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Case Report

A rare case of spontaneous ovarian hyperstimulation syndrome in a pregnant female managed conservatively

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ABSTRACT

Ovarian hyperstimulation syndrome (OHSS) is a rare syndrome, characterized by cystic enlargement of the ovaries and a fluid shift from the intravascular to the third space due to ovarian neo-angiogenesis and increased capillary permeability. It is generally iatrogenic, occurring due to administration of human chorionic gonadotrophin (hCG) during assisted reproductive techniques. Spontaneous form of OHSS is so rare that is easy to confuse the diagnosis of spontaneous OHSS with other causes. Only few cases have been reported in literature where OHSS was seen without prior stimulation from any exogenous hormones. Here we present a case of spontaneous OHSS in a 30-year-old Indian female who was 5 weeks pregnant. Since there was no history of hormone stimulation before/during this pregnancy, ovarian carcinoma instead of OHSS was thought to be the primary diagnosis. There was presence of breathlessness, ascites and bilateral ovarian masses with raised CA-125. A battery of tests and investigations, the diagnosis of moderate OHSS was made after excluding all other causes. The patient was managed conservatively and her symptoms improved with time. Ovarian hyperstimulation syndrome is generally suspected strongly in patients undergoing infertility treatment whenever there is 3rd space accumulation of fluid or increase in number of follicles in ovary. However, rarely spontaneous ovarian hyperstimulation syndrome can be considered as differential diagnosis in cases where no other causes can be found for presence of abdominal pain, nausea-vomiting, ascites, pleural effusion and enlargement of ovaries specially if the patient is pregnant. Due to increased vascular permeability in such cases along with extravascular loss of fluid, there is intravascular hypovolemia. If the diagnosis is missed, there may be risk of unnecessary interventions and morbidity in such patients. Strict monitoring of patient in hospital is required. In most cases of mild to moderate OHSS only conservative management is needed while in severe cases, intensive care unit (ICU) admission may be necessary.

Keywords: Spontaneous ovarian hyperstimulation, OHSS, Ascites, Pleural effusion, Pregnancy

INTRODUCTION

Ovarian hyperstimulation syndrome is primarily seen in patients undergoing infertility treatment and is rare in modern clinical practice with strict monitoring at time of ovulation induction. Spontaneous ovarian hyperstimulation syndrome (OHSS) is even rarer with only few cases reported in literature in which the patient had received no stimulatory drugs/hormones and is moreover, pregnant.[1,2] OHSS requires a multidisciplinary management approach as the diagnosis and management both require not only the guidance of gynaecologist but radiology as well as that of physician. Severe cases of OHSS may even require critical care. In absence of any external stimulation, elevated levels of beta human chorionic gonadotrophin (hCG) due to pregnancy or serum (Sr.) thyroid stimulating hormone (TSH) due to hypothyroidism may be the cause of hyperstimulation.[3] Spontaneous OHSS has been classified by Dee Leener into three types, Type I is associated with the mutated FSH receptor and this type may cause recurrent spontaneous OHSS. Type II is secondary to high levels of hCG as in

hydatiform mole and multiple gestation and is the most frequent one. Type III is related to hypothyroidism.[3] Moreover, there is also reports of OHSS associated with polycystic ovarian syndrome (PCOS) which may be associated with the patient presented in this case report as she is obese and had no previous reports/scan to rule out PCOD.[4]

CASE REPORT

30-year-old Indian female with previous 1 lower segment caesarean section followed by 1 vaginal delivery presented with complains of amenorrhoea (menses overdue by 7 days) and abdominal distension for 1 week associated with pain. Patient had no significant medical history and no history of use of any contraceptives or ovulation induction. Her previous menstrual cycles were regular of 28 to 30 days, bleeding for 3 to 4 days with moderate flow. No history of bleeding per vaginum, burning micturition or white discharge per vaginum present. No history of cough, cold, fever or breathlessness. There is no history of any other major medical or surgical illness in past. Her urine pregnancy test came positive. On examination, patient was conscious, oriented, no evidence of pallor, oedema, icterus, maintaining SpO_2 of 99% on room air, afebrile. Her pulse was 88 beats per minute (bpm), 120/80 mm of Hg, S1 S2 present on cardiovascular system (CVS) examination, bilateral air entry present. On examination, abdomen was distended, no guarding, rigidity, tenderness, shifting dullness present, obesity present. On per vaginal examination, uterus and ovarian mass could not be assessed due to obesity, no cervical motion tenderness present. Patient was sent for ultrasound examination for confirmation of intrauterine pregnancy. Ultrasound examination revealed Single intrauterine gestation of 5.4 weeks gestation present. There was also presence of bilateral ovarian mass with right ovary measuring 6.5×6.5 cm and left ovary measuring 8×5.3 cm with multiple large follicles within with moderate ascites and bilateral mild pleural effusion and features suggestive of ovarian hyperstimulation syndrome (Figure 1). Patient was admitted after taking proper high risk and guarded consents. Patient denied any infertility treatment, ovulation induction, oral medication or intramuscular injections in the past 6 months. Since the couple's family was complete, she wanted a medical termination of the pregnancy with permanent method of contraception. Her laboratory investigations were sent. Her input/output and abdominal girth were monitored. Her investigations are listed in Table 1.

