normal reflexes and sensory findings. Clinically, the pattern of weakness was suggestive of a myopathic process which was confirmed with a high creatine phosphokinase levels and electromyography. She had history of Raynaud's phenomenon with minimal skin thickening involving the extremities and face. Thus, a diagnosis of overlap syndrome/MCTD was kept. MCTD has been confirmed on high titers positive anti U-1 ribonucleoprotein antibodies. Autoimmune hepatitis and myositis as the presenting manifestation are very rare. Here, we highlight a patient of MCTD with initial symptoms of autoimmune hepatitis and myositis.

Keywords: Mixed connective tissue disease, Autoimmune hepatitis, Myositis, Raynauds

INTRODUCTION

Mixed connective tissue disease (MCTD) is a rare systemic autoimmune disease. It was first described in 1972 by Sharp *et al.*,^[1] and refers to a systemic autoimmune disease with a combination of features resembling systemic lupus erythematosus (SLE), cutaneous systemic sclerosis, dermatomyositis, and rheumatoid arthritis.^[2] Common clinical manifestations of MCTD are Raynaud's phenomenon, arthralgia, swollen joints, esophageal dysfunction, muscle weakness, and fingers sausage-like appearance along with the presence of anti-ribonucleoprotein (RNP) antibodies. During the progression of the disease, pulmonary, renal, cardiac, gastrointestinal, and central nervous system manifestations may evolve.^[3] High titers of anti-U1 RNP antibodies (anti-U1 RNP) are characteristic of MCTD.^[4] Interstitial lung disease and pulmonary arterial hypertension can evolve during the long course of disease and may influence disease prognosis.^[5] Autoimmune hepatitis (AIH) is an immune mediated inflammation of the liver of unknown etiology, which leads to progressive inflammation and fibrosis in the liver.^[6]

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CASE REPORT

A 30-year-old female, who was previously normal without any other systemic illness, presented with subacute onset of weakness in all four limbs for the past 1-month duration. This was associated with pain in limbs and weakness in neck flexion. There was no history of sensory symptoms, no cramps of muscle, no fatigability, and no diurnal variation.

Past history

There was a history of jaundice, which was diagnosed as AIH and it was being treated by Gastroenterologist. She was on steroid therapy. There was a history of taking Prednisolone 60 mg once daily started dose, then gradually tapered and now she was on maintenance dose of 20 mg/day. She had abnormal liver function test and antinuclear antibody (ANA) was positive. On treatment with steroids, she developed weakness in limbs along with on/off joint pain and Raynaud's phenomenon for the past 6 months.

On examination

General examination showed normal peripheral pulse, temperature, blood pressure, and oxygen saturation. There was mild skin tightening around the lower eyelids [Figure 1]. Raynaud's phenomenon was also noted during examination [Figure 2]. There was Grade 3 power in proximal upper limb and Grade 4 (-) power in distal lower limb. Deep tendon reflexes were elicited and plantar reflex was normal (flexor). There was no cranial nerve involvement, no cognitive issue and no wasting or fasciculation seen.

Patient was further evaluated, routine blood counts were normal, and fasting sugars, glycated hemoglobin (HBA1C level), and thyroid function tests were normal. Specific tests such as serum creatine phosphokinase (S. CPK) were elevated (3000 U/L), lactate dehydrogenase (LDH) was raised (1597 U/L), and ANA profile showed high titers positive anti U-1 RNP antibodies. In view of the background history of AIH and now with features of inflammatory myositis, Raynaud's phenomenon, and skin thickening with high titer positive U1 RNP antibodies, a diagnosis of MCTD was made. After that, patient was referred to rheumatologist for further management.

Laboratory findings

Table 1 summarizes the key laboratory findings.

DISCUSSION

MCTD is a specific condition in which two or more connective tissue disorders are associated with presence of a specific Uridine rich U1 RNP antibody.^[7] Connective tissue disorders can present with a plethora of signs and symptoms.



Figure 1: Facial skin tightening.

