Ref: Ro J Rheumatol. 2024;33(1)
DOI: 10.37897/RJR.2024.1.10

Case report: Multiple autoimmune syndrome

Ibrahim Abdulghafoor Ibrahim Agha[1], Safaa Jassim Mohammed[2], Yusur Farhan Bdaiwi[2]

[1] Department of Clinical- Hematology, "Ibn Sena" Teaching Hospital, Nineveh Health Department, Ministry of Health, Nineveh, Iraq
[2]Department of Patho-hematology, "Al-Hadbaa" Blood & BMT Hospital, Nineveh Health Department, Ministry of Health, Nineveh, Iraq

ABSTRACT

This is a case of multiple autoimmune syndrome with the co-occurrence of vitiligo, pernicious anemia, celiac disease and autoimmune hepatitis is extremely rare. We are presenting a case is a 40-year-old woman with autoimmune hepatitis who is suffering from poor appetite, weight loss and skin lesions. Laboratory investigation shows hypochromic microcytic anemia, B12, and iron deficiency. The testing for parietal cell antibody was positive so pernicious anemia was diagnosed with positive Tissue transglutaminase antibody IgA so the diagnosis of celiac disease was confirmed.

Keywords: pernicious anemia, autoimmune hepatitis, celiac disease and vitiligo

INTRODUCTION

Multiple autoimmune syndrome (MAS) is a status in which patients have at least three distinct autoimmune diseases. About 25% of patients with autoimmune diseases have a tendency to develop another autoimmune condition [1].

MAS is classified into three groups, that each depend to specific diseases that tend to occur with one another:

Type 1 "MAS": includes myasthenia gravis, thymoma, polymyositis, and giant cell myocarditis.

Type 2 "MAS": includes Sjögren's syndrome, rheumatoid arthritis, primary biliary cirrhosis, scleroderma, and autoimmune thyroid disease.

Type 3 "MAS": includes autoimmune thyroid disease, myasthenia gravis and/or thymoma, Sjögren's syndrome, pernicious anemia, idiopathic thrombopenic purpura, Addison's disease, type 1 diabetes mellitus, vitiligo, autoimmune hemolytic anemia, systemic lupus erythematosus, and dermatitis herpetiformis [1].

The pathologic mechanism responsible for the MAS is still not understood because of the fact that many autoimmune diseases share susceptibility genes which suggests a genetic cause. The phenomenon of familial autoimmunity and the juxtaposition of chromosomic regions associated with MAS (for example, the 6p21.3 region) support that hypothesis. Even so, it is necessary to consider that genetic susceptibility to MAS can occur not only from the presence of risk alleles, but may be from the absence of protective ones. Many studies and genetic mapping have suggested a relation between many of HLA alleles on classes I and II and "MAS" [2].

CASE REPORT

40-years-old female present with pallor, fatigue and poor appetite and weight loss of 8 lb for two months. Her blood tests show: low hemoglobin (Hb) 7.9 g/dl (normal value12-15 g/dl), (MCV) 56 μm^3 (normal value80-98 μm^3) and (MCH) 15.4 pg (normal value 26.4-32.3) with normal total white blood cell 8.6× 109/L (normal value 4-10×109/L) and normal neutrophil count 5×109/L (normal value2-7×109/L), normal lymphocyte count 2.8×109/L (normal value 1-3× 109/L) but had high platelet count 517×109/L (normal value 150-410×109/L) and ESR 67 mm/hr (normal value≤ 12 mm/hr). Liver enzymes was elevated (AST) 86 U/L (normal value 5-34U/L), (ALT) 83U/L (normal value < 44U/L), total serum bilirubin 20 umol/L(normal value 3-21 umol/L), direct bilirubin 8umol/L (normal value 0-9 umol/L) and indirect bilirubin 12 umol/L

Corresponding author:
Safaa Jassim Mohammed
E-mail: Safaa.jasim.mohammed@gmail.com