Medicine reference of patient taken in view of ascites to rule out other causes. They advised ascitic fluid tapping to rule out abdominal tuberculosis, blood investigation to rule out acute pancreatitis. The reports are listed in Table 2.

Since there was no presence of bacteria, Tuberculous bacilli or malignant cells present. The fluid was labelled as exudative.

Raised levels of CA-125 gave an impression of ovarian carcinoma so magnetic resonance imaging (MRI) pelvis was planned after taking written consent from patient and relatives. Since the patient wanted MTP, she agreed on undergoing radiological diagnosis for the same. 2 D echo of the patient also revealed normal findings.

Table 1: Investigations done for the patient on admission and after one week.

Investigation	Value	Value (after 1 week)
Haemoglobin (g%)	12.3	10.0
Haematocrit (%)	36	35
Total leucocyte count (cells/dl)	12700	7600
Platelet (cells/dl)	334000	276000
Random blood sugar (mg/dl)	155	157
BUN (mg/dl)	18	8
Creatinine (mg/dl)	1.0	0.7
T. Bili (mg/dl)	0.6	0.5
SGOT/SGPT (U/l)	67/24	33/33
Prothrombin time (seconds)	15.3	14.2
INR	1.16	1.2
Sodium/potassium (mEq/l)	128/3.4	137/3.5
HIV, HBSAg, HCV	Negative	
Blood group	O positive	
Serum TSH (IU/ml)	1.29	
Beta hCG (IU/l)	2690	
Serum oestradiol (pg/ml)	300	

Table 2: Ascitic fluid investigations of the patient along with pancreatitis profile.

Parameters	Value
Serum amylase (IU/l)	32
Serum lipase (IU/l)	29
Ascitic fluid RBC (cells/cmm)	4000
Ascitic fluid nucleated cell count	50
Ascitic fluid proteins (g/dl)	4.17
Glucose (gg/dl)	163
Gram stain	No organism seen
ZN stain	No acid-fast bacilli seen
Ascitic fluid albumin (g/dl)	2.62
Lactate dehydrogenase (U/l)	305
Adenosine deaminase (ADA) (U/l)	2.2, negative

Table 3: List of ovarian markers done to rule out ovarian carcinoma.

CA-125 (U/ml)	2828
CEA (ng/ml)	1.73
LDH (U/ml)	437
AFP (ng/ml)	8.97

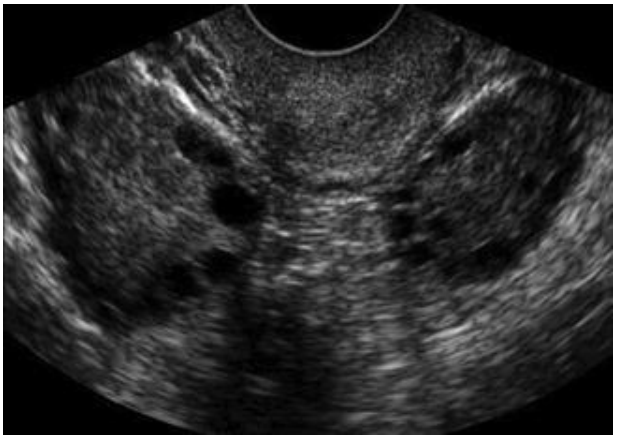

Figure 1: Ultrasound picture showing bilateral bulky ovaries with multiple large follicles.

MRI pelvis (1.5 Tesla) - uterus bulky, anteverted measuring 10×5.6×6.6 cm with G sac measuring 1.7×2.2×1.8 cm. LSCS scar seen in lower uterine segment.

Bilateral ovaries bulky with stroma shows homogenous post contrast enhancement. Multiple varying size T1 isointense T2/T2 FS hyperintense cystic lesions not showing restricted diffusion with few cysts showing peripheral foci of blooming on GRE (in left ovary) are noted in bilateral ovaries, largest measuring 4×4×4.6 cm in right ovary and 4×3.4×4.5 cm in left ovary.

