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CASE REPORT

Gestational Diabetes: A Case Report

Diabetes gestacional: a propósito de un caso

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ABSTRACT

A case report was presented on a pregnant woman with gestational diabetes admitted on August 8, 2022, with a personal medical history of drug-induced thrombopathy. She was admitted to the obstetrics and gynecology department of the "Héroes del Baire" General Teaching Hospital after being referred by the Maternity Home at 37 weeks due to elevated blood glucose levels. She reported no vaginal discharge, painful contractions, or lower abdominal pain; she was afebrile, had normal bowel and bladder function, and maintained her appetite. She underwent a cesarean section two weeks after admission, from which she recovered satisfactorily. The authors decided to present this case given the importance and danger posed by gestational diabetes in full-term pregnant women; therefore, strict dietary control and monitoring must be implemented to observe fetal development.

Keywords: Pregnant woman; Gestational diabetes; Diet.

RESUMEN

Se realizó una presentación de caso de una gestante con diabetes gestacional ingresada el día 8 de agosto del 2022, con antecedentes patológicos personales de trombopatía adquirida por causa medicamentosa, recibida por el servicio de ginecobstetricia del Hospital General Docente "Héroes del Baire" luego de ser remitida por el Hogar Materno a las 37 semanas al presentar cifras elevadas de glicemia. No refería pérdidas vaginales, contracciones dolorosas, ni dolor bajo vientre, afebril, necesidades fisiológicas normales, apetito conservado. Se le realizó cesárea dos semanas después de su ingreso, de la cual se recuperó satisfactoriamente. Los autores deciden realizar esta presentación de caso dada la importancia y el peligro que representa la diabetes gestacional en las embarazadas a término, por ello se debe realizar un control estricto en la dieta y monitoreo para observar el desarrollo fetal.

Palabras clave: Gestante; Diabetes Gestacional; Dieta.

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INTRODUCTION

Since Mills reported an unfavorable obstetric history in patients who were later diagnosed with diabetes mellitus in the 1940s, the adverse relationship between glucose intolerance diagnosed during pregnancy and maternal and perinatal outcomes has been recognized.

In normal pregnancy, metabolic adaptations occur to correct the imbalances caused by the increased nutritional demands of the fetus. One such adaptation involves the need to increase insulin secretion to meet the heightened demand for glucose utilization.1

Gestational diabetes (GD) is a condition characterized by impaired carbohydrate metabolism of varying severity that begins or is first detected during pregnancy. It affects approximately 50% of patients with GD who do not present these risk factors2-3.

It is the pathological condition that most frequently complicates pregnancy, with implications for the future of both the woman and her child. Until recently, no conclusive studies have linked maternal hyperglycemia levels to maternal–fetal morbidity and mortality, due in part to confounding factors such as obesity, maternal age, or associated medical complications.4

It manifests in the second or third trimester of pregnancy and is diagnosed by an abnormal oral glucose tolerance test (OGTT) or two elevated fasting blood glucose levels. Diagnostic criteria suggested at the Fourth International Workshop on Gestational Diabetes, adopted by the American College of Obstetricians and Gynecologists and based on the criteria of Carpentier and Constan5.

In 2015, the American Diabetes Association (ADA) established that GDM can be diagnosed using two strategies during weeks 24–28 of gestation6–7.

• A single-step approach involving a 75-g oral glucose tolerance test (OGTT) performed in a fasting state, with measurements taken at baseline, one hour, and two hours; if at least one of the values is ≥ 92, 180, or 153 mg/dL, respectively, a diagnosis of GDM is considered confirmed.

• Two-step: First, screening using a 50-g OGTT (no fasting required); if the screening is positive (glucose level at 1 hour ≥ 140 mg/dL), a diagnostic test using a 100-g OGTT will be performed, either according to the Carpenter and Coustan method8 or the National Diabetes Data Group (NDDG) method.

It is estimated that the first strategy would double or triple the diagnosis of GDM (from approximately 5–6% to 15–20%), which would have implications for overtreatment and costs; however, the intention is to optimize pregnancy outcomes, and the ADA itself notes that 80–90% of cases could be managed exclusively through lifestyle changes9.