Article History:
Received: 10 March 2024
Accepted: 29 March 2024

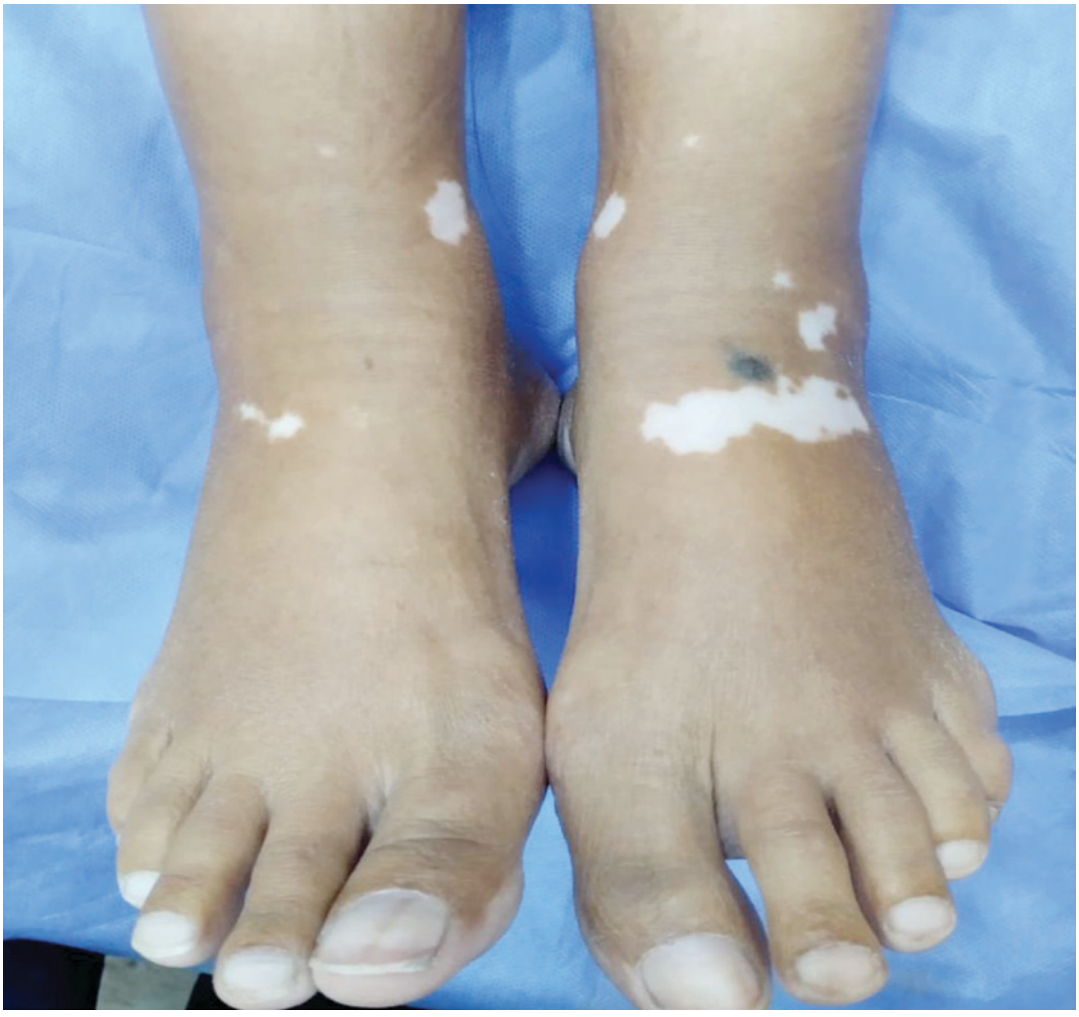

FIGURE 1. Depigmented patch with leukotrichia foot of patient

(normal value 0-12 umol/L), smooth muscle antibodies (ASMA) was positive and live/kidney microsome (LKM) type I antibodies was positive 11.9 U/mL (positive ≥ 10 and negative < 10 U/Ml). Hepatitis A, B and C virus screen was negative. The urea, creatinine and electrolyte was normal. Thyroid function test was normal. Antinuclear antibodies (ANA) were 0.3 (negative), double stranded DNA antibodies 1.9 IU/Ml (negative <20, positive ≥20), antimitochndrial antidodies (AMA) 1.3 IU/ml (negative <10, positive ≥10) all was negative. Tissue transglutaminase antibody IgA was positive >200 U/ml (negative <10, positive ≥10). Intrinsic factor antibody (IFA) was negative 1.8 U/ml (negative <6, positive ≥6), while partial cell antibody (PCA) was positive >100 U/ml (negative <10, positive ≥10). Serum B12 180 pg/ml (normal value 205-876 pg/ml). Blood film show hypochromic microcytic red blood cell due to iron deficiency anemia, white blood cell normal count and differentia, no immature cell is seen, and platelet show increase in film.

