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JCIMCR OPEN ACCESS Journal of Clinical Images and Medical Case Reports

ISSN 2766-7820

Case Report

Open Access, Volume 2

A common disease masked by complex clinical manifestations: A case report of hypothyroidism

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Received: Apr 20, 2021

Accepted: May 21, 2021

Published: May 25, 2021

Archived: www.jcimcr.org

Core tip

Hypothyroidism is a common problem in the elderly and can affect most major organs. However, because most symptoms of hypothyroidism are non-specific, it is often overlooked, especially in complex and severe cases. We herein present a rare case of hypothyroidism in an elderly patient with multiple-organ impairment, hyperlipidaemia, and drug intolerance. We also present photographs of the patient's physical signs to raise physicians' awareness of this common but often overlooked condition.

Abstract

Background: Hypothyroidism is a common disease in elderly people. Although hypothyroidism can theoretically have clinical implications related to nearly all major organs, it is often excluded from diagnostic algorithms for elderly patients with multi-system disease because its symptoms are non-specific.

Case summary: A 61-year-old woman presented with dizziness, fatigue, facial swelling, dry cracked skin, and myalgia. She had a 2-year history of impairment of multiple organs and multiple adverse drug events. Blood tests showed abnormal liver and kidney function, an elevated creatine kinase concentration, and hyperlipidaemia. During the last 2 years, she had experienced multiple severe adverse drug events, including eosinophilia and systemic symptoms caused by carbamazepine, acute kidney impairment related to ceftriaxone and cefdinir, exfoliative dermatitis caused by ceftazidime, and intolerance to statins. After visiting several large hospitals, she was finally diagnosed in our clinic with hypothyroidism. At the time of diagnosis, she was extremely ill and unable to walk independently. After taking levothyroxine, all of her symptoms and signs completely resolved.

Conclusion: Hypothyroidism might be overlooked in elderly patients, especially those with complex and severe clinical conditions.

Keywords: Aged; adverse drug events; multiple organ dysfunction; hypothyroidism.

Introduction

Hypothyroidism is a common problem in elderly people. The prevalence of overt hypothyroidism ranges from 1% to 10%, and that of subclinical hypothyroidism ranges from 1% to 15% [1].

Although hypothyroidism can theoretically have clinical implications related to nearly all major organs [2], it is often excluded from diagnostic algorithms for elderly patients with multi-system disease in clinical practice. This is because the symptoms of hypothyroidism are non-specific, especially in elderly patients who present with fewer and less classic signs and symptoms than younger individuals [3]. In addition, a variety of metabolic abnormalities can occur in patients with hypothyroidism, including impaired elimination and transformation of medications, which is related to drug safety. In view of this, we herein report a case of hypothyroidism in an elderly patient with multiple-organ impairment, hyperlipidaemia, and drug intolerance to raise clinicians' awareness of this common but often overlooked condition.

Case presentation

Chief complaints

A 61-year-old Chinese woman visited our outpatient clinic in July 2019 for the investigation of a 2-year history of discomfort and multiple adverse drug events.

History of present illness

The patient entered the room in a wheelchair and had dizziness, fatigue, facial distention (most obvious around the eyes), blurry vision, an inflexible tongue, a low voice, and myalgia and tightness in all four extremities that affected her ability to walk and clench.

The patient had a history of multiple adverse drug events. She had no identified chronic or familial diseases. Before 2017, she had had no history of allergic reactions to any food or medication. On March 4, 2017, she developed a drug reaction with eosinophilia and systemic symptoms after taking carbamazepine for epilepsy because of transient loss of consciousness. On March 16, 2017, she developed acute renal impairment after using cefdinir and ceftriaxone for fever, with an increase in her blood creatinine concentration from 56.3 μmol/L to 314.8 μmol/L when the skin was nearly healed and liver function had recovered. In August 2017, she developed exfoliative dermatitis after using ceftazidime for 5 days because of pneumonia. In February 2019, she was started on Lipitor (atorvastatin) for hyperlipidaemia. She was then diagnosed with statin intolerance due to impairment of multiple organs (including the liver, kidneys, and muscles) on April 14, 2019, and the impairment persisted for about 3 months after the cessation of Lipitor. The results of the patient's blood investigations are shown in Table 1.