Right ovary 6×6.5×6.4 cm (vol 125 cc).

Left ovary 4.3×6.4×8.3 cm (vol 15 cc).

Mild free fluid in abdomen and pelvis.

No evidence of dilated fallopian tubes noted.

Rest all other organs appears normal.

Thus, the diagnosis of spontaneous OHSS was confirmed after excluding all other diagnosis with the help of senior radiologists and physicians. She was monitored for one week in ward with adequate iv hydration, regular weight/input-output and abdominal girth monitoring and weekly lab investigations. She was also started on prophylactic antibiotics and multivitamins. Since there was no evidence of haemoconcentration, heparin was not started for her. Her abdominal girth decreased with decrease in her symptoms and weight. Serial ultrasound monitoring showed decrease in ascites and ovarian size. She was discharged two week later after stabilisation and on persistent request and called at 8 weeks gestation for MTP with bilateral tubal ligation with weekly follow up. On returning after 2 weeks, her body weight had decreased and ultrasonography (USG) showed no evidence of ascites. MTP followed by bilateral tubal ligation was done, intraoperatively there was complete resolution of ascites and enlarged ovaries. The patient was stable on discharge.

DISCUSSION

Ovarian hyperstimulation is a rare encounter in clinical practice and is mostly suspected in females undergoing fertility treatment. In a female with no history of ovulation induction or hormonal treatment with no previous medical records available for comparison, the diagnosis of OHSS is that of exclusion. In the above case, infectious as well as malignant causes have been ruled out. The cause of OHSS may be attributed to the endogenous rise in beta HCG in a previously PCOS picture leading to hyperstimulation which cause ascites and pleural effusion. The rise in CA-125 was non-specific and was due to inflammatory cause/pregnancy. Since there was no evidence of malignant cells in either Ascitic fluid tap or MRI, malignancy was ruled out. Absence of fever, no organism present in ascitic fluid and negative ADA levels rules out any bacterial/tuberculous infection.

OHSS can be divided into 3 categories as proposed by Royal college of obstetricians and gynaecologists (RCOG): mild, moderate and severe. In mild OHSS, abdominal bloating and mild abdominal pain occurs, with ovarian size usually <8 cm. In moderate OHSS, moderate abdominal pain and nausea with or without vomiting occurs with ultrasound evidence of ascites and ovarian size usually 8–12 cm. In severe OHSS, the following parameters can be seen: clinical ascites (± hydrothorax), oliguria (<300 ml/day or <30 ml/hour), haematocrit >0.45, hyponatraemia (sodium <135 mmol/l), hypo-osmolality (osmolality <282 mOsm/kg), hyperkalaemia (potassium >5 mmol/l), hypoproteinaemia (serum albumin <35 g/l), and ovarian size usually >12 cm. In critical OHSS, tense ascites/large hydrothorax, haematocrit >0.55, white cell count >25 000/ml, oliguria/anuria, thromboembolism, and acute respiratory distress syndrome can be seen.[5]

In the literature, there are many studies on pregnancy and management of OHSS. In mild cases of OHSS as discussed above, management of patient should be conservative with strict monitoring of all parameters keeping a keen eye on signs of haemoconcentration, hypovolemia, and coagulation disorders. Risk of abortions may increase due to development of OHSS in pregnancy. Since OHSS is usually self-limiting, the continuation of pregnancy is recommended. Generally, the pregnancy almost always reaches term. Very rarely, deaths due to hypovolemia, haemorrhage, and thromboembolic events have been reported.[6] According to RCOG guidelines, Women with severe or critical OHSS and those admitted with OHSS should receive LMWH prophylaxis.5

If conservative management fails or the symptoms of patients increase with time, there may be need of ascitic fluid tapping, terminating pregnancy, emergency laparotomy to treat other complications like ovarian torsion, ovarian rupture or intraperitoneal haemorrhage. Patients must be explained the severity of their symptoms and that they may require ICU admission anytime if their symptoms worsen. Early identification of patients at risk,

preventive strategies like heparin administration, bed rest, low sodium diet and intravenous (IV) furosemide in cases of pulmonary oedema/massive ascites or aspiration of 3rd space fluids may be necessary.

CONCLUSION

Though very rare, spontaneous OHSS should be considered as a differential diagnosis in a pregnant patient coming with ascites and 3rd space accumulation of fluid. Other causes should be ruled out. Most cases of OHSS, are mild and respond well to conservative management. It is a self-limiting condition and generally subsides with advanced weeks gestation.

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