

Case Report

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Atypical Onset of Type 2 Diabetes Mellitus in a Young Male: Lessons for Early Detection in Primary Care

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ABSTRACT

Early diagnosis of Type 2 Diabetes Mellitus (T2DM) is critical to preventing long-term complications, but atypical presentations can make recognition challenging. This case report presents a 40-year-old male with subtle symptoms of fatigue and blurred vision, absent the hallmark signs of polyuria or polydipsia, leading to a delayed diagnosis of T2DM. Risk factors, including obesity, a sedentary lifestyle, and a positive family history, were key clues to identifying the disease. Through a multidisciplinary approach combining lifestyle modification and metformin therapy, the patient achieved significant improvements in glycemic control and overall health within three months. This report emphasizes the importance of maintaining a high index of suspicion in family medicine to identify atypical presentations and highlights how early intervention can dramatically alter patient outcomes.

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Introduction

Type 2 (T2DM) is a global health challenge, with an estimated prevalence of 10.5% among adults worldwide and increasing incidence in younger populations. Early detection in primary care is critical to mitigate complications such as cardiovascular disease, nephropathy, and retinopathy, which can manifest insidiously. Although classical symptoms are well-known, atypical presentations such as fatigue, blurred vision, or nonspecific malaise may delay diagnosis and management, particularly in younger individuals without overt metabolic syndrome. This case report highlights an atypical presentation of T2DM in a 40-year-old male, emphasizing the importance of vigilance in primary care settings, even in the absence of hallmark symptoms. It also discusses diagnostic challenges, risk stratification, and the role of lifestyle interventions alongside pharmacotherapy in achieving glycemic control.

Case Presentation

A 40-year-old Hispanic male presented to the primary care clinic with complaints of persistent fatigue and occasional blurred vision over the past three months. He denied symptoms of polyuria, polydipsia, nocturia, or unintentional weight loss. His medical history was unremarkable, and he was not on any medications. However, his family history was significant for type 2 diabetes in both parents. The patient reported a sedentary lifestyle, characterized by prolonged periods of desk work and infrequent physical activity, coupled with a diet high in processed carbohydrates.

Clinical Findings

On physical examination

- **BMI:** 32 kg/m² (obesity class I).
- **Blood Pressure:** 138/86 mmHg.
- No acanthosis nigricans, abdominal striae, or peripheral

neuropathy was observed.

- Cardiopulmonary and abdominal examinations were unremarkable.

Initial laboratory findings included

- **Fasting Blood Glucose:** 186 mg/dL (normal: <100 mg/dL).
- **HbA1c: 8.2% (diagnostic of diabetes: ≥6.5%).**
- **Lipid Profile:** LDL 134 mg/dL, HDL 35 mg/dL, triglycerides 190 mg/dL.
- **Renal Function Tests:** Normal (eGFR >90 mL/min/1.73 m²).
- **Urinalysis:** Negative for ketones and protein.

Discussion

This case illustrates the evolving spectrum of T2DM presentations, particularly in patients without classical symptoms. Fatigue and blurred vision are often overlooked as early indicators of hyperglycemia. However, these symptoms may reflect underlying metabolic dysfunction, including hyperosmolarity or microvascular changes in the retina.

Pathophysiology and Risk Factors

T2DM develops from a complex interplay of insulin resistance and progressive beta-cell dysfunction. In this patient, obesity and a sedentary lifestyle likely contributed to peripheral insulin resistance, while genetic predisposition may have accelerated pancreatic beta-cell decline. Early intervention is crucial, as the 'glucotoxicity' associated with sustained hyperglycemia further impairs insulin secretion and sensitivity, creating a vicious cycle [1-4].

Management

The cornerstone of T2DM management in primary care is early lifestyle intervention, including dietary modification, weight

loss, and increased physical activity. In this case, metformin was prescribed as first-line therapy for its glucose-lowering effects, weight-neutral profile, and established cardiovascular benefits. Lifestyle counseling focused on

- A Mediterranean-style diet to reduce processed carbohydrate intake.
- Moderate-intensity aerobic exercise (30 minutes/day, 5 days/week).

Regular follow-ups demonstrated significant improvement in metabolic parameters and overall health outcomes.

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