Table 1: Results of blood testing during past 2 years

Date	WBC	Eos	ALT	AST	GGT	CR	CK	TC	TG	HDL	LDL
	10^9/L	10^9/L	U/L	U/L	U/L	μmol/L	U/L	mmol/L	mmol/L	mmol/L	Mmol/L
2017											
Mar 4	16.5	2.0	347	218	238	56.3	59				
Mar 7	15.6	1.91	629	221	401	51.9	30	3.70	1.23	0.84	1.89
Mar 10	14.4	1.56	216	72	272	60.4	19				
Mar 16	9.8	2.01	64	59	202	341.8	17				
Mar 23	9.5	1.40	38	28	162	204	20				
Mar 27	9.6	3.29	20	19	95	166	27				
Apr 4	10.4	0.09	33	28	81	107	65				
Aug 16	8.5	0.94	134	62	43	97		5.24	2.16	1.34	3.22
Aug 27	9.7	0.39	44	29	73	90		5.47	2.98	1.37	2.95
2019											
Feb 11			25	48	13	106		9.9	1.19	3.0	5.2
Mar 9								8.8	2.17	1.9	5.3
Apr 14			238	241	52	130	3495	5.4	1.33	1.8	3.3
May 3			101	150	41	128	3682				
Jun 29	3.7	0.12	128	184	39	154	3186	7.1	3.1	1.1	4.7
Jul 9	4.6	0.13	98	152	55	142	2961	8.1	3.19	1.18	5.17
Dec 21			17	25	15	72	92	6	1.38	1.9	3.1

From March 4–10, 2017, the patient had a drug reaction with eosinophilia and systemic symptoms with impaired liver function after taking carbamazepine for 3 weeks. Acute kidney impairment developed after using cefdinir and ceftriaxone on March 16, 2017, when the skin was nearly healed and liver function had recovered. On February 11, 2019, she was started on Lipitor for hyperlipidaemia. Impaired liver and kidney function and elevated CK were found on April 14, 2019 and persisted for about 3 months after stopping Lipitor.

Abbreviations: WBC:White Blood Cell; Eos:Eosinophil; ALT: Alanine Aminotransferase; AST:Aspartate Aminotransferase; GGT: Γ-Glutamyl Aminotransferase; CR: Creatinine; CK: Creatine Kinase; TC: Total Cholesterol; TG: Triglyceride; HDL: High-Density Lipoprotein; LDL: Low-Density Lipoprotein.

History of past illness

The patient had no illnesses in her previous medical history.

Physical examination

The main findings of the physical examination were dry and coarse skin, puffy eyelids, and markedly hard enlarged muscles in the lower extremities with no joint tenderness. Photographs of the patient's face, hands, and lower limbs are shown in Figure 1a–d. Hypothyroidism was suspected based on the clinical signs.

Laboratory examinations

Laboratory tests revealed a thyroid-stimulating hormone level of >150,000 IU/mL, free triiodothyronine level of <0.2 pg/mL, anti-thyroperoxidase antibody level of 87 IU/mL, and anti-thyroglobulin level of 1,663 IU/mL.

Imaging examinations

Thyroid sonography revealed the presence of a diffuse hypoechogenic pattern.

Final diagnosis

The final diagnosis was hypothyroidism.

Treatment

In July 2019, the patient was started on levothyroxine at 25 μg/day. The dose was gradually increased to 100 μg/75 μg every other day. No lipid-lowering drugs were given.

