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Başlık: Molar Gebelik Sonucu Gelişen Hipertiroidizm Olgusunda Plazmaferez Tedavisi

Kısa Başlık: Molar gebelik ve plazmaferez tedavisi

Title: Successful Preoperative Treatment by Plasmapheresis of Hyperthyroidism with Hydatidiform Mole

Running Head: Hydatidiform Mole and Plasmapheresis

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ÖZ

18 yaşında kadın hasta karın ağrısı, yorgunluk, bulantı, kusma, ellerde titreme ve vajinal kanama şikayeti ile başvurdu. Laboratuar tetkiklerinde artmış human chorionic gonadotropin (hCG), baskılanmış tiroid stimulan hormon (TSH) ve artmış serbest tiroid hormon düzeyleri görüldü. Laboratuar tetkikleri ile birlikte tiroid doppler ve uterus ultrasonografi incelemesi sonucunda molar gebelik sonucu gelişen hipertiroidizm tanısı düşünüldü. Plazmaferez tedavisi ile hastanın semptomların da düzelme ve serbest tiroid hormonlarında normal düzeye gerileme sağlandı. Plazmaferez tedavisi sonrası hastaya dilatasyon ve küretaj tedavisi uygulandı. Histopatolojik incelemede non-invaziv mol hidatiform tanısı doğrulandı.

Anahtar kelimeler: Mol hidatiform, hCG, hipertiroidizm, plazmaferez

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ABSTRACT

We recently encountered a 18-year-old female complaining of abdominal pain, fatigue, nausea, vomiting, tremor of the hands and vaginal bleeding. Her blood test revealed the presence of highly elevated human chorionic gonadotropin (hCG) levels and suppressed thyroid stimultaing hormone (TSH) levels, and increased free thyroid hormone levels. The diagnosis of a molar pregnancy and hyperthyroidism were suspected based on the highly elevated hCG levels and suppressed TSH levels with coexistence of ultrasonographic findings of uterus and thyroid doppler images. Her symptoms and thyroid hormone levels responded well to plasmapheresis. Subsequently, the patient underwent dilatation and curettage for hydatidiform mole. Histopathology of the products verified the diagnosis

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of complete hydatidiform mole with no invasion. The patient currently is stable with hCG levels and thyroid hormone with normal reference ranges.

Key words: Hydatidiform mole, hCG, hyperthyroidism, plasmapheresis

Introduction

Hydatidiform mole (HM) is the most frequently encountered form of gestational trophoblastic disease and fetal developmental defect, in which abnormal trophoblast cells grow inside the uterus after conception (1). The incidence ranges from 1 in 500 to 1 in 1500 pregnancies in western developed countries (1). The high hCG levels induced by HM may induce hyperthyroidism caused by accelerated synthesis of thyroid hormones and pateints present with vaginal bleeding most of the

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time (2). The objective of this report is to present a case in which the plasmapheresis was administered to control thyroid hormones in hyperthyroidism with hydatidiform mole.

Case Report

A female 18 years of age, presented to gynecology and obstetrics service with abdominal pain, nausea, vomiting, and vaginal bleeding for two days. Her last normal menstrual period was one month ago. Her past medical history was unremarkable. She was married with no child and reported no tobacco use. On physical examination, she was tachycardic (110 bpm), dehydrated, was experiencing tremor of the hands, and had a normal blood pressure of 112/66 mmHg. Cardiac assessment yielded normal values of echocardiographic measurements, other than sinus tachycardia yielded on electrocardiography. The size of the uterus was consistent with a 16-week gestation. Ultrasound showed that the uterine cavity was significantly extended and filled with an echogenic soft-tissue mass that had small cystic components, most compatible with complete molar pregnancy.

The levels of hCG were higher than 250,000 mIU/mL. Her thyroid stimulating hormone (TSH) level was decreased to 0.013 µIU/L (0.27-4.2 µIU/L), free thyroxine (fT4) was 3.4 ng/dL (0.93-1.7 ng/dL), and free triiodothyronine (fT3) was 8.1ng/dL (2.0-4.4 ng/dL). Other blood labs, such as hemogram, leukocytes, renal, and liver function tests, were normal. The patient was transferred to an endocrinology department for diagnosis and treatment of hyperthyroidism before uterine curettage with general balanced anesthesia.

