A case report of type 1 diabetes mellitus and factitious hypoglycemia in a patient with Munchausen Syndrome

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SUMMARY

Munchausen syndrome is rarely considered as a first diagnosis, especially in a type 1 diabetic patient presenting with hyperinsulinemic hypoglycemia. The diagnosis should be considered when episodes of hypoglycemia are persistent, and tests suggest a possible exogenous source of insulin. We report a case of a 26-year-old man with multiple hypoglycemic episodes and a long known diagnosis of diabetes type 1 who was referred to our institution after multiple in and out patient consultations in other institutions. He arrived with persistent hypoglycemia, even after withdrawal of insulin therapy on medical record, but persistent self-administration and misuse, without health care professional knowledge, of insulin therapy. He was diagnosed with factitious hypoglycemia after psychiatric evaluation. The patient improved with psychotherapy and family support as well as strict vigilance of insulin administration.

KEY WORDS

Diabetes Mellitus, Type 1; Factitious Disorders; Hypoglycemia; Munchausen Syndrome

RESUMEN

Hipoglucemia facticia: el caso de un paciente con diabetes mellitus tipo 1 y síndrome de Munchausen

El síndrome de Munchausen rara vez es considerado como primer diagnóstico, especialmente en pacientes diabéticos tipo 1 con cuadro de hipoglicemia hiperinsulinémica. Debe pensarse en

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este diagnóstico cuando los episodios de hipoglicemia sean persistentes y los exámenes paraclínicos sugieran una fuente exógena de insulina. El siguiente es un reporte de caso de un paciente masculino de 26 años con múltiples episodios de hipoglicemia y diagnóstico conocido de diabetes mellitus tipo 1, quien fue referido a nuestro hospital universitario después de haber consultado en varias ocasiones y haber sido hospitalizado y dado de alta en otras instituciones. Ingresa por múltiples episodios de hipoglicemias, y que incluso al retirar las insulinas por orden médica, persistían los síntomas. Se encontró auto-administración de uso de insulinas sin el conocimiento de los profesionales de la salud, llegando al diagnóstico de hipoglicemia facticia después de valoración por psiquiatría. El paciente presentó mejoría con psicoterapia y apoyo familiar, además de vigilancia estricta de la administración de insulinas.

PALABRAS CLAVE

Diabetes Mellitus Tipo 1; Hipoglicemia; Síndrome de Munchausen; Trastornos Fingidos

INTRODUCTION

Hyperinsulinemic hypoglycemia is characterized by inappropriate high levels of serum insulin (1). Hypoglycemia is confirmed by Whipple triad (2): symptoms or signs consistent with hypoglycemia, low plasma glucose concentration (lower than 55 mg/dL (3)), and resolution of those symptoms or signs after plasma glucose concentration is raised. The correlation is made with insulin, C-peptide and proinsulin (4). The most common etiology in adults is insulinoma, nesidioblastosis, misuse of diabetic treatment and factitous hypoglycaemia; a less frequent cause is type B insulin resistance syndrome, characterized by production of autoantibodies to the insulin receptor (6).

Factitious hypoglycemia is a self-induced hypoglycemia that results from the use of self-administered insulin or insulin secretagogues, and the purpose is to induce sickness. The frequency of occurrence is approximately the same as insulinoma, 4 cases per 1,000,000 in the general population. It can be initially mistaken for insulinoma, due to the coinciding symptoms as well as some biochemical markers (7, 8).

The case we are reporting is a 26-year old male diagnosed with type 1 diabetes mellitus and multiple episodes of hyperinsulinemic hypoglycemia due to a factitious disorder.

CASE PRESENTATION

Our patient was a 26-year-old non-obese male, with type 1 diabetes mellitus diagnosed at the age of 12, without microvascular complications. He was being treated ambulatory with degludec and aspart with persistent inadequate metabolic control and high glycemic variability with severe hypoglycemic episodes as the predominant feature, leading his treating physician to consider insulin pump therapy as an alternative treatment.

During the last year, he had required multiple hospitalizations due to severe episodes of hypoglycemia, the last one two weeks prior to being admitted to our institution. He was admitted to two different institutions where after failure in both hospitals to have an adequate control of the hypoglycemic episodes regardless of the progressive withdrawal of insulin therapy they decided to refer the patient to our institution where he was admitted on February 2018.