To date, the World Health Organization (WHO) has established a diagnosis of GDM using a 75-g oral glucose tolerance test (OGTT) and measurements of fasting and 2-hour blood glucose levels. If the blood glucose concentration was ≥ 126 or 140 mg/dL, a diagnosis was considered confirmed9.

Women with uncontrolled blood glucose often experience certain complications during pregnancy, such as spontaneous abortion, hypertension, polyhydramnios, and preterm birth, in addition to facing increased risks during delivery because of the large size of the infants at birth (macrosomia), as well as stillbirth or birth complications.10

Since fetal blood glucose is directly related to maternal blood glucose, alterations in this maternal parameter lead to changes in fetal metabolism, resulting in hyperinsulinemia in the fetus11. Not only is carbohydrate metabolism altered, but there are also fluctuating increases in fetal plasma levels of free fatty acids, triglycerides, ketone bodies, and certain amino acids.12 All these alterations are more pronounced in pregnant women with poor metabolic control.

Furthermore, the newborn is exposed to a series of metabolic alterations secondary to poor maternal–fetal metabolic control (hypoglycemia, hypocalcemia, polycythemia, hyperbilirubinemia, and decreased lecithin synthesis) that prevent the newborn from adapting well to extrauterine life, increasing neonatal morbidity and mortality; this condition is more common in infants of diabetic mothers with greater metabolic decompensation13-14.

Optimal glycemic control during the periconceptional period and throughout pregnancy is associated with better maternal–fetal outcomes, including a reduced risk of malformations and perinatal mortality. Therefore, all women with diabetes of childbearing age should receive regular preconception counseling from their healthcare team, whether in primary care or specialized care (gynecology/endocrinology)15.

The risk for each patient wishing to become pregnant will be assessed individually, and glycemic control and the management of associated complications and comorbidities will be optimized by discontinuing or replacing potentially teratogenic medications with safer alternatives for pregnancy15.

Globally, gestational diabetes is among the most prevalent conditions among pregnant women. One in six pregnant women had gestational diabetes. In the Americas, the prevalence of pregnancies ranges from 1% to 14%. In the United States, 135,000 new cases are diagnosed annually, with a prevalence of 1.4% to 2.8% in low-risk populations and 3.3% to 6.1% in high-risk populations. Chile is a country with a low incidence, but it has gradually become one with an intermediate prevalence, accounting for 13.8%. In Mexico, gestational diabetes complicates approximately 8 to 12% of deliveries performed in a year15.

In Cuba, recent studies have reported that the prevalence of gestational diabetes is approximately 4.5%15. In the municipality of Contramaestre in the province of Santiago de Cuba, a higher prevalence of gestational diabetes (64.90%) was observed among women aged 26–30 years. In the province of Ciego de Ávila, a study of patients admitted to the provincial hospital revealed that 30% of these pregnant women were over 30 years of age and that 45% had a family history of the condition16.

Numerous efforts have been made nationwide to detect diabetes early in pregnant women in general. In the Special Municipality of Isla de la Juventud, strict glycemic control has been implemented for pregnant women, who have received appropriate follow-up care from their family doctors and through the maternal–child health program; as a result, the rates of macrosomia and neonates with neurological disorders have been reduced in that region17.

Good control of blood glucose levels in pregnant women leads to a healthier pregnancy and safer delivery and helps prevent future health problems for the child.

Rationale

This research was inspired by the scarcity of statistical data on the management of pregnant women with diabetes in the Special Municipality of Isla de la Juventud. This topic is highly important in modern society, since, although it is a subject frequently addressed by experts as well as by students in community interventions, this condition continues to affect pregnant women because they do not adhere to the proper dietary regimen recommended by their primary care physicians; consequently, uncontrolled blood glucose levels in pregnant women are being increasingly observed. This is one of the conditions that poses significant risks to the fetus and future newborn. Given the importance of this research, the authors decided to present this case study.