We found hypervascularisation of the thyroid gland upon doppler ultrasound examination. Based on the power doppler sonographic findings and thyroid hormone levels, she was diagnosed with

hyperthyroidism. She recieved methimazole at a dose of 40 mg daily and was started on β-receptor antagonist therapy and dexamethasone treatment. In order to displace the thyroid hormones from the body rapidly for better hormonal control, plasmapheresis was administered to the patient before surgery. One session of plasmapheresis was administered to the patient on the first day, lasting for about 3 h. No complications developed during or after the procedures. During plasmapheresis, 3000 mL of plasma was collected from the patient and the same amount of fresh frozen plasma was given to the patient. At the time of surgery, on the second day after admission, she had serum fT4 2.3 ng/dL and fT3 5.1 ng/dL.

Subsequently, the patient underwent dilatation and curettage for evacuation of the mole. There were no complications during surgery or post-operatively. After the first 36-48 hours postoperatively, hCG levels decreased to 77.724 mIU/mL. Histopathology of the products verified the diagnosis of complete hydatidiform mole with no invasion. The patient currently is stable with hCG levels and thyroid hormone with normal reference ranges. Written informed consent was obtained from presented patients.

Discussion

HM with hyperthyroidism is a rare clinical condition, but thyroid hyperstimulation by highly elevated hCG may have triggered the cardiopulmonary system (3). Most people with HM do not have hyperthyroidism, but women with HM have an increased risk of developing hyperthyroidism (2). In a retrospective study, biochemical hyperthyroidism was 7% and clinical hyperthyroidism was only 2% in 196 women patients with HM (4). HM sometimes co-exist with markedly elevated hCG levels, as

can be observed in our patient, who had an hCG levels of approximately half a million mIU/mL (5). Markedly elevated glycoprotein hormone, hCG, is the primary diagnostic indicator of HM (5). The similarity between hCG and TSH can induce cross-reactivity in their receptors. This similiarty in hCG and TSH molecules can cause hyperthyroidism (6). Glinoer has reported that for every 10,000 mU/mL upregulation in serum hCG, fT4 rises by 0.1 ng/dL and TSH reduces 0.1 mIU/mL (7). When gestational trophoblastic disease causes a significant upregulation in hCG levels, it may produce hyperthyroidism that requires urgent treatment. Elective surgery and treatment should be postponed until the patient becomes euthyroid. In instances of emergency surgery, such as in the present case, it may not be possible to wait one week for the stabilization of thyroid hormone levels. As expected, hyperthyroidism resolves with curettage for evacuation of the mole and normalization of hCG levels (2). However, lack of preoperative control of the thyrotoxic state greatly increases the risk of thyroid storm. Thyroid storm associated with surgery can manifest intraoperatively, but is more likely to occur 6-18 hours post-operatively (8). Untreated hyperthyroid crisis (thyroid storm) is usually fatal. The mortality of thyroid storm is reach to 30% despite early recognition and adequate treatment (8).

While HM can be eradicated by simple curretage, but untreated molar pregnancies the incidence of acute respiratory complications increased to 27% (9). In the literature examination, unaddressed hyperthyroidism with HM can both induce acute respiratory insufficiency, a known complication of molar pregnancies occurring in 8-11% of cases and up to as many as 50% (10). Untreated HM with hyperthyroidism is usually fatal (10,11). Due to subsequently prolongation of thyroid function impairment could induce respiratory insufficiency and in molar pregnancy with hyperthyroidism,

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patients have encountered acute cardiopulmonary distress following suction evacuation under general anaesthesia and massive trophoblastic embolism may lead to death (10,11).

Antithyroid medications are most often used to treat hyperthyroidism (12). However, antithyroid drugs can not achieve complete control of thyroid hormone levels rapidly, usually requiring at least three weeks to lower thyroid hormone levels (12). In order to avoid of risk for thyroid storm, and respiratory insufficiency due to both of these diseases plasmapheresis was decided to the patient before surgery.

Conclusion

In literature examination we have shown four case reports (13-15), that plasmapheresis had been used to treat hyperthyroidism with hydatidiform mole. We suggest that plasmaphersis management is always a good choice whenever life-threatening hyperthyroidism is encountered in women with HM.

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