Outcome and follow-up

Six months later, nearly all of the patient's symptoms and signs had resolved, and she was able to perform some manual farm work such as planting vegetables. Her skin condition had improved substantially (Figure 1e–h). All biochemical indicators were within normal ranges (Table 1).

Figure 1: Changes in the patient's skin after treatment of her hypothyroidism.
a–d) Photographs taken before the patient started using levothyroxine. The skin was dry and rough and exhibited pigmentation and swelling. e–h) Photographs taken after the patient had taken levothyroxine for 6 months. The skin swelling had subsided and the skin had become delicate and glossy.

Discussion

We have herein reported a case involving an elderly patient with hypothyroidism who had experienced successive discomfort, multiple organ dysfunction, and multiple adverse drug events for more than 2 years. After correcting the hypothyroidism, all of these abnormalities completely resolved.

Although hypothyroidism is common in elderly people and can theoretically affect nearly all organs, its non-specific symptoms often lead to a missed diagnosis, especially in complicated cases [3]. Non-endocrinologists' unfamiliarity with hypothyroidism is also related to missed diagnosis. Therefore, we have shared this complicated case of multiple organ impairment and adverse drug events and have presented photographs of the patient's physical signs to raise physicians' awareness of this common but often overlooked condition.

This patient experienced multiple adverse drug events. Hypothyroidism may be associated with drug intolerance by affecting the elimination and transformation of medications. In one study, 30.2% of patients with statin intolerance had a history of hypothyroidism [4], and correction of hypothyroidism may improve statin tolerability in some patients [5]. Whether the eosinophilia and systemic symptoms caused by carbamazepine and the exfoliative dermatitis caused by ceftazidime in our patient were related to hypothyroidism remains unclear. However, several different findings regarding the causality or correlation between hypothyroidism and allergy have been reported [6-8]. In summary, greater attention to drug safety is needed in patients with hypothyroidism, both in clinical practice and in pharmaceutical research.

Conclusion

Hypothyroidism can have multiple non-specific clinical manifestations and may be related to drug allergy and drug intolerance. Hypothyroidism should be considered in the diagnostic algorithm of elderly patients presenting with discomfort, multiple organ impairment, and intolerance to statins or other medications.

Consent for publication: The patient consented to the publication of this case report and photographs.

References

1. Bensenor IM, Olmos RD, Lotufo PA. Hypothyroidism in the elderly: Diagnosis and management. Clin Interv Aging. 2012; 7: 97–111.
2. Chaker L, Bianco AC, Jonklaas J, and Peeters RP. Hypothyroidism. Lancet. 2017; 390: 1550–1562.
3. Carlé A, Pedersen IB, Knudsen N, Perrild H, Ovesen L, et al. Hypothyroid Symptoms Fail to Predict Thyroid Insufficiency in Old People: A Population-Based Case-Control Study. Am J Med. 2016; 129: 1082-1092.
4. Robison CD, Bair TL, Horne BD, McCubrey RO, Lappe DL, et al. Hypothyroidism as a risk factor for statin intolerance. J Clin Lipidol. 2014; 8: 401-407.
5. Saxon DR, Eckel RH. Statin Intolerance: A Literature Review and Management Strategies. Prog Cardiovasc Dis. 2016; 59: 153-164.
6. Cho YT, Yang CW, Chu CY. Drug Reaction with Eosinophilia and Systemic Symptoms (DRESS): An Interplay among Drugs, Viruses, and Immune System. Int J Mol Sci. 2017; 18: 1243.
7. Degirmenci PB, Kirmaz C, Oz D, Bilgir F, Ozmen B, et al. Allergic rhinitis and its relationship with autoimmune thyroid diseases. Am J Rhinol Allergy. 2015; 29: 257-61.
8. Kolkhir P, Metz M, Altrichter S, Maurer M. Comorbidity of chronic spontaneous urticaria and autoimmune thyroid diseases: A systematic review. Allergy. 2017; 72: 1440-1460.