So according to history, physical examination and investigation patient had vitiligo, pernicious anemia, celiac disease and autoimmune hepatitis.

She started to take oral iron and vitamin B12 supplementation, so hemoglobin return to normal from 7.9 g/dl before treatment to 13.5 g/dl (normal value12-15 g/dl) after treatment.

DISCUSSION

Autoimmune disease is the result of the immune system incidentally attacking of the body in place of saving it. When more than one autoimmune condition occurs gathered, this is defined as “polyautoimmunity”. When three or more autoimmune conditions occur to gather, this is known as multiple autoimmune syndrome (MAS).

Researchers suggested that environmental factors and genetic background are involved. The combination of multiple autoimmune disease comprising autoimmune hepatitis, pernicious anemia, celiac disease and vitiligo is rare.

The American Association for the Study of Liver Diseases (AASLD) advise that patients with a new diagnosis of autoimmune hepatitis undergo serologic testing to rule out thyroid disease and celiac disease [3].

Riaz A et al. case report study show resented a case of a 70-year-old woman with AIH who s suffering from anemia which was investigated and pernicious anemia was diagnosed [4].

TABLE 1. Show the laboratory values of the patient

	Result	Normal value
Hemoglobin	7.9 g/dl	12-15 g/dl
MCV	56 μm^3	range 80-98 μm^3
MCH	15.4 pg	26.4- 32.3
total white blood	cell 8.6 $\times 10^9$/L	4-10 $\times 10^9$/L
neutrophil count	5 $\times 10^9$/L	2-7 $\times 10^9$/L
lymphocyte count	2.8 $\times 10^9$/L	1-3 $\times 10^9$/L
platelet count	517 $\times 10^9$/L	150-410 $\times 10^9$/L
ESR	67 mm/hr	≤ 12 mm/hr
AST	86 U/L	5-34U/L
ALT	83U/L	< 44U/L
total serum bilirubin	20 umol/L	3-21 umol/L
direct bilirubin	8umol/L	0-9 umol/L
indirect bilirubin	12 umol/L	0-12 umol/L
smooth muscle antibodies (ASMA)	positive	Negative
live/kidney microsome (LKM) type I antibodies	11.9 U/mL	positive ≥ 10 and Negative < 10 U/Ml
TSH	2.5 ulU/ml	0.25-5 ulU/ml
Antinuclear antibodies (ANA)	0.3	Negative <1.0 Equivocal 1.0-1.2 Positive >1.2
double stranded DNA antibodies	1.9 IU/Ml	negative <20 positive ≥20
antimitochndrial antidodies (AMA)	1.3 IU/ml	Negative <10 positive ≥10
Tissue transglutaminase antibody IgA	>200 U/ml	Negative <10 positive ≥10
Intrinsic factor antibody (IFA)	1.8 U/ml	Negative <6 positive ≥6
partial cell antibody (PCA)	>100 U/ml	Negative <10 positive ≥10)
Serum B12	180 pg/ml	205-876 pg/ml

A retrospective study by Teufel et al. showed some of the common associations include autoimmune thyroiditis, vitiligo, rheumatoid arthritis, celiac disease, systemic lupus erythematosus, type 1 diabetes, multiple sclerosis, polymyalgia rheumatica, and urticarial [5].

Villalta et al. study showed a high incidence of celiac disease in patients with autoimmune hepatitis [6].

Autoimmune hepatitis is occurred with a wide variety of other disorders including of other systems that may be found at disease onset or may develop during the course of the active liver disease. Most of these disorders are immunologic in origin. Patients may present with symptoms of the following hematologic disorders: Hypersplenism (usually attributable to cirrhosis and portal hypertension), Autoimmune hemolytic anemia, Coombs-positive hemolytic anemia, Pernicious anemia and ITP and Gastrointestinal disorders associated with autoimmune hepatitis includes inflammatory bowel disease, which is seen in 6% of cases. The presence of ulcerative colitis in patients with autoimmune hepatitis should prompt performance of magnetic resonance cholangiopancreatography (MRCP) to exclude a diagnosis of primary sclerosing cholangitis (PSC). [7].

CONCLUSION

Our patient exemplifies a rare association of multiple autoimmune syndromes comprising autoimmune hepatitis, pernicious anemia, celiac disease and vitiligo.

Conflict of interest: none declared
Financial support: none declared
Disclosure: none

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