Dumping-Like Symptoms After Roux-En-Y Gastric Bypass: Case Report

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Case report

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Abstract

Background

Insulinomas are the most common neuroendocrine tumors of the pancreas, they are rarely suspected as a cause of hyperinsulinemia in morbidly obese patients because these patients have hyperinsulinemia as a result of insulin resistance. One of the complications of LRYGB is dumping syndrome. The pathophysiology of this hypoglycemia after LRYGB is not well understood, and many theories have been proposed such as excessive GLP-1, nesidioblastosis, and increased glucose effectiveness.

Case Presentation

A 37-year-old female patient with a past history of LRYGB 6 years ago, diagnosed as having late dumping syndrome because of complaints of perspiration, palpitations, hunger, fatigue, aggression, and confusion not related to eating. After the failure of dietician counseling to treat her symptoms, biochemical tests were performed to investigate other possible causes of her symptoms such as hyperinsulinemia, Oral Glucose Tolerance Test demonstrated deep hypoglycemia after 90 min. MRI and endoscopic ultrasound were performed and demonstrated the presence of a well differentiated endocrine tumor of approximately 1.8 cm in diameter in the body of the pancreas.

Conclusion

Bariatric surgeons should be aware of metabolic conditions including hypoglycemia, as a treatable cause of dumping-like symptoms.

Introduction

Bariatric operations are considered the best option for losing weight in morbidly obese patients. Laparoscopic Roux-en-Y gastric bypass (LRYGB) is one of these operations that is considered by a large percentage of bariatric surgeons' operation of choice for obesity surgery [1]. Complications after LRYGB include weight regain, anastomotic stenosis, marginal ulcer, internal hernia, and dumping syndrome [2]. Clinicians must know how to recognize and diagnose these problems and bariatric surgeons must know how to treat these complications.

Bariatric surgery is currently the most common cause of postoperative dumping syndrome. The pathophysiology of hypoglycemia after LRYGB is not well understood, and many theories have been proposed such as excessive GLP-1, nesidioblastosis, and increased glucose effectiveness [3].

Our purpose of reporting this case is to present those dumping-like symptoms after LRYGB and to identify that these symptoms are not always innocent and can easily be misdiagnosed as simple postoperative dumping syndrome.

Case Presentation

A 37-year-old female patient with a past history of LRYGB 6 years ago, weight loss of 42 kg (BMI 41 kg/m² to 25.6 kg/m²), with no past medical or psychological history, family history was non-contributory, and she was not on any medications.

She was referred by her family physician to the outpatient clinic at our center because of complaints of perspiration, palpitations, hunger, fatigue, aggression, and confusion not related to eating. She was diagnosed as having late dumping syndrome. After dietician counseling, she was educated to avoid the ingestion of high-sugar containing foods and high osmolar fluids, to decrease the size of the meals, and to increase the number of meals per day. After 3 months of follow-up, she continued to have these symptoms despite all the changes in her diet.

We referred her to an endocrinologist for further investigation. Biochemical tests were performed to investigate other possible causes of her symptoms such as hyperinsulinemia. She underwent an Oral Glucose Tolerance Test, which demonstrated deep hypoglycemia after 90 min.

MRI and endoscopic ultrasound were performed, and both demonstrated the presence of a well differentiated endocrine tumor of approximately 1.8 cm in diameter in the body of the pancreas without lympho-vascular or perineural invasion (Figure 1A and B, respectively). A laparoscopy was performed, and an insulinoma was identified and enucleated. After the operation, she had complete resolution of all her symptoms, and the follow-up period was 12 months.

Discussion And Conclusions

Insulinomas are the most common neuroendocrine tumors of the pancreas [4]. Most insulinomas are solitary, <2 cm in diameter, and are equally distributed within the head, body, and tail of the pancreas [5]. Their occurrence in patients with LRYGB may cause a delay in the proper diagnosis of the cause of the hypoglycemia as it may be mistaken as dumping syndrome.

In the presented case an insulinoma caused the unresponsiveness of the dietary management to ameliorate the patient symptoms. Oral Glucose Tolerance Test, which demonstrated deep hypoglycemia indicates that the patient had an autonomous source of hyperinsulinemia. Insulinoma is rarely suspected as a cause of hyperinsulinemia in morbidly obese patients because most of the time these patients have hyperinsulinemia as a result of insulin resistance.

Patients generally are not aware of the symptoms of hypoglycemia and may consider them as a normal consequence of the bariatric operation and this will lead to delayed or even missed diagnosis [6,7].

Repeated and prolonged hypoglycemic events in patients with insulinoma can cause hypoglycemia unawareness, which can mislead the clinicians to the primary cause of the hypoglycemia (i.e. insulinoma) [8].

