Case Report

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Autoimmune Polyglandular Syndrome Presenting with Jaundice and Thrombocytopenia

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Key Words
Autoimmune thyroiditis · Pernicious anaemia · Hypergastrinaemia · Autoimmune polyglandular syndrome

Abstract
Objective: To report an uncommon presentation of a rare case of autoimmune polyglandular syndrome type IIIb in an elderly woman. ***Clinical Presentation and Intervention:*** A 62-year-old woman presented with anaemic symptoms and jaundice. Blood tests showed macrocytic anaemia due to vitamin B_{12} deficiency with Coombs negative haemolysis. A thyroid function test was consistent with hypothyroidism. Autoimmune antibody assays were positive for anti-parietal cell, anti-intrinsic factor and anti-thyroid peroxidase antibodies. A final diagnosis of autoimmune thyroiditis with pernicious anaemia, which constituted autoimmune polyglandular syndrome type IIIb, was made and the patient was treated with L-thyroxine, vitamin B_{12} injection and a blood transfusion. She was discharged uneventfully after a week of hospitalization. ***Conclusion:*** This case showed that the presence of one autoimmune endocrine disease should prompt clinicians to look for other coexisting autoimmune diseases which may be asymptomatic despite positive autoantibodies.

Introduction

Autoimmune polyglandular syndrome (APS) is a rare form of autoimmune disorder involving at least two glandular autoimmune-mediated diseases [1]. It is a combination of endocrine and non-endocrine autoimmune disorders [2]. In APS type III, there is an association between autoimmune thyroid disorders and other autoimmune diseases with an absence of Addison's disease and/or hypoparathyroidism [2]. The exact prevalence is unknown. APS type III can be further classified into 4 subcategories, i.e. a through d. The presence of autoimmune thyroiditis is a prerequisite for all categories as shown in table 1 [2, 3]. Here we report a rare case of APS type IIIb in an elderly woman.

Case Report

A 62-year-old hypertensive woman presented with symptomatic anaemia for 3 weeks, associated with jaundice and lethargy. She had a history of gallstones and underwent a cholecystectomy at the age of 44. Apart from a history of colorectal carcinoma in her older sister, there was no history of any chronic illness in the family. Clinically, she was pale and jaundiced. She had coarse, dry hair and dry skin. There were no other abnormal findings.

Her haemoglobin was 5.3 g/dl, her mean cell volume was 108 fl, her white cell count was 4.5×10^9/l, and her platelet count was 77×10^9/l. A full blood analysis showed leucoerythroblastic fea-

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Table 1. APS type III and subcategories

Autoimmune thyroid disease			
APS IIIa	APS IIIb	APS IIIc	APS IIId
Hashimoto's thyroiditis Idiopathic myo-oedema Asymptomatic thyroiditis	Endocrine exophthalmus	Endocrine exophthalmus	Grave's disease
Endocrine diseases Type 1 diabetes mellitus Premature ovarian failure Lymphocytic hypophysitis Neurohypophysitis	Gastrointestinal apparatus diseases Atrophic gastritis Pernicious anaemia Coeliac disease Chronic inflammatory bowel disease Autoimmune hepatitis Primary biliary cirrhosis Sclerosing cholangitis	Skin/haemopoietic system/ nervous system diseases Vitiligo Alopecia Autoimmune thrombocytopenia Autoimmune haemolytic anaemia Anti-phospholipid syndrome Myasthenia gravis Stiff man syndrome Multiple sclerosis	Collagen diseases/ vasculitis Systemic lupus erythematosus Mixed connectivitis Rheumatoid arthritis Reactive arthritis Scleroderma Sjörgen's syndrome Vasculitis

tures with polychromasia and ovalostomatocytosis. The total serum bilirubin level was elevated at 45 μmol/l, with predominantly unconjugated forms and normal liver enzymes. Serum lactate dehydrogenase was elevated at 3,778 U/l but Coombs tests were negative. Her bone marrow aspirates and trephine biopsy showed severe megaloblastic anaemia without excess blast cells. Her thyroid profile revealed a free T4 level of 8.48 pmol/l (normal range 9.0–24) and the thyroid-stimulating hormone level was 83.96 IU/ml (normal range 0.3–5). The serum vitamin B_{12} concentration was less than 44 pmol/l (normal range 145–637), with normal serum folate levels. The morning serum cortisol level was 445 nmol/l and after 250 μg Synacthen the cortisol level increased to 798 nmol/l at 30 min, representing an adequate response.