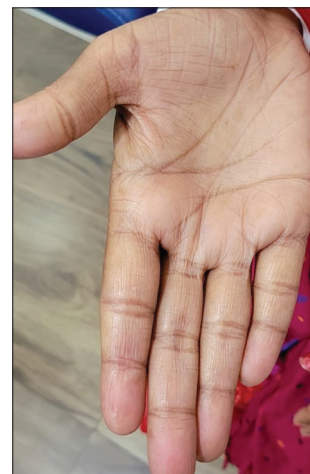


Figure 2: Mild Raynaud's phenomenon.

Diagnosis of these disorders is made based on specific criteria. Major connective tissue diseases are SLE, systemic sclerosis, rheumatoid arthritis, polymyositis, dermatomyositis, and primary Sjogren's syndrome. Clinical features of MCTD may overlap between these diseases.

According to the Alarcon-Segovia criteria for diagnosis of MCTD, there are five clinical symptoms – (swollen hands, synovitis, myositis [biologically or histologically proven], Raynaud's phenomenon, acrosclerosis with or without proximal systemic sclerosis), and anti-RNP positivity. The presence of at least three out of five clinical symptoms and anti-RNP positivity is required for diagnosis of MCTD.

There are only few cases of MCTD, who developed AIH, were described previously. In one report from Korea, a 40-year-old female patient suffering from overlap syndrome of MCTD and Sjogren's syndrome was admitted to hospital with severe

Table 1: Laboratory findings.

Serum bilirubin	0.83 mg/dL
Total protein	6.0 g/dL
Serum albumin	2.6 g/dL
Serum globulin	3.4 g/dL
Serum alkaline phosphatase	55 U/L
SGOT	273 U/L
SGPT	259 U/L
LDH	1597 U/L
PT	11.1 s
INR	0.85
Serum CPK	3000 U/L
Anti U-1 RNP antibody	Positive (+++)

SGPT: Serum glutamic-pyruvic transaminase, SGOT: Serum glutamic-oxaloacetic transaminase, LDH: Lactate dehydrogenase, PT: Prothrombin time, INR: International normalized ratio, RNP: Ribonucleoprotein, CPK: Creatine phosphokinase

cholestasis AIH and acute liver failure.^[8] In another report, a 16-year-old female with MCTD, developed AIH after 1 year of disease onset.^[9] In another report, one 27-year-old female with MCTD was associated with chronic hepatitis and thyroiditis.^[10] One other report, in which an 11-year-old boy admitted to hospital with hepatitis along with symptoms and signs of MCTD, who was diagnosed with MCTD with AIH after further investigations.^[11]

We present a case of 30-year-old woman, who presented with features of myopathy along with AIH. As she was on steroid therapy for AIH, possibility of steroid induced or connective tissue disease related myopathy was considered as there was myopathy along with skin changes and Raynaud's phenomenon. Hence, MCTD was considered provisionally. On further evaluation, S. CPK was raised (3000 U/L) with raised LDH (1597 U/L) and ANA profile showed high titers positive anti U-1 RNP antibodies. These all favor the diagnosis of MCTD and diagnosis was made based on Alarcon-Segovia criteria with raised titer of anti U-1 RNP antibody and three out of five clinical criteria (myositis as proven by elevated CPK level; acrosclerosis; and Raynaud's phenomenon).

AIH was the first presenting manifestation and other signs and symptoms of MCTD appeared later. In other previous reports, all the patients were either previously diagnosed case of MCTD, who develops AIH later, or presented with symptom and signs of MCTD along with autoimmune hepatitis.

CONCLUSION

AIH as an initial presentation of MCTD is very rare. In this case, AIH and myopathy were the presenting manifestations of MCTD.

Author contributions

Both authors were fully involved in writing the article.

Declaration of patient consent

Patient's consent not required as patients identity is not disclosed or compromised.

Financial support and sponsorship

Nil.

Conflicts of interest

There are no conflicts of interest.

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How to cite this article: Yadav PK, Maurya SK. Autoimmune hepatitis and myositis as presenting manifestation of mixed connective tissue disease – A case report. *Med India* 2023;2:14.