As up to 70% of Post LRYGB patients will report dumping syndrome 1–3 years after the surgery [9], thus, nutritional counseling should always be the first therapeutic line for these patients. However, if the

symptoms persist despite the dietary measures, an autonomous source of insulin should be investigated and if identified treated as needed. It is of utmost importance that bariatric surgeons be able to recognize metabolic conditions including hypoglycemia, as a treatable cause of dumping-like symptoms.

Declarations

Ethics approval and consent to participate

The authors declare that they have no conflicts of interest.

For this retrospective study, ethical formal consent is not required.

Informed consent was collected from all individuals included in this study.

Consent for publication

All authors agreed to this publication.

Availability of data and materials

Data sharing is not applicable to this article as no datasets were generated or analyzed during the current study.

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Figures

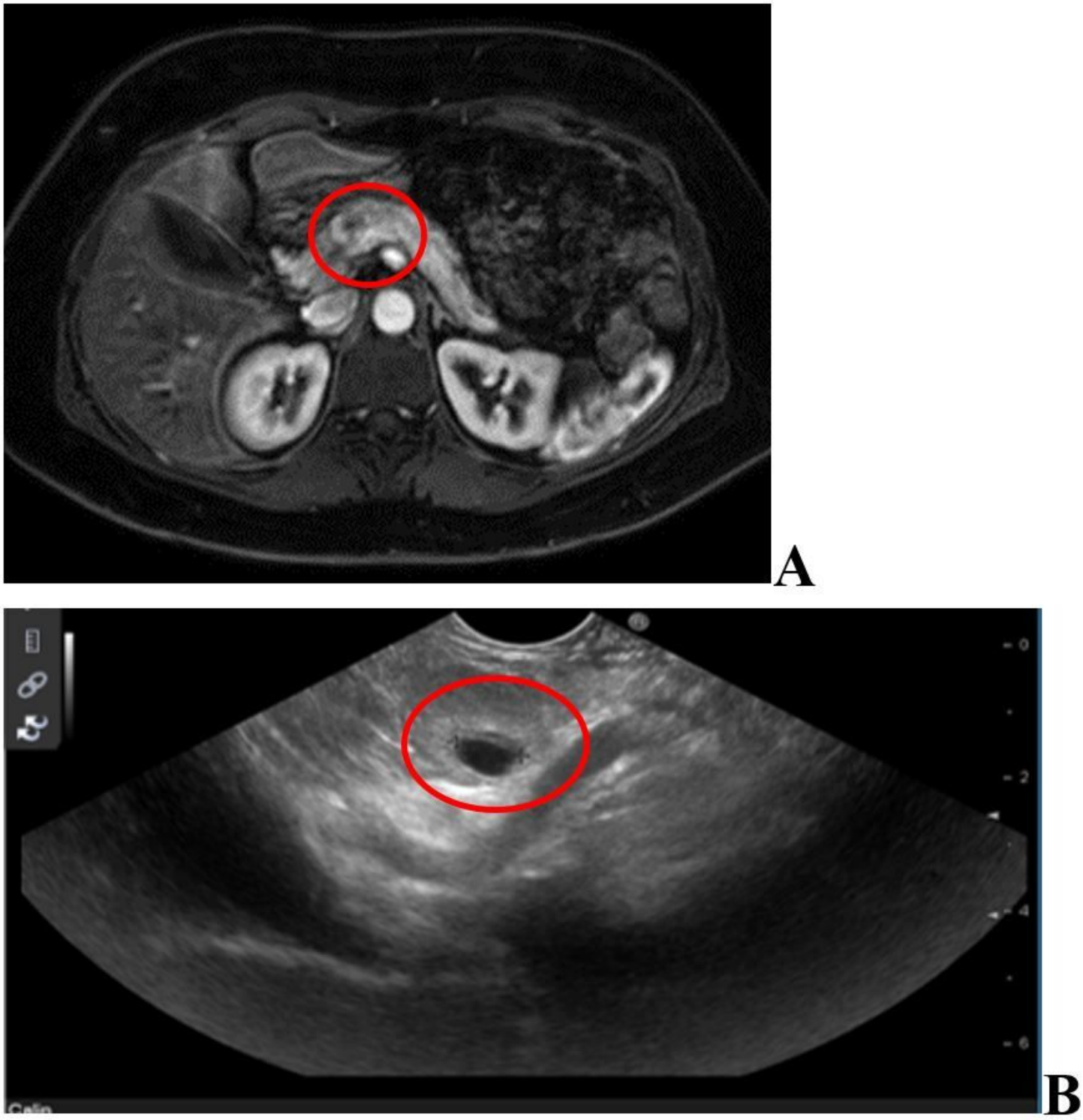

Figure 1

Magnetic resonance imaging (A) and endoscopic ultrasound (B) scans of the abdomen showing the presence of an insulinoma in the body of the pancreas.