Her oesophagoduodenoscopy showed atrophic gastritis at the antrum. Both of her anti-gastric parietal cell and anti-intrinsic factor antibodies were positive. The anti-thyroid peroxidase level was more than 1,000 IU/ml. Her fasting serum gastrin level was more than 1,000 pg/ml (normal range <101). Thus, she had both pernicious anaemia and Hashimoto's thyroiditis which led to the diagnosis of APS type IIIb.

She was treated with L-thyroxine, a vitamin B_{12} injection and a blood transfusion. Her white cell and platelet counts subsequently improved. She was discharged uneventfully after a week of hospitalization. During her follow-up, the L-thyroxine dose was adjusted to the optimal dose (125 μg/day) and her thyroid profile normalized 3 months later.

Discussion

Our patient fulfilled the criteria for APS type IIIb, i.e. autoimmune thyroiditis due to Hashimoto's thyroiditis and pernicious anaemia. It occurs more frequently among middle-aged women [4, 5]. In its early stages, destruction of the thyroid gland gives rise to transient hyperthyroidism referred to as Hashitoxicosis [5]. However, once the process is complete, it leads to hypothyroidism as was seen in our patient.

Pernicious anaemia is a sequela of autoimmune chronic atrophic gastritis that involves the fundic glands and is characterized by severe gland atrophy [6]. Almost 90% of patients have antibodies directed against the parietal cells [6]. As a result, pernicious anaemia leads to vitamin B_{12} malabsorption and subsequently B_{12} deficiency. This patient had both anti-gastric parietal cell and anti-intrinsic factor antibodies. She also had hypergastrinaemia which is a known complication of long-standing achlorrhydria due to a lack of acid secretion by the parietal cells of the stomach. The pronounced hypergastrinaemia (>1,000 pg/ml) likely leads to subsequent hyperplasia of gastric enterochromaffin-like cells which predisposes to gastric malignancy [7].

The treatment of APS depends on the organ involved and the accompanying hormonal deficiencies. This patient was treated with L-thyroxine replacement as well as intramuscular vitamin B_{12} injection which she will require as lifelong therapy. However, it is important to highlight that autoimmune adrenalitis with accompanying adrenal insufficiency must be excluded before commencement of treatment with L-thyroxine.

APS is often preceded by an asymptomatic latency period of months or years following positive detection of

antibodies [8]. It is characterized by the presence of circulating disease-associated antibodies which are useful markers for future organ failure [8]. Thus, regular and long-term glandular function monitoring seems necessary. This is important because early recognition and replacement therapy can be life saving, particularly when the glandular failure involves the adrenal glands. Although the gland involvement in APS type III is usually limited to 2 or 3 glands, extensive involvement of up to 7 autoimmune diseases with extensive circulating antibodies including anti-glutamic acid decarboxylase antibodies and islet cell antibodies has been reported [9].

Hence, long-term follow-up and screening for other possible glandular involvements is necessary for our patient. Surveillance monitoring for gastric carcinoid tumours, which have been reported in 3–5% of patients with hyperplasia of gastric enterochromaffin-like cells, should also be performed [7]. Furthermore, pernicious anaemia is also associated with an increased risk of gastric cancer [10].

Conclusion

This case showed that the presence of one autoimmune endocrine disease should prompt clinicians to look for other coexisting autoimmune diseases which may be asymptomatic despite positive autoantibodies. This is especially important in patients with autoimmune hypothyroidism and undetected adrenal insufficiency because corticosteroid replacement before thyroxine therapy is mandatory to avoid an adrenal crisis.

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