



Ovarian Hyperstimulation Syndrome in Ovum Donor Case Report

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KEYWORDS:

INTRODUCTION

Ovarian hyperstimulation syndrome (OHSS) is an iatrogenic, serious complication of controlled ovarian hyperstimulation, usually self-limited but occasionally life threatening.

Ovum donation is the process by which a woman provides one or several ovum (eggs, oocytes) for purpose of assisted reproduction or biomedical research.

Despite of close monitoring during ovarian stimulation and following rigid guidelines and criteria, OHSS still occurs in less than 5% of ovum donors.

Proper consent of the patient was taken before presenting this case report.

CASE REPORT

A 29-year-old female admitted with history of nausea and vomiting of one-week duration followed by progressive abdominal distension and dyspnoea of three days.

She was apparently normal till one week back when she developed nausea and vomiting. Patient was married for seven years and had two live issues. She gave history of egg donation two weeks earlier in some private institution. On detail evaluation, she gave history of egg donation for more than 7 to 8 times, before this also.

On examination patient was breathless, her pulse rate was 112 per minute, blood pressure was 110/70 mm of Hg. Abdominal examination revealed the presence of ascites. Respiratory system examination revealed right sided pleural effusion.

She was advised x-ray chest and ultrasonography of abdomen.

Chest X-ray showed moderate right sided pleural effusion.

Ultrasonography revealed grossly enlarged both ovaries with multiple small cysts.

Right ovary measured 55x34x49 mm (50 cc volume) and left ovary 49x32x45 mm in size (46 cc volume).

Uterus was normal in size and no evidence of intrauterine pregnancy.

Moderate ascites and right sided moderate pleural effusion was also noted.

Laboratory investigations revealed a hemoglobin of 8 gm%, total count $7320/\mu^3$, total protein 4.2 gm%, serum albumin 3.0 gm%.

Rest laboratory investigations were within normal limits.

Immediately after admission, infusion therapy was started, consisting of normal saline-infusion, and glucose. For definitive treatment of

OHSS, tablet cabergolin 1 gm BD was given. Patient was treated with systemic antibiotics.

As patient had hypoalbuminemia, 100 ml of human serum albumin was given for 8 times over period of 10 days.

Body weight, abdominal circumference, fluid intake and output, ultrasonography, and laboratory studies were monitored strictly daily.

The patients' abdominal girth increased, so abdominal paracentesis for the drainage of the massive ascites became necessary which was carried out on day 4 and 7.

Pleural effusion resolved completely with medication.

She made a gradual recovery over the next twelve days and was discharged.

Follow up USG after week revealed completely resolved ascites and pleural effusion. Ovaries were within its normal volume.

DISCUSSION

Ovarian hyperstimulation syndrome (OHSS) is an iatrogenic, serious complication of controlled ovarian hyperstimulation, usually self-limited, but occasionally life threatening and typically occurs with gonadotropin, rarely with clomiphene citrate [1]. The symptoms are more severe and persist longer if pregnancy is successful. Patients who are pregnant sustain the ovarian luteinization process by the production of hCG. Although the pathophysiology of this syndrome has not been completely elucidated, the underlying mechanism responsible for the clinical manifestations of OHSS appears to be an increase in capillary permeability of mesothelial surfaces [2]. There is increasing evidence that certain vasoactive substances such as vascular endothelial growth factor (VEGF), cytokines (IL-2, IL-6, and IL-8), tumor necrosis factor-alpha (TNF-alpha), and the ovarian renin-angiotensin system, which are activated by gonadotropin, can lead to increased vascular permeability and extravascular fluid accumulation in OHSS [3,4].

VEGF has a major role in the pathogenesis of OHSS. It increases vascular permeability, which may explain fluid leakage in the third space. This leakage is responsible for the development of ascites, pleural effusions, edema, and hemoconcentration [5].

OHSS, characterized by third space fluid shift and intravascular volume depletion, results in massive ascites and hydrothorax. Ascites and pleural effusion usually occurs in the severe forms of OHSS [6]. In our case ascites occurred during the initial days of treatment.

If the OHSS develops within an IVF protocol, it may be prudent to postpone the embryo transfer since the establishment of pregnancy can lengthen the recovery time or contribute to a more severe course. Instead of canceling the cycle, it is also possible to administer hCG to retrieve the oocytes and to freeze all embryos.

Physicians can reduce the risk of OHSS by monitoring FSH therapy to use this medication cautiously, and by withholding hCG medication. The patients with OHSS must be treated urgently and with multidisciplinary management. If left untreated, OHSS can result in serious health complications and even death.

CONCLUSION

In conclusion, OHSS should be considered in any women presenting with history of serous effusions and ovulation induction. The syndrome can range from mild symptoms to life-threatening pericardial effusions and myocardial ischemia. Prompt recognition and initiation of fluid therapy can reduce morbidity and prevent mortality.

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