Successful Conservative Management of Primary Hyperparathyroidism Diagnosed During Pregnancy

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Abstract

Introduction: Primary hyperparathyroidism (PHP) is a rare condition that leads to severe maternal and fetal complications in pregnancy. In this report, we aimed to present the successful conservative medical treatment of PHP diagnosed during pregnancy.

Case Presentation: A 32-year-old pregnant woman was referred to our clinic at 14 weeks of gestation with severe vomiting, chronic constipation and proximal muscle weakness. According to the clinical presentation, PHP was diagnosed on the basis of biochemical and ultrasonographic findings. The patient was treated with high fluid intake, low calcium diet, oral phosphate supplementation and intramuscular injection of calcitonin. At 38 weeks of gestation, healthy infant was delivered by cesarean section with mild preeclampsia.

Conclusion: Treatment options of PHP, including medical and surgical therapy, are debated in the literature. Early diagnosis and effective management may reduce perinatal mortality and morbidity. Although surgical treatment in the second trimester is the definitive therapy, conservative management can be preferred in mild cases of PHP in pregnancy.

Keywords: Disease management, Pregnancy, Primary hyperparathyroidism

Introduction

Primary hyperparathyroidism (PHP) is the third most common endocrine disorder after diabetes and thyroid disease. Women are affected twice as commonly as men (1). Although PHP is a very rare condition during pregnancy, it may cause feto-maternal morbidity and mortality (2). The prevalence of hyperparathyroidism in pregnancy varies from 0.15% to 1.4% (3). PHP occurs due to decreased negative feedback control and autonomous parathyroid hormone production by the parathyroid glands. The most frequent reason of PHP is a single parathyroid adenoma (85%) followed by parathyroid hyperplasia (15%-20%) (4).

The treatment of PHP during pregnancy is based on severity of the disease. The optimal management in pregnancy has been debated in the literature. Conservative therapy for hypercalcemia may induce preterm delivery (5). Surgery is the most definitive treatment of PHP. Although it reduces the incidence of life-threatening maternal and fetal complications such as pre-eclampsia, miscarriage and hypercalcemic crisis, may provoke spontaneous abortion and preterm delivery (6). In this report, we aimed to present the successful conservative medical treatment of PHP diagnosed at 14 weeks of pregnancy.

Case Presentation

A 32-year-old pregnant woman was referred to Yuzuncu Yil University Medical School, Obstetrics and Gynecology, Department of Perinatology, Van, Turkey at 14 weeks of gestation with severe vomiting, chronic constipation and proximal muscle weakness. According to the clinical presentation, PHP was diagnosed on the basis of biochemical and ultrasonographic findings. The patient was treated with high fluid intake, low calcium diet, oral phosphate supplementation and intramuscular injection of calcitonin. At 38 weeks of gestation, healthy infant was delivered by cesarean section with mild preeclampsia.

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plasma calcium and phosphate levels on weekly period, conservatively. The symptoms of proximal muscle weakness and vomiting were progressed to 20 weeks of gestation despite of conservative treatment. We recommended to patient parathyroid surgery in the second trimester, as a radical and definitive treatment of PHP. After informing the patient about benefits and risks associated with this procedure, she declined surgical therapy during pregnancy. Therefore, we started calcitonin at the dose of 4 mg/kg intramuscularly, 2 times during pregnancy to treat persistent symptoms of hypercalcemia. At 38 weeks of gestation, mild preeclampsia was developed as a complication of PHP. A 3150 g. Apgar score 7-9 healthy, male infant was delivered by cesarean section without admission to the neonatal intensive care unit. Early neonatal hypocalcemia was detected with a calcium level of 7.1 mg/dl. We started intravenous calcium infusion (calcium gluconate, 400 mg/kg/day) and active vitamin D (calcitriol, 50 ng/kg/day) treatment to the newborn to increase serum calcium level. The infusion was continued for following two days of delivery. The patient and newborn were discharged on the fifth day of cesarean section. Maternal conservative treatment without calcitonin was continued in the postpartum period. Open focused parathyroidectomy was performed to the patient 6 months later.

Discussion
The prevalence of PHP during pregnancy is probably underestimated because of non-recognition and selective reporting. In a previous study, PHP varies from 0.15% to 1.4% during pregnancy (3). The most important cause of PHP is a solitary parathyroid adenoma. Maternal complications of untreated parathyroid disorder can lead to nephrolithiasis, hyperemesis or potentially life-threatening complications such as hypercalcemic crisis, preeclampsia and pancreatitis (7). Intrauterine growth retardation, low birth weight, preterm delivery, intrauterine fetal demise and postpartum neonatal tetany may occurs fetal complications (8). Early diagnosis and effective management of this condition can reduce feto-maternal mortality and morbidity. Clinical manifestations of PHP may be similar to pregnancy-related disorders. Therefore, some physiological modifications of pregnancy can mask typical symptoms of PHP. Correct diagnosis of PHP in pregnancy plays an important role due to the significant risk of pre-perinatal mortality. In our case, the patient complained about non-specific symptoms like severe vomiting and proximal muscle weakness. The other finding for PHP was the history of intrauterine fetal demise in previous pregnancy. Ultrasonographic examination is the preferred imaging modality during pregnancy for location of parathyroid adenomas with a sensitivity of 69% and a specificity of 94%. Computerized tomography and sestamibi scintigraphy are contraindicated during pregnancy due to possible risks of ionizing radiation (9).

Conclusion
PHP during pregnancy is a rare and preventable cause of feto-maternal morbidity and mortality. Early correct diagnosis is essential for the management of PHP to avoid serious complications during pregnancy. Conservative management should be preferred in mild cases of PHP. Oral phosphate supplementation and intramuscular injection of calcitonin are safe and appropriate options of the treatment. On the other hand, surgical treatment in the second trimester is the gold standard and definitive therapy for PHP. Treatment options should be individualized to each pregnant woman based on the severity of the disease.

Ethical issues
Written informed consent was obtained from the patient who participated in this study.

Conflict of interests
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