Objective: To explain the clinical characteristics, management approach, differential diagnoses, and potential complications through the presentation of a case involving a full-term pregnant woman with gestational diabetes admitted to the Obstetrics ward of the “Héroes del Baire” General Teaching Hospital.

CASE PRESENTATION

Reason for admission: Metabolic control.

History of the current illness: A 32-year-old pregnant woman (ASP), admitted on August 8, 2022, with a white skin color, from an urban area, with a personal medical history of irreversible drug-induced thrombopathy, bronchial asthma, and gastritis (), and a family medical history of hypertension on both the mother’s and father’s sides, as well as bronchial asthma, from which her son also suffers. Obstetric history: Pregnancies: 7 Deliveries: 1 (eutocic) Abortions: 5 (induced). Date of last menstrual period unreliable. She was referred by the local health center to the maternal health clinic because of significant high-risk obstetrics, as she presented with a glucose tolerance test consistent with gestational diabetes, and at 37.1 weeks, she was transferred to Héroes del Baire Hospital. She reported no vaginal bleeding, painful contractions, or lower abdominal pain; she was afebrile, with normal bowel and bladder function, and her appetite was intact. Allergy to salbutamol and metoclopramide. There was no history of blood transfusions. She underwent two surgeries: an ectopic pregnancy in 2013 and cauterization for Grade II cervical dysplasia in 2016.

Physical examination

The mucous membranes were normal in color and moist.

Skin: Normal hydration and normal temperature.

Respiratory system: Audible vesicular breath sounds, no rales. Respiratory rate: 16 breaths/min

Nervous system: no neurological abnormalities.

Cardiovascular system: Rhythmic heart sounds of good tone and intensity. Heart rate: 81 bpm Blood pressure: 120/70 mmHg

Renal system: Anterior and posterior pyelorenal–ureteral points negative.

Obstetric examination revealed the following results: facial height, 35 cm; fetal heart rate, 140 bpm; abdominal circumference, 104 cm; uterine tone, 0/10; and right cephalic presentation; and fetal movements, yes.

Subcutaneous tissue: No infiltration

Diagnostic impressions

Pregnant woman with gestational diabetes with metabolic control

Moderate anemia

Drug-induced acquired thrombopathy

Compensated bronchial asthma

Moderate risk of venous thromboembolism

Risk of hypoxic–ischemic encephalopathy

Nutritional value

Initial weight: 70 kg

Current weight: 81 kg

Total weight gain: 11 kg

Ideal weight gain: 7.2 kg

Blood volume

Total blood volume: 6480 ml

Tolerable blood loss: 648 ml

50%: 3240 ml

25%: 1,620 ml

Biometry

Biparietal diameter: 89 mm

Abdominal circumference: 342 mm

Femur length: 74 mm

Amniotic fluid: normal

Fetal weight: 3453 g

Female

The following test results were obtained:

Hematocrit: 0.28

Hemoglobin: 9.2 (moderate anemia)

Coagulation profile:

Platelet count: 366 × 10^9/L

Bleeding time: 1 min

Clotting time: 8

TGO: 15

TGP: 11

Alkaline phosphatase activity: 173

Total protein: 60

Albumin: 46

creatinine level: 49

Urea: 4.3

Uric acid: 217

Cyturia:

White blood cells: 0

Red blood cells: 0

Cylinders: 0

Ketoneuria: 0

An electrocardiogram was performed and revealed tachycardia.

It was decided to order a glucose profile to ensure good metabolic control in this pregnant woman; by monitoring her blood glucose levels, future complications could be avoided. Her blood glucose levels were within normal ranges according to the time of day.

6 a.m.: 5.4

9:30 a.m.: 4.8

10 p.m.: 8.4

Given the patient's low hemoglobin level indicated by the tests, it was decided to administer a transfusion of 2 units; during this process, her temperature and blood pressure were monitored and remained normal.

After the transfusion, it was decided to recheck the hematocrit, which returned to 0.34, corresponding to a hemoglobin level of 11.22, indicating marked improvement.

