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Case Report

Spontaneous Ovarian Hyperstimulation Syndrome (OHSS) Following Aspiration of a Molar Pregnancy: A Case Report and Review of the Literature

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Abstract

Ovarian hyperstimulation syndrome is an iatrogenic complication most commonly encountered during ovarian stimulation in assisted reproductive technology (ART).

Its spontaneous occurrence following the aspiration of a molar pregnancy or outside of pregnancy is extremely rare.

It manifests as the presence of multiple intra-ovarian follicles with the formation of a third sector.

Testing for hypersecretion of glycoprotein hormones (HCG, TSH, FSH and LH) and a mutation in FSH receptors may be necessary to understand the etiology in cases of spontaneous ovarian hyperstimulation syndrome (OHSS).

The most serious complication is the occurrence of thromboembolic events, and healthcare professionals must be aware of this potential complication at the time of diagnosis.

Management is purely symptomatic, with close monitoring required for the prevention and management of complications.

We report a case of spontaneous ovarian hyperstimulation syndrome occurring following aspiration of a molar pregnancy in a 26-year-old patient who had not undergone any assisted reproductive technology.

Our study highlights the importance of considering spontaneous ovarian hyperstimulation syndrome in the differential diagnosis of abdominal pain in both pregnant and non-pregnant women.

Keywords: *Ovarian Hyperstimulation Syndrome; Molar Pregnancy; Aspiration*

Introduction

Ovarian hyperstimulation syndrome (OHSS) is very often an iatrogenic complication of controlled ovarian stimulation used in assisted reproductive technology (ART); it generally occurs following the administration of exogenous hormones and complicates 3 to 10% of ART cycles, with an incidence that can reach 20% in high-risk women [1].

This syndrome can rarely occur spontaneously outside of or during pregnancy, thus posing a differential diagnostic challenge with ovarian cancer [3].

It manifests as enlarged ovaries, effusions (peritoneal, pleural, or pericardial), oliguria, hemoconcentration, hypercoagulability, and electrolyte disturbances [2].

Its severity varies from mild abdominal distension to major complications, with a life-threatening prognosis that may require medical resuscitation measures [4].

Case Report

We report a case of ovarian hyperstimulation syndrome that occurred following the aspiration of a molar pregnancy at 11 weeks of amenorrhea (WA), which required hospitalization in the Department of Obstetrics and Gynecology at the Mohamed V Military Teaching Hospital in Rabat, with clinical and laboratory monitoring and appropriate medical treatment.

Medical history

This is a 28-year-old patient, Rh-positive, nulliparous, with a history of unexplored recurrent miscarriage (4 early spontaneous miscarriages), admitted at 11 weeks' gestation based on a precise last menstrual period for first-trimester bleeding, in whom the physical examination revealed a hemodynamically stable patient with a BMI of 22 kg/m^2.

Pelvic ultrasound revealed a heterogeneous, honeycomb-like intrauterine image suggestive of a molar pregnancy (Figure 1), with no lateral uterine image or peritoneal effusion.

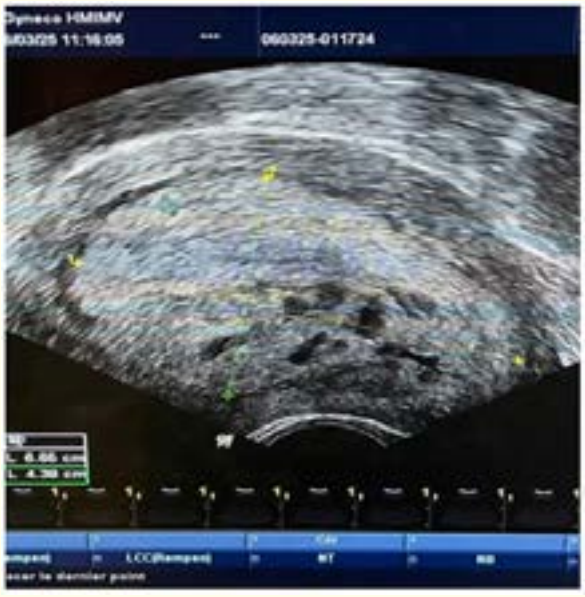

Figure 1: *Honeycomb pattern.*

Laboratory tests, including a complete blood count (CBC) and quantitative B-hCG measurement, were performed, revealing a hemoglobin level of 8.9 g/dL and a very high B-hCG level, exceeding 200,000 IU.