On admission, he completed 10 days without basal insulin administration and 8 days without prandial insulin therapy. In the first 24 hours of glycemic control in hospital care, a symptomatic hypoglycemia was documented and baseline exams shown in Table 1 were taken. It was notorious that no postprandial hyperglycemic episodes or ketosis were observed, which led to the decision of performing a fasting test. Adrenal insufficiency was ruled out since the patient didn't have any symptoms or signs related and additionally cortisol levels when hypoglycemia is present due to this illness are below 5 mcg/dL.

The test was done in the first 48 hours of admission. In the first 6 hours of the fasting test a 51mg/dL glucose level was detected and insulin, proinsulin, C-peptide, insulin antibodies were registered (Table 2). The patient was transferred for strict observation to the intermediate care unit due to the results which confirmed an exogenous hyperinsulinemic hypoglycemia.

On arrival to the intermediate care unit the patient was undressed and in his underwear a degludec and

an aspart pen where found, ratifying that the hypoglycemic episodes where due to an exogenous source of insulin. On psychiatric evaluation the patient was confronted with the evidence of surreptitious insulin administration, which he denied arguing that during hypoglycemic episodes he doesn't remember clearly his actions. When exploring his relationship with his family, the psychiatrist found a dependent relationship to his wife and a tendency to victimize himself due to his illness. This led to the diagnosis of factious disorder and Munchausen syndrome. Psychotherapy was initiated and was continued in an outpatient setting, a family support network was structured to administer insulin therapy.

DISCUSSION

Hypoglycemia is the main complication in type 1 diabetic patients and has significant clinical implications in morbidity and mortality (3). It is commonly associated with the patient´s glycemic variability and comorbidities and an inadequate titration of insulins leading physicians to consider sensor augmented insulin pump therapy as a better option for treatment. The patient in this case was seen in multiple health facilities and by multiple endocrinologists before confirming that the etiology of the hypoglycemia was the self-administration of insulins as part of a Munchausen syndrome.

Two other case reports were found in the last 10 years in adults with type 1 diabetes. A 24-year-old woman had recurrent hypoglycaemic episodes, but due to elevated insulin levels and detectable C-peptide, was first diagnosed as endogenous hyperinsulinemic hypoglycemia; on further investigation it was found that she had never been diagnosed with type 1 diabetes and with variability in her insulin levels they arrived at the diagnosis that she had factitious hypoglycemia (9). The other one was a 36-year-old male diagnosed with type 1 diabetes with an episode of hypoglycemia with low administration of insulin, during his hospital stay other causes were ruled out, and factitious hypoglycemia was diagnosed due to diminishing insulin levels and resolution of the hypoglycemia with strict supervision (10).

Patients with factitious disorders are driven by a motivation of assuming a sick role with a pattern of falsification, in the case of hypoglycemia, of physical signs and symptoms. This behavior is present even in the absence of external rewards (11). The information obtained from the patient will be accurate except with the omission of self-administered insulin, even under close supervision during hospitalization the patient can have irregular use of insulins. Patients are careful in hiding the puncture sites and needles used so even thorough search, that in some cases can raise ethical concerns, may not reveal any findings. It is important to differentiate from malingering where patients are driven by a conscious need to achieve external secondary gains (12).

In conclusion, the diagnosis of hyperinsulinemic hyperglycemia due to Munchausen syndrome is a diagnostic challenge due to the low incidence, estimated at 1 % for all factitious disorders (5), and is a very difficult diagnosis in an ambulatory setting. Furthermore, a low suspicion level from physicians in a disease where glycemic variability can be interpreted as a result of insulin therapy gives a factitious diagnosis a low probability (13).

Table 1. Baseline results

Glucose	**190 mg/dL**
HbA1C	10.67 %
TSH	3.96 UUI/mL
Thyroxin	0.95 ng/dL
Cortisol	8.86 MCG/DL
Complete blood count	White blood cell count: 9,300 cells/mcL, neutrophils 57.6 %, lymphocyte 27.30 % Hemoglobin: 12.50 gm/dL Hematocrit: 37.4 % Platelets: 387,000
Creatinine	0.59 mg/dL
Sodium	137 mEq/L
Potasium	4.4 mEq/L

Table 2. Fasting test results

Exam	**Levels**	**Method used for messuring**
Insulin	74.97 µ/dL	Chemiluminescence
Pro insulin	3 pmol/L	Immunoassay
C-peptide	0.176 ng/L	Chemiluminescence
Insulin antibodies	negative	
Glucose	51 mg/dL	

CONFLICTS OF INTEREST

The authors declare no conflicts of interest.

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