The blood glucose levels and blood pressure of the pregnant woman were continuously monitored.

Delivery

On August 21, at 39 weeks of gestation, labor induction began because of lower abdominal pain. No diabetic decompensation was observed; vital signs were normal; uterine contractions were 3/10 in frequency and of short duration and low intensity; the fetal heart rate ranged from 150–142–154; fetal movements were reduced; a small amount of clear fluid leakage was detected; and she also presented with bleeding. Hours later, she was transferred to the labor ward, where she gave birth to a live female newborn with an Apgar score of 9/9; the delivery was eutocic.

Rafia: Yes

Breasts: suitable for breastfeeding

TCS: no infiltration

After four hours of recovery, she reported no weakness, her uterus remained well contracted, bleeding was without clots, vital signs were good, and there was no diabetic decompensation.

Medical instructions

Sugar-free milk every 6 hours

Folic acid (5 mg) 1 tablet daily

Vitamin C (500 mg), 1 tablet daily

Normal-calorie diet, 3 meals daily

Given the patient's good mood and normal glucose levels, the on-call medical team decided to discharge the patient on August 28, 2022.

DISCUSSION

This study addresses the incidence of GDM as the most common complication of pregnancy, affecting approximately 4–5% of pregnant women. These cases can be managed as g, with careful and sustained monitoring of glucose levels as soon as the diagnosis is made, although very high blood sugar levels may occur during pregnancy15.

Strict blood sugar control can prevent difficult delivery and problems for newborns, such as hypoglycemia, hypocalcemia, polycythemia, and hyperbilirubinemia. Blood sugar levels usually return to normal shortly after delivery. However, mothers who have had gestational diabetes, such as the patient in this case, are at increased risk of developing type 2 diabetes in the future.

In the pregnant woman in this case, good metabolic control was achieved despite all the associated pathological history, since the risk of hypoxic-ischemic encephalopathy (one of the most concerning risks) reduces oxygenation levels to the tissues; when this occurs, oxygen levels in the fetus also decrease, since the fetus is connected to the mother via the uteroplacental circulation, thereby compromising oxygenation and blood flow throughout the body, which can lead to fetal death.

Bronchial asthma in a pregnant woman with diabetes not only affects the mother but can also reduce the amount of oxygen the fetus receives from her. Owing to the care provided by the municipal doctors, the patient was able to manage this condition effectively.

Monitoring fetal well-being and a diet with reduced sugar intake helped this patient achieve good metabolic control, which was highly important at the time of delivery, as the fetus did not suffer from shoulder dystocia or any of the complications.

According to studies conducted by specialists in gynecology and obstetrics at the Lozano Blesa University Clinical Hospital in Zaragoza, Spain, pregnant women with diabetes can achieve good metabolic control by following an appropriate diet 18, which corroborates the recommendations provided by the municipality's doctors.

In a study conducted on this topic in the province of Guantánamo, Savigne and Laffitta reported that the 30–39 age group had the highest incidence of this condition (GD), since the advanced age of pregnant women increases the risk of gestational diabetes as cellular senescence increases 19. The patient fell within this age range.

Similarly, according to Brisson and data from the 2017 statistical yearbook, the 30–39 age group was predominant.20–21

CONCLUSIONS

Strict control of glucose levels clearly reduced the risk of perinatal complications. This critical issue in pregnancy requires further study and metabolic monitoring to prevent future risks and complications.