The patient therefore underwent ultrasound-guided aspiration under spinal anesthesia, and the specimen was sent for histopathological examination.

Postoperative complications arose 6 days later with the sudden onset of acute pelvic pain in the right iliac fossa, accompanied by nausea and vomiting, all occurring in the context of afebrile status and stable general condition.

On physical examination, the patient was normotensive, with a normal heart rate, eupneic, afebrile, with no signs of dehydration, preserved urine output, a soft, non-distended abdomen, and diffuse abdominal tenderness.

Speculum examination revealed minimal blackish bleeding of endometrial origin.

On vaginal examination, the uterus was of normal size, with no lateral uterine mass, no pain on uterine mobilization, and the Douglas pouch was not distended.

The physical examination was supplemented by a pelvic ultrasound, which revealed a 20-mm intrauterine mass, with bilateral enlargement of both ovaries, appearing macropolycystic and measuring 9.5 x 6.5 cm on the right and 9.4 x 7 cm on the left (Figure 2), with the presence of a thin layer of peritoneal effusion.

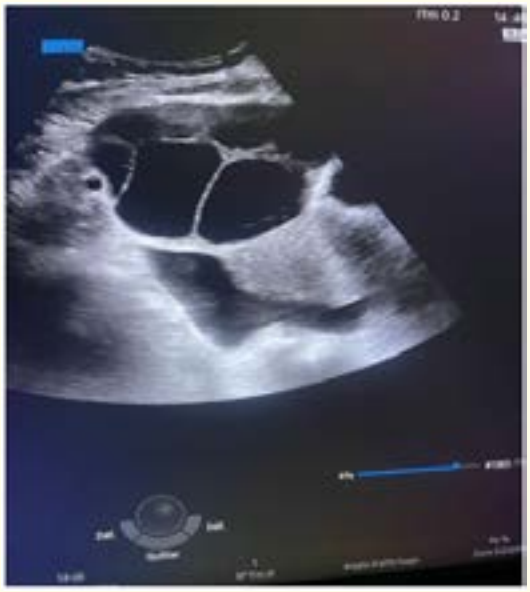

Figure 2: *Macro-polycystic ovary.*

Laboratory tests revealed hypochromic microcytic anemia, with a hemoglobin level of 9.2 g/dL, a hematocrit of 35%, white blood cells at 11,600/µL, CRP at 24.6 mg/L, and HCG at 67,966 mIU/mL; electrolyte levels, thyroid function, and liver function were normal.

The patient was therefore hospitalized with moderate spontaneous ovarian hyperstimulation syndrome, without signs of complications.

She received medical resuscitation via hemodynamic volume replacement, analgesic therapy, and prophylactic-dose thromboprophylaxis, combined with clinical and laboratory monitoring. This led to clinical and ultrasound improvement starting on the second day of hospitalization.

She also underwent a second aspiration prior to discharge to ensure uterine evacuation.

The patient was subsequently seen for a follow-up visit, with pathological results confirming a partial molar pregnancy.

She was then placed on effective contraception, with weekly monitoring of B-HCG levels until three consecutive negative results, followed by monthly monitoring for 6 months.

Discussion

Ovarian hyperstimulation syndrome is characterized by the formation of multiple intra-ovarian follicles, leading to excessive secretion of ovarian hormones and vasoactive substances (cytokines, angiotensin, Vascular Endothelial Growth Factor (VEGF)), thereby causing increased capillary permeability and the formation of a third space under the influence of hCG and LH [5].

It most commonly occurs during assisted reproductive technology (ART) depending on the protocols used.

Its spontaneous occurrence during a normal or molar pregnancy is rare, with a prevalence not documented in the literature [6].