REFERENCES

1. Orlando Rigor R, Stalina Santiesteban A, Rigor-Santiesteban, Ginecología y Obstetricia. Editorial Ciencias Médicas, Ciudad de La Habana, 2023. Disponible en: http:www. Ecimed sld.cu/.
2. Huidobro A. Diabetes y embarazo [en internet]. 2003. Disponible en: http://www.tuotromedico.com/tema/diabetes_y_embarazo.htm.
3. Sepe SJ, Connell FA, Geiss LS, Teutsch SM. Gestational diabetes. Incidence, maternal characteristics, and perinatal outcome. Diabetes 2020; 34 Suppl 2: 13-6.
4. Canadian Diabetes AssociationClinicalPracticeGuidelines Expert Committee, Thompson D, Berger H, Feig D, Gagnon R, Kader T, et al. Diabetes and pregnancy. Can J Diabetes 2013;37(Suppl 1):S168-83.
5. Sociedad Andaluza de Medicina Familiar y Comunitaria. Grupo diabetes. Diabetes y embarazo [en internet]. 2021.Disponible en: http://www.cica.es/aliens/samfyc/embarazo.htm
6. Grupo Español de Diabetes y Embarazo (GEDE). Documento de consenso. Guía asistencial de diabetes mellitus y embarazo. AvDiabetol2019;22:73-87.
7. NationalCollaborating Centre forWomen's and Children'sHealth (UK). Diabetes in pregnancymanagementof diabetes and itscomplicationsfrompreconceptiontothe postnatal period. London: RCOG Press; 2008.
8. Carpenter MW, Coustan DR. Criteriafor screening testsforgestational diabetes. Am J ObstetGynecol1982;144:768-73.American Diabetes Asociation.
9. American Diabetes Association. Position statement. Standardsof medical care in diabetes 2011. Diabetes Care 2011;34(Suppl 1):S11-61.
10. Villarroel Zambrana D. Diabetes gestacional [en internet]. 2013. Disponible en: http://www.galenored.com/trabajos/?id=46
11. Biblioteca de Salud: La diabetes durante el embarazo [en internet]. 2022. Disponible en: http://www.nacersano.org/centro/9388-9921.asp
12. Gillmer MD, BeardRW, Brooke FM, Oakley NW. Carbohydratemetabolism in pregnancy. Part I. Diurnal plasma glucoseprofile in normal and diabeticwomen. BMJ 2020; 3: 399-402.
13. Moya FY, Gross I. Diabetes and fetal lungdevelopment. En: Reece EA, Cosutand DR eds. Diabetes Mellitus in Pregnancy: Principies and Practice. Londres: Editorial Churchill Livingstone 2018; 123-38.
14. Texas Heart Institute (Instituto del Corazón en Texas). Diabetes sacarina [en internet]. 2021. Disponible en: http://www.bcm.edu/tmc/thi/diabetes_sp.html
15. Domínguez-Vigo P, Domínguez-Sánchez J, Álvarez-Silvares E, González- González A. implicaciones del diagnóstico de Diabetes Gestacional en la salud futura de la mujer. GinecolObstet Mex [en internet]. 2020 (Citado 02-02-2023);84(12):775-784.
16. Cajigal-Pelegrín Y, Rodríguez- Rodríguez LA. Algunas Variables relacionadas con el diagnóstico de diabetes gestacional en Ciego de Ávila .MediCiego [en internet]. 2022 (Citado 04-02-2023);21(3):27-33.
17. Sociedad Española de Ginecología y Obstetricia, Grupo Español de Diabetes y Embarazo. Diabetes mellitus y embarazo. Guía de práctica clínica actualizada 2021. ProgObstetGinecol2022;65:35-41
18. Tébar Tomás D, Cía Pueyo P, Álvarez Martínez A, Cía Pueyo A, Azcárte Pardos C. Revista Ocronos.2022, Vol. V, n ° 5: 100.
19. Jacas Savigne AG, Savigne Sainz O, Gonzales Laffita Y, Comportamiento de diabetes mellitus gestacional en un hogar materno. Rev Inf Cient. 2022;96(2):168-176.
20. Anuarios Estadísticos de Salud [Internet]. La Habana: Dirección Nacional de Regisros Médicos y Estadísticas de Salud. [Citado 19 May 2022]. Disponible en: http://www.sld.cu/servicios/estadisticas600X2011000400007&lng=es
21. Brisson D, Perron P, Pierre Guay S, Gaudet D, Bouchard L. Detección precoz de la intolerancia a la glucosa gestacional. CMAJ [Internet]. 2020 [citado 2 Abr 2022]; 182(15):26-9. Disponible en: http://www.cmaj.ca/cgi/contenet/full/182/15/E722

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