Chai Wei., *et al*. report a case of spontaneous ovarian hyperstimulation syndrome outside of pregnancy (normal or molar) and without a history of assisted reproductive technology, demonstrating that diagnosis based on clinical presentation is not always straightforward [11].

Several risk factors are cited by the authors. These include young age, a BMI below 20 kg/m^2, a history of polycystic ovary syndrome (PCOS), primary hypothyroidism, and multiple pregnancies [7].

In our case, the patient was 28 years old, with a normal BMI, no history of ovarian hyperstimulation syndrome, no history of ovulation induction, normal thyroid function, and a molar pregnancy that had been aspirated 6 days prior.

This case demonstrates the possibility of spontaneous ovarian hyperstimulation syndrome occurring during a molar pregnancy in the absence of thyroid dysfunction, even after uterine evacuation.

Studies have reported a classification of spontaneous ovarian hyperstimulation syndrome into four types of FSH receptor (FSH-R) mutations, which may explain its development [10]:

- Type I spontaneous ovarian hyperstimulation is characterized by an activating FSH-R mutation with low or normal B-HCG levels;
- Type II, with elevated plasma β-hCG levels, is most commonly seen during molar or multiple pregnancies;
- Type III is characterized by elevated plasma TSH levels, occurring in cases of hypothyroidism;
- Type IV is associated with a pituitary adenoma secreting FSH or LH.

The mutation may be of the activating type, leading to increased sensitivity to hCG, TSH, or FSH, whereas the inactivating type results in poor ovarian response to gonadotropins [12].

The interaction between these hormones (hCG, TSH, FSH, LH) stems from the fact that they belong to the same family of glycoproteins with a similar receptor.

Receptor typing was not performed in our case due to the unavailability of this test [7].

Spontaneous or iatrogenic hyperstimulation syndrome is primarily suspected in the presence of abdominal pain, nausea and vomiting, rapid abdominal distension, peritoneal or pleural effusion, or dyspnea.

Laboratory tests may reveal hemoconcentration, hypoalbuminemia, electrolyte imbalances, and elevated plasma levels of hormones (HCG, FSH, LH, TSH).

Abdominal ultrasound confirms the diagnosis by revealing macro-cystic ovaries and, depending on the severity, sometimes peritoneal effusion [12].

The differential diagnosis is made with ovarian cancer, based on the rapid onset of distension and negative tumor markers [8].

Our patient complained of abdominal pain localized in the right iliac fossa, nausea, and vomiting; there was no abdominal distension, with stable hemodynamic status and no major biological abnormalities.

Ultrasound revealed bilateral macro-cystic ovaries, with no effusion.

The diagnosis of moderate ovarian hyperstimulation syndrome was made based on clinical, laboratory, and ultrasound findings.

Reported complications include thromboembolic events, ovarian complications such as ovarian rupture, adnexal torsion, and compression of neighboring organs, and renal complications such as renal failure [8].

Management is primarily symptomatic and preventive, based on the severity of the syndrome.

In mild cases, home care is possible, including rest, anticoagulant therapy, and clinical, laboratory, and ultrasound monitoring.

Hospitalization is indicated for moderate to severe cases and includes intravenous rehydration with normal saline or albumin in cases of hypovolemia, thromboembolic prophylaxis, and careful drainage of ascites if the patient is uncomfortable [9]. This is combined with daily monitoring of pulse, blood pressure, weight, abdominal circumference, respiratory rate, renal function, coagulation profile, and regular ultrasound monitoring [3].

Conclusion

Spontaneous ovarian hyperstimulation syndrome (SOHS) is a rare but potentially serious complication that occurs in women of childbearing age, even in the absence of exogenous ovarian stimulation.

Screening for genetic mutations in the FSH receptor could play an important role in understanding the mechanism underlying the development of spontaneous ovarian hyperstimulation syndrome.

Despite its rarity, it can lead to severe complications, such as thrombosis, ascites, respiratory distress, and renal failure, which can be life-threatening for the patient.

Early diagnosis and multidisciplinary management are essential for improving